

THE NONLINGUISTIC MIND: NONLINGUISTIC CONCEPTS, NORMATIVITY, AND
ANIMAL COGNITION

by

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Dalhousie University is located in Mi'kma'ki, the
ancestral and unceded territory of the Mi'kmaq.
We are all Treaty people.

To Ebony,

This project is a long tangent in a conversation on animals and altruism that started nine years ago at *Ye Olde Orchard*. I can't wait to see where the conversation goes next.

TABLE OF CONTENTS

LIST OF FIGURES.....	vi
ABSTRACT.....	vii
LIST OF ABBREVIATIONS USED.....	viii
ACKNOWLEDGEMENTS.....	ix
CHAPTER 1: INTRODUCTION.....	1
CHAPTER 2: A CAUSAL ROUTE INTO THE SPACE OF REASONS.....	16
1. THE MYTH OF THE GIVEN.....	17
2. ACQUIRING CONCEPTUAL CAPABILITIES.....	23
2.1 Understanding.....	25
2.2 Epistemically Efficacious Content.....	25
2.3 Preconceptual Children.....	27
3. A TRANSCENDENTAL ARGUMENT FOR NONCONCEPTUAL CONTENT.....	36
4. GRASPING CONCEPTS AND NONLINGUISTIC ABILITIES.....	43
5. CONCLUSION.....	46
CHAPTER 3: A SELLARSIAN ARGUMENT FOR NONLINGUISTIC CONCEPTS.....	48
1. NOMINALISM AND MEANING.....	50
2. NONLINGUISTIC CONCEPTUAL CAPABILITIES.....	58
3. CONCEPTS AND KNOWLEDGE.....	72
4. FIXING SEMANTIC CONTENT.....	79
5. ANTI-REPRESENTATIONALISM.....	97
6. CONCLUSION.....	104
CHAPTER 4: MAKING IT NONLINGUISTICALLY EXPLICIT.....	106

1. EXPLICITNESS.....	108
2. LINGUISTIC FORM IS NOT SUFFICIENT.....	111
3. LINGUISTIC FORM IS NOT NECESSARY.....	117
4. EASE OF USE AND VARIETY OF MODES OF USE.....	122
4.1 Ease of Use.....	123
A. Observatives.....	123
B. Gestural Communication.....	135
4.2 Variety of Modes of Use.....	139
C. Teaching.....	140
D. Play.....	144
5. CONCLUSION.....	148
CHAPTER 5: INFERENCES IN THE WILD.....	150
1. BERMÚDEZ ON ANIMAL INFERENCE.....	152
2. THE TAKING CONDITION.....	159
3. MATERIAL INFERENCES.....	162
4. IDENTIFYING INFERENCES IN THE WILD.....	167
5. AN EXTERNALIST ACCOUNT OF THE NORMATIVITY OF INFERENCE.....	177
6. CONCLUSION.....	190
CHAPTER 6: CHIMPANZEES IN THE SPACE OF REASONS.....	193
1. THE SPACE OF REASONS.....	196
2. SCOREKEEPING.....	198
2.1 Acknowledging Commitments.....	199
2.2 Attributing Commitments.....	202

2.3 Nonlinguistic Commitment Attribution.....	212
3. INFERENCE AND NORMATIVITY.....	215
4. CHIMPANZEE NORMATIVITY.....	224
5. CONCLUSION.....	239
CHAPTER 7: CONCLUSION.....	243
REFERENCES.....	250

LIST OF FIGURES

Figure 1 A Possible Set of Cards for a Relational Matching-to-Sample Task.....65

ABSTRACT

Normative conceptual holists believe that (1) grasping a concept is only possible for subjects participating in normative social practices, and that (2) grasping any one concept depends on grasping many concepts. They take a consequence of this theory to be that only creatures with linguistic capabilities can have conceptual capabilities. In my dissertation, I argue that any nonlinguistic animal with sufficiently sophisticated social practices and cognitive capabilities can meet these normative and holistic conditions for having conceptual capabilities.

In Chapter 2, I argue that any version of normative conceptual holism that makes language necessary for concept acquisition leads to the absurd conclusion that concept acquisition is impossible. I argue that the only way to avoid this *reductio* also removes the reason for thinking that conceptual capabilities require linguistic capabilities.

In Chapter 3, I argue that Sellars' account of psychological nominalism and picturing can be operationalized to distinguish behavioural tasks that can be solved through nonconceptual means from those that require conceptual capabilities. I then argue that the ability of crows and amazons to solve relational matching-to-sample tasks requires an awareness of abstract relations, and therefore demonstrates that they grasp the concepts of SAME and DIFFERENT.

In Chapter 4, I argue that nonlinguistic animals are capable of making content explicit. Brandom, Dennett, and others argue that only content that can function as a reason can count as conceptual content, and only explicit content can function as a reason. Clark defines the implicit/explicit distinction as a continuum with two dimensions: ease of access and variety of modes of use. Given this definition, I argue that the communicative behaviours of nonlinguistic animals demonstrate that they are capable of making and using explicit content, and therefore, at least some nonlinguistic animals are capable of putting content in the form of a reason.

Attributing reasons only makes sense for beings that are capable of reasoning, so in Chapter 5, I consider arguments that claim that inferential capabilities require linguistic capabilities. First, I argue that Bermúdez's denial of nonlinguistic animal inference rests on a formal and syntactic view of inference that conflicts with empirical work on the reasoning abilities of neurotypical adult humans. Second, I consider Boghossian's argument that inferences require 'taking states' that are only possible for beings with linguistic capabilities. Boghossian claims that only taking states can make sense of the normativity of inference and distinguish inferences from other sorts of mental transitions. In response, I argue that taking states are not able to do either of these tasks and propose an alternative account of inference based on Brandom's externalist approach to epistemic responsibility.

In Chapter 6, I argue that the social practices of some nonlinguistic animals can be interpreted as making commitments, and therefore, nonlinguistic animals with sufficiently sophisticated social practices should be regarded as members of the space of reasons. Brandom has argued that only linguistic assertions count as commitments because only they can license further inferences and be something that the asserter can be held epistemically responsible for. I argue that chimpanzee pant grunts can license further inferences and undertake a responsibility. Pant grunts are vocalizations that signal submission to higher-ranking chimpanzees. Pant grunting or failing to pant grunt signals a commitment to others (licenses further inferences) for or against one's place within the social hierarchy that the chimpanzee can be held responsible for (makes a social commitment).

LIST OF ABBREVIATIONS USED

NCH	Normative Conceptual Holism
IMTS	Identity Matching-to-Sample Tasks
RMTS	Relational Matching-to-Sample Tasks

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Chapter 1 Introduction

Humans with linguistic abilities generally engage with the world through concepts. Looking around my workspace, I see a rickety table, a half-full coffee mug, and a burning candle. In other words, perceiving the objects in my workspace (on some level) involves the use and application of concepts like TABLE, MUG, and CANDLE,¹ among others.² Our experiences, judgements, perceptions, and thoughts seem so shot through with concepts, that even when I try to break down these experiences into their more basic parts, I will most likely find myself still applying concepts. Instead of using concepts that classify the mid-size objects that populate our world, I may now find myself using concepts about their colour, shape, and material. Furthermore, I do not just see my environment through concepts, but it seems like my ability to interact or even understand how to interact with the objects that compose it depends on my grasp of the appropriate concepts. My understanding of what a mug is seems to allow me to understand how I can interact with it. I am not making the conceptualist claim here that all cognition is conceptual cognition (as we will see in Chapter 2 and 3, there is room for nonconceptual content in the framework I develop). Instead, I am pointing out that our understanding of cognitive acts like perception or judgment usually involves the attribution of concepts and/or conceptual capabilities, and it can be hard to even understand how to conceptualize these cognitive capacities without attributing concepts and/or conceptual capabilities.³ So, if we understand the

¹ In this dissertation, I follow the convention of using small caps when referring to a concept instead of the object that it identifies, or the word used to express/represent it.

² There is some dissent about this claim by eliminativists about concepts (e.g., Machery, 2009; Millikan, 2017), but the idea that cognition, perception, experience, and so on involves concepts is a claim that is accepted by a wide swath of philosophers from many different camps trying to understand the nature of these phenomena. For example, while Jerry Fodor (1998) and Robert Brandom (1994) are unlikely to agree on little else, both will take understanding the nature of concepts as fundamentally important for understanding how the mind works.

³ There are certainly attempts by theorists to understand cognition without attributing conceptual capabilities, such as some from the enactivist/embodied mind camp, but I suspect that even they will admit that this is the

adult, neurotypical human mind as involving conceptual capabilities and concepts in some fundamental way, how should we understand the minds of nonlinguistic animals?

To understand the potential challenge here, consider the concept TABLE. This seems like a relatively basic concept; however, attributing this concept to a nonlinguistic animal runs into serious difficulties, such as to the hypothetical mouse peering out at the table from her hiding spot behind the baseboards. Understanding what a table is requires social and cultural knowledge that may be relatively basic to humans with linguistic capabilities who live in our current social and cultural context, but it is unclear how a mouse could acquire such knowledge. The mouse, after all, does not sit at tables, set tables for meals, or forgetfully place their house keys on tables, and so on. The mouse likely does not even grasp that tables generally come with four legs, are often made of material that comes from cut down and processed trees, or that they are often intentionally built objects designed with a specific set of purposes in mind (such as meals, work, and entertaining).

The problem does not disappear if we respond to this problem by insisting that the concepts that we attribute to the mouse just need to be more basic. As Robert Brandom (1994) has pointed out, it seems like grasping even the most basic concepts requires the ability to make inferences about that concept's relation to other concepts. For example, Brandom argues that one cannot grasp the concept RED unless they are able to infer that any object that is entirely red is not green (p. 89). The idea that grasping a concept requires the ability to grasp other concepts (likely many other concepts) is called conceptual holism, and the idea that grasping many concepts involves being able to make inferences from and to the application of said concept is called inferentialism. Some philosophers, such as Jerry Fodor and Ernest Lepore (1992), have

theoretical starting point (even if it needs to be rejected in the end), given that they regularly portray themselves as fighting the good fight against mainstream cognitive science (e.g., Gallagher, 2017).

thought that there are serious philosophical problems with this view, but it is easy to motivate its intuitive appeal. For example, if a young child is able to reliably distinguish rabbits from non-rabbits but refuses to apply the label ‘animal’ to rabbits, this seems like a good reason to deny that the child grasps the concept RABBIT.⁴ So, it seems like understanding a given concept is predicated on understanding other concepts and so on.

So, let’s presume with Brandom that grasping even seemingly basic concepts requires being able to make inferences based on the application of those concepts, such as inferring from something being a rabbit to something being an animal, or inferring from something being entirely blue to it not being green. Is this sort of inference outside the mental capacities of nonlinguistic animals? A lot of philosophers, including Brandom (1994), have simply assumed that it is. Take the blue/green example; this seems like a simple enough of an inference, but it includes the logical concept NOT. There are prominent arguments even from theorists willing to attribute quite sophisticated cognitive capabilities to nonlinguistic animals, such as José Luis Bermúdez (2003), that grasping logical concepts requires language. For example, as I will discuss in Chapter 5, Bermúdez (2003) argues that logical concepts require the ability to think about how the parts of a thought contribute to the truth or falsity of the whole, and such thinking about thinking is only possible through language (p. 165). So, there are reasons to think that the mouse peering out from behind the baseboards will not be able to make the appropriate inferences from her ability to identify blue objects on the basis of their perceived colour.

⁴ I say ‘good reason to deny’ here, but it is important (at least at this stage of the dissertation) to neither take this reason as ultimate nor indefeasible. One might have other reasons to attribute the concept that outweigh this reason even if we still regard it as a good reason to deny attributing the concept RABBIT. Or one might want to argue that it is possible to partially grasp the concept RABBIT without further grasping the concept ANIMAL. At this stage of the dissertation, I am merely trying to motivate an intuition that has been used to deny that nonlinguistic animals have conceptual capabilities; I am not trying to take a strong stance on the position which will be further motivated and defended later on.

Therefore, it would be inaccurate to attribute the concept BLUE to her, even if she is reliably able to distinguish blue objects from green objects.

Even if the philosophy of animal minds is able to overcome this problem, there is a further problem with attributing conceptual capabilities to nonlinguistic animals that comes from the theoretical work of Brandom (1994) and others. These philosophers claim that the application/use of a concept is always normative. By this, they mean that the application of a concept is something that can always be judged as appropriate or inappropriate, and part of what being able to apply or use a concept means is the ability to provide reasons for the application of said concept if one is asked to give them (p. 188). The normative space that is constructed out of the ability to give and ask for reasons, they call the ‘space of reasons’. In order to have conceptual capabilities, they claim that one must be capable of navigating that space. What I will call normative conceptual holism (NCH) is the combination of conceptual holism with the claim that concepts and conceptual capabilities are normative.

I take Wilfrid Sellars (1956), John McDowell (1996), and Robert Brandom (1994) to be the central figures that hold this position, though as we will see, these philosophers also disagree on a number of issues. In addition, the wide-ranging influence of Sellars means that there are many figures who also have at least one foot in this framework, such as Richard Rorty (2017), Daniel Dennett (2008), Andy Clark (2003), Jay F. Rosenberg (1997), Quill Kukla & Mark Lance (2009), and Paul Churchland (1993), among many others who will be discussed in this dissertation. Many of these theorists think that this condition for grasping a concept also rules out the possibility of nonlinguistic animals having conceptual capabilities because nonlinguistic animals do not live in the right sorts of normative social communities or engage in the right sorts of normative social practices. For example, even if we presume that the mouse is able to

accurately sort blue objects from differently coloured objects, no one will ever demand that the mouse provide a reason for her treating some objects as blue, and if one did, it is unlikely that she would be able to provide a reason for it. According to many of these theorists, such social arrangements and such practices are only possible for beings with sophisticated linguistic capabilities.

So, where does that leave an understanding of nonlinguistic animal minds? For some of these philosophers, there is no mind there to understand. At his most brazen, Brandom (2009b) compares the reactions of nonlinguistic animals to their environments to iron rusting when there is moisture in the air (pp. 200-201). While others are less extreme in their denial of animal minds, there is generally still the sense that without conceptual capabilities, the minds of nonlinguistic animals are severely limited. Dennett (1995), for instance, distinguishes the ability to suffer from merely being able to feel pain. He argues that only beings with sophisticated conceptual capabilities can suffer, and of these two abilities, only suffering has ethical significance (p. 707). While some of these philosophers, such as Dennett, do engage with empirical work on animal behaviour, most normative conceptual holists make claims about what animals can and cannot do from the armchair.⁵ In such cases, the claimed mental and behavioural limitations of nonlinguistic animals are a consequence of their theory that linguistic capabilities are necessary for conceptual capabilities, or in some cases, even having a mind.

⁵ While Dennett does engage with empirical work on nonhuman animals, he also has a bad habit of relying on anecdotes that he has heard from scientists in conversation. For example, in *Kinds of Minds*, he relies on a claim mentioned in a conversation with Marc Hauser that male rhesus monkeys will regularly fight during their mating season and in those fights, they will often rip each other's testicles off (Dennett, 2008, p. 94). Dennett cites Hauser as saying that after a rhesus monkey has had a testicle ripped off of their body, they will generally just go on with their business as if nothing has happened. Dennett uses this claim to support his argument that nonlinguistic animals cannot suffer (pp. 167-168). However, actual empirical work does not paint a picture of a particularly violent mating season. Male rhesus macaques generally do not fight (at least directly) for mating access, instead they "engage in periods of consortship and the following of females to obtain matings" (Higham & Maestriperieri, 2014, p. 663).

This might be a fine place to stop if this did not run headfirst into many people's experiences interacting with nonhuman animals, or more importantly the scientific work currently emerging from animal behavioural science, which seems to show that nonlinguistic animals are capable of sophisticated cognitive feats (Andrews & Monsó, 2021). For some, this might provide a good reason to reject NCH and develop an alternative theory of concepts and conceptual capabilities. Hence, most theorists who are interested in philosophically engaging with animal behavioural research tend to approach it with theories that deny NCH claims about how cognition works or what it takes to grasp a concept.⁶ However, I find many of the ideas in NCH to be compelling (as I have already tried to motivate, at least on an intuitive level) and ideas from these frameworks have been fruitfully used to develop useful tools for understanding human behaviour and social phenomena (e.g., Tirrell, 2012). Since the reasons given for not applying these frameworks to nonlinguistic animals rarely come from a considered engagement with empirical work, there is a significant opportunity to see what will come from an interaction between NCH and the animal behavioural sciences.

This dissertation attempts to facilitate a productive interaction between NCH and animal behavioural science. The central claim that I take to emerge from this interaction is that at least some nonlinguistic animals have conceptual capabilities. While I will motivate some changes in the NCH framework that I think are forced by taking the behaviour of nonlinguistic animals seriously, the framework that emerges should still count as a form of NCH, especially given its fundamental rooting in the work of Sellars and Brandom. I think there are philosophically good reasons to adopt such a framework; however, my strategy will not be to argue directly for NCH *per se*. Instead, I will justify it pragmatically by showing what we can do with an adjusted

⁶ Some notable exceptions are Danón (2019), Griffin (2018), and Nelson (2020).

version of NCH. As I have argued in prior work (forthcoming), it is not always clear what exactly researchers should even be looking for when evaluating whether nonlinguistic animals grasp concepts, are rational, and so on. So, my hope is that there is value in this work even for those theorists who do not find NCH plausible, given that the aim of this dissertation is to further develop tools that can be applied to understanding animal behaviour which will sharpen our sense of what we are even looking for in the first place.

To motivate the idea that normative conceptual holists must take the behaviour of nonlinguistic animals, including prelinguistic humans, seriously, in Chapter 2, I argue that a *reductio ad absurdum* can be derived from the philosophical commitments that motivate the exclusion of nonlinguistic animals from the domain of beings with conceptual capabilities. One way of interpreting Sellars' famous argument against the Given is as an argument that shows that nothing can be both epistemically efficacious and epistemically independent (DeVries et al., 2000). Content is epistemically efficacious if it can be used to justify further epistemic content, and content is epistemically independent if it does not rely on other epistemic states or processes. One of the main motivations for NCH's emphasis on language is that language provides epistemically efficacious content that is not epistemically independent. If it takes linguistic capabilities to have content that is not Given, then attributions of concepts or conceptual capabilities to nonlinguistic animals are mistaken or can, at best, be counted as useful heuristic devices for understanding animal behaviour.

I argue that the claims that motivate this conclusion can also be used to argue that it is not possible to acquire conceptual capabilities. Since normative conceptual holists are anti-nativists and they take prelinguistic children to lack conceptual capabilities, this puts significant stress on the position. Some normative conceptual holists have tried to ignore problems of acquisition by

claiming that their projects are about semantics and not acquisition. However, if my argument works, it does not just show that there are problems with their approaches to explaining concept acquisition, but that within their framework, it is not *possible* to acquire conceptual capabilities. Since every neurotypical human is or has been a preconceptual child, this leaves their frameworks in the awkward position of not being able to apply the very objects of their theories to anyone.

I argue that a solution to this problem can be found by rejecting the idea that acquiring concepts, or at least the initial set of concepts, is an epistemic process. This means that it is possible to acquire conceptual capabilities solely through (nonnormative) causal means, even if the end result is a holistic and normative capability. The sorts of objections that are usually levelled against this type of approach can be avoided by developing a forward-looking account of non-epistemic independence, meaning that epistemic independence is avoided by the inferences that can be made after the emergence of conceptual capabilities and content, not by looking backwards to antecedent conceptual states/content or inferences. Since acquisition not only can be explained solely through causal processes but must be explained solely through (nonnormative) causal processes, there is little remaining reason to claim that linguistic capabilities are necessary for acquiring conceptual capabilities.

So, if it is possible to acquire conceptual capabilities without linguistic capabilities, the next question to ask is: do nonlinguistic animals have conceptual capabilities? In Chapter 3, I argue that a version of psychological nominalism interpreted through the later work of Sellars (e.g., 1981) shows that animals that are able to solve relational matching-to-sample (RMTS) tasks have conceptual capabilities. I discuss a number of experiments where crows and amazons are able to solve these tasks (Smirnova et al., 2021), and argue on the basis of them that at least

some nonlinguistic animals have conceptual capabilities. The form of psychological nominalism that I extract from the work of the later Sellars is that all awareness of abstract entities is a conceptual affair. This claim provides a way to distinguish between conceptual capabilities and/or content, and nonconceptual capabilities and/or content.

I then argue that success at RMTS tasks requires an awareness of abstract entities/relations. RMTS tasks ask the subject to match a test card to one of set of potential matching cards, based on the relation represented on the test card. So, for example, if the test card has two different shapes on it, then the subject needs to match it to the potential matching card that also has two different shapes on it. In other words, the task requires the ability to grasp the abstract relation of difference. To show that the task cannot be solved through nonconceptual means, I use Sellars' (2007a) account of picturing which is the process through which a nonconceptual animal representational system can represent things in the world. Importantly, without concepts, picturing can only pick up on the nominalistic structure of the world, so abstract relations cannot be pictured. I test whether RMTS tasks can be solved through picturing by seeing if an individual could solve the task using Sellars' toy language Jumblese (a language that can only picture). Given the failure of picturing to solve RMTS tasks, there is an argument from Sellarsian psychological nominalism to nonlinguistic conceptual capabilities.

I end Chapter 3 by considering and responding to three important objections to this claim. The first argues that, from a Sellarsian perspective, only beings that can have knowledge can have conceptual capabilities. Having knowledge from a Sellarsian perspective requires an understanding of the is/looks distinction, and the ability to navigate this distinction is beyond the abilities of nonlinguistic animals (Sellars, 1956). In response, I argue that Sellars' account only requires a grasp of the is/looks distinction to be implicit, and that experiments with chimpanzees

(Krachun et al., 2016) are (at the very least) suggestive that they can navigate the reality/appearance distinction which lines up with the is/looks distinction. Second, I consider the objection that it is not possible to fix semantic content when attributing conceptual content to nonlinguistic animals. My central response to this argument is that many of the objections used in these types of arguments can also create difficulties for fixing semantic content for linguistic beings. I argue that these difficulties can be avoided by adopting the later Wittgenstein's notion of an internal relation (Hymers, 1996). For Wittgenstein, two concepts have an internal relation if in order to understand one, one must understand the other, and I argue that this provides a way to limit the number of concepts that must be attributed to any one individual in order to attribute a given concept to them. I then argue that this strategy shows that the crows and amazons that successfully completed RMTS tasks grasped the internal relation between SAME and DIFFERENT, so we can attribute fixed content to them. Third, I consider an objection to Sellars' use of representations to understand human and animal minds. In response, I argue that the central arguments of the chapter can be made without the attribution of representations, but that representational approaches in cognitive science are superior to non-representational approaches, though even if that were not the case, the main arguments against representationalism do not apply to Sellars' use of representations.

I suspect that many normative conceptual holists will be unmoved by this result. NCH is not only holistic about concepts themselves, but takes conceptual capabilities to only be possible if one has a number of other capabilities as well. So, over the next three chapters, I argue that nonlinguistic animals are capable of making content explicit, making inferences, attributing and acknowledging commitments, making assertions, and partaking in normative social practices. First, in Chapter 4, I argue that nonlinguistic animals are capable of making and having explicit

content. Explicitness has often been defined as a form that content can take and normative conceptual holists have argued that content is explicit when it is propositional and linguistic. In response, I argue that linguistic form is neither necessary nor sufficient for content to be explicit. I argue that in order for content to be explicit to or for a subject, they must be aware of it and understand it. Given that content can be in a linguistic form and a subject can still lack awareness or understanding of it, I argue that linguistic form is not sufficient for explicitness. I argue that linguistic form is not necessary for explicitness on the basis of identity claims between reasons and explicit content. In other words, if something is a reason, then it is explicit, and vice versa. I claim that nonlinguistic demonstrations can function as reasons. Therefore, linguistic form is not necessary for explicitness. I end Chapter 4 by considering an objection that claims that while linguistic form is neither necessary nor sufficient for explicitness, only creatures with linguistic capabilities can make content explicit. In response, I argue that ease of use and variety of modes of use are empirical markers for explicitness and given those markers, a wide range of communicative nonlinguistic animal behaviour either counts as making content more explicit for others or demonstrates that they have explicit content.

The importance of demonstrating that nonlinguistic animals are capable of making content explicit is that philosophers, such as Brandom (1994) and Dennett (2008), have argued that only explicit content can function as a reason. If only beings that are a part of the space of reasons can have conceptual capabilities, then any argument for the claim that nonlinguistic animals have conceptual capabilities will require demonstrating that they grasp content in the form of a reason. However, the idea of having reasons borders on incoherent unless one can make some inferences with those reasons or involve those reasons in reasoning processes. So, in addition, it needs to be shown that nonlinguistic animals are capable of making inferences.

In Chapter 5, I consider some prominent objections to attributing inferential capabilities to nonlinguistic animals. For instance, while Bermúdez (2003) is willing to attribute structured and semantic thoughts to nonlinguistic animals, he argues that inferences require language.⁷ His argument for this claim is that only linguistic thoughts can have the right sorts of syntactical structures for formal rules of inference to operate on. Furthermore, inferential capabilities require metacognitive capabilities because one must be able to think about how the truth-value of the parts of a thought can contribute to the truth-value of the whole. Bermúdez claims that the form of metacognition required for this sort of task requires language. In response, I argue that there are good reasons to question Bermúdez’s conception of inference. I do this by first pointing out that experimental work on the inferential capabilities of linguistic humans does not line up well with understanding inference as a metacognitive syntactical process. Second, Bermúdez’s argument rests on an ‘only game in town’ style claim, so I point out that there are other plausible conceptions of inference by turning to Sellars’ (1953) and Brandom’s (1994) work on material inferences. This approach takes inferences to be first and foremost driven by semantics, so that an understanding of the concepts involved in a claim and the claim that follows from it are what drive the inference instead of the application of a formal rule.

⁷ Some may think that I am misinterpreting Bermúdez’s arguments here. In *Thinking Without Words*, he distinguishes between an inferential understanding of rationality and a nonlinguistic understanding of rationality. He states that “nonlinguistic creatures are not reasoners in anything like the sense required for them to be rational on the inference-based conception of rationality” (2003, p. 112). However, Bermúdez does think that one can attribute a different form of rationality to nonlinguistic animals that includes the use of protoinferences. It is not always clear how to interpret the relation between protoinferences and inferences. In some passages, Bermúdez makes it sound like protoinferences are a type of inference (e.g., p. 148), and in others, he makes it sound like protoinferences are nonlinguistic analogues that precede actual inferential capabilities (e.g., 147). In later work, Bermúdez (2006) seems more comfortable attributing inferential capabilities to nonlinguistic animals. Wherever Bermúdez’s actual views end up landing, I take his arguments in *Thinking Without Words* to provide a set of potential objections to attributing inferential capabilities to nonlinguistic animals that my own account needs to overcome. If one thinks that Bermúdez’s approach is friendlier to attributing inferential capabilities to nonlinguistic animals than I have taken it to be, then no such overcoming is required, and one is welcome to skip past the first section of Chapter 5.

The second major objection comes from Boghossian's (2014) work on the taking condition. Boghossian argues that the ability to distinguish inferences from other sorts of mental transitions and the fact that one can be held responsible for an inference can only be explained by the existence of a taking state. A taking state is a metacognitive mental state whose intentional content is a formal rule of inference, such as *modus ponens*, which explains and rationalizes the inference. Mental transitions that lack taking states are not inferences and it is the content of one's taking state which allows one to be held responsible for their inference. Therefore, Boghossian claims that taking states can distinguish inferences from other sorts of mental transitions and can explain the normativity of inference.

Since the taking state is a metacognitive state and Boghossian (2016) seems to take language as necessary for the ability to have metacognitive states, he argues that nonlinguistic animals cannot make inferences. In response, I argue that taking states are not able to fulfill either of the requirements that motivated their adoption in the first place. I do this by showing that once we step outside Boghossian's toy examples, which stipulate from the outset whether they involve taking states or not, it is not possible to tell whether or not someone has a taking state. This inability means that it will not be possible to tell whether one is making an inference or merely making a mental transition. As a result, taking states cannot explain the normativity of inference because it will not be possible to tell which mental transitions others should be held responsible for. Therefore, I propose an alternative framework for distinguishing inferences from mere mental transitions and explain the normativity of inference using Brandom's (1994) externalist⁸ account of responsibility. In this framework, an inference is a transition between commitments that one can be held responsible for, where there is nothing more to being

⁸ All uses of the terms 'internalist' and 'externalist' in this dissertation refer to epistemic internalism and externalism.

responsible for a transition than that others are generally disposed to reward or sanction one for it.

Given that the major objections to attributing inferential capabilities to nonlinguistic animals rest on flawed conceptions of inference, in Chapter 6, I apply Brandom's (1994) inferentialist framework, including his externalist account of responsibility, to the social practices of nonlinguistic animals. I argue that the successful application of this framework to social practices of chimpanzees shows that it is possible for nonlinguistic animals to partake in normative social practices. My argument in this chapter proceeds in two stages. In the first stage, I argue that it is possible for nonlinguistic animals to attribute and acknowledge commitments, make the sorts of mental transitions that we could call inferences in a human context, and hold each other responsible for their commitments through rewarding and sanctioning practices. This stage draws from empirical work on many different species of nonlinguistic animals because my aim is to show that each of these conditions can be met without linguistic capabilities.

The second stage focuses on pant grunting in free living chimpanzee populations and argues that each of these conditions can be met by a single species in a given social community (i.e., free living chimpanzees). Pant grunting is a way of signaling submission to male chimpanzees higher in the social hierarchy (Stanford, 2018), and I argue that pant grunts meet both of Brandom's (1994) conditions for being able to make an assertion. First, a performance only counts as an assertion if it can license further assertions and inferences, and second, a performance only counts as an assertion if one can be held responsible for it. I argue that pant grunts meet both of these conditions. First, by pant grunting or not pant grunting when expected to, a lower-ranking chimpanzee makes an explicit commitment either to the current social hierarchy or against it. Other chimpanzees in the community that witness the interaction are able

to use the information to make further commitments and inferences as they navigate the social hierarchy themselves. Second, lower-ranking chimpanzees that fail to pant grunt when they are expected to can be held responsible for their commitment against the existing social hierarchy by the higher-ranking male chimpanzee. The fact that chimpanzees can be sanctioned or rewarded for these types of performances by other chimpanzees shows that they live in a normative social community.

The evidence I use in this final stage relies on both laboratory work and field studies, and occasionally I have to fill in an existing gap with empirical results from other nonhuman primate species. I think that this kind of comparative work is legitimate in the study of animal behaviour, but one could argue that my reliance on some of these sources shows that while I can attribute any one of the necessary capabilities to some nonlinguistic animal species, I have failed to show that any one nonlinguistic animal species has all of the necessary capabilities for conceptual capabilities. In the final section of the dissertation, I argue that this sort of objection cannot be coherently made by normative conceptual holists given their claims that one can only have any one of these capabilities if they have all the capabilities. For theorists who would raise this objection outside of NCH, I point out that even if I grant the truth of this objection, the dissertation still results in a significant conclusion. While granting the objection may get in the way of being able to argue that some nonlinguistic animals have conceptual capabilities, it cannot deny that nonlinguistic conceptual capabilities are possible. Given that many of the arguments against attributing conceptual capabilities to nonlinguistic animals are based on the claim that it is only possible to have conceptual capabilities with linguistic capabilities, this conclusion is only a few steps away from the stronger more specific one.

Chapter 2

A Causal Route into the Space of Reasons: The Myth of the Given, Concept Acquisition, and Emergence

The success of nonlinguistic animals at certain types of behavioural tasks has convinced many researchers in the animal behavioural sciences to attribute conceptual capabilities to nonlinguistic animals (for an overview of some of this work with birds, see Castro & Wasserman, 2017). In contrast, normative conceptual holists, such as Wilfrid Sellars, John McDowell, and Robert Brandom, argue that there are a priori reasons for not attributing concepts or conceptual capabilities to nonlinguistic animals. As mentioned in the previous chapter, NCH is the view that (1) grasping a concept is only possible for creatures that are able to participate in normative practices, and (2) in order to grasp any one concept, one must grasp many concepts. It is usually presumed that satisfying conditions (1) and (2) is only possible for beings that have linguistic capabilities.

Normative conceptual holists motivate this consequence by arguing that any account of concepts that requires or allows for prelinguistic or nonlinguistic conceptual content problematically relies on the Myth of the Given. Content that is Given is content that is both epistemically independent and epistemically efficacious. Content is epistemically independent if it does not rely on any other epistemic states or processes, such as beliefs or inferences, and content is epistemically efficacious if it is able to justify further epistemic states or processes. Sellars' famous argument against the Given (1956) is an a priori argument against the possibility of any content being both epistemically independent and epistemically efficacious. NCH avoids appealing to the Given in its account of concepts and conceptual capabilities by denying that any content is epistemically independent. Instead, conceptual content is set up, grasped, and used through the normative and holistic space of reasons which is only accessible to beings with

linguistic capabilities. Therefore, Sellars' argument both motivates a normative and holistic account of concepts and provides an a priori argument against attributing conceptual capabilities to nonlinguistic animals. In other words, if Sellars is correct, then comparative psychologists, ethologists, and cognitive scientists are mistaken if/when they attribute conceptual capabilities to nonlinguistic animals.

In this chapter, I argue that the claims that motivate this conclusion also lead to absurdities. Normative conceptual holists take conceptual capabilities to be acquired, but I will show that the arguments above actually make it impossible to explain concept acquisition. The combination of these two claims, in addition to fact that all neurotypical humans are or have been preconceptual children at some point means that a further absurdity can be derived: that it is not possible for humans to have conceptual capabilities. This means that as a theory of concepts, NCH is incapable of attributing the very objects of its theory to the subjects of its theory. I argue that NCH can avoid this result if it takes the acquisition of conceptual capabilities (or at least the initial acquisition) to be an entirely (nonnormative) causal process that does not rely on prior epistemic content or states. While the resulting view allows NCH to avoid the reductio, it also undercuts its ability to argue that linguistic capabilities are necessary for acquiring conceptual capabilities.

1. The Myth of the Given

While it is too soon to claim that anything like a scientific consensus has been reached, as noted at the beginning of this chapter, many researchers in the fields of comparative psychology, behavioural ecology, and cognitive science are willing to attribute conceptual capabilities to nonlinguistic animals (see Shettleworth, 2009, pp. 167–209 for an overview). In these fields, acquiring a concept is widely understood to involve the process of abstraction. In their article on

avian relational concepts, Castro and Wasserman (2017) define abstraction as “the cognitive process of isolating a common feature or relationship observed in a number of things” (p. 229). Evidence for this capability is gathered by seeing if a subject can learn a relationship from a set of training stimuli and then apply it to novel stimuli. For example, Clark’s nutcrackers and black-billed magpies have demonstrated the ability to correctly identify which *novel* sets of pictures are the same or different after learning the relations of same and different through reinforcement training (Magnotti et al., 2015, 2017; Wright et al., 2016, 2017, 2018; Wright & Kelly, 2017). The appropriate response to novel stimuli (either pecking one of the pictures to indicate that they are the same or pecking a white square to indicate that they are different) is regarded as evidence that the bird was able to abstract the relation from the training set.

According to normative conceptual holists, especially those inspired by the work of Sellars, abstraction cannot explain concept acquisition without relying on the Myth of the Given. Sellars (1956) argues that empiricist accounts of concept acquisition rely upon the ability to associate particular features of one’s experience with linguistic sounds/marks. For example, an abstractionist account of acquiring the concept DOG might argue that one learns the concept DOG by recognizing instances of dogs in their experiences and then connecting those instances to the word ‘dog.’ However, Sellars argues that the ability to associate a feature from one’s experience with a word or label presupposes “that the human mind has an innate ability to be aware of certain determinate sorts – *indeed that we are aware of them simply by virtue of having sensations and images*” (Sellars, 1956, p. 62 emphasis in original). For Sellars, this account of concept learning goes awry because the ability to pick out particulars of a certain type is only possible if one already has the concept in question. Since abstractionist accounts seem to

presuppose the very abilities they are trying to explain, Sellars (1956) argues for a position he calls psychological nominalism which claims that:

...*all* awareness of *sorts, resemblances, facts*, etc., in short, all awareness of abstract entities – indeed, all awareness even of particulars – is a linguistic affair. According to it, not even the awareness of such sorts, resemblances, and facts as pertain to so-called immediate experience is presupposed by the process of acquiring the use of language (p. 63, emphasis in original).

If Sellars is right, then not only are comparative psychologists wrong about how to explain concept acquisition, but they are also wrong to attribute conceptual capabilities to nonlinguistic animals (including human children).

Sellars thinks that linguistic conceptual capabilities can avoid any appeal to the Given. The Given is something in experience or in one's impressions that is both epistemically independent and epistemically efficacious (Sellars, 1956, pp. 68–69).⁹ It has to be epistemically independent because in order for it to explain concept acquisition it cannot rely on other beliefs and/or knowledge. Such states or abilities are conceptually structured, meaning that such states or abilities are only possible if one has already acquired concepts or conceptual capabilities. It has to be epistemically efficacious because one has to be able to do something epistemic with it; in this case, learn a concept.

Sellars argues that the Given is a myth because he thinks that nothing can be both epistemically independent and epistemically efficacious. In other words, if it is epistemically independent, it cannot be epistemically efficacious and if it is epistemically efficacious, it cannot be epistemically independent. One way to motivate Sellars' position is to consider the disjunction of propositional or nonpropositional content to see if either is capable of being both epistemically independent and epistemically efficacious. According to Sellars, in order for

⁹ My presentation of Sellars' argument against the Given is indebted to deVries and Triplett's (2000) interpretation.

content to be epistemically efficacious it has to be possible for it to function as a reason, and only content that can serve as a premise in an argument or inference can function as a reason. The only content that can serve as a premise in an argument or inference is propositional content. Therefore, nonpropositional content cannot be epistemically efficacious, meaning that it cannot be the Given (Sellars, 1956, pp. 15–20).

Perhaps then, the Given is propositionally structured content, such as the content of beliefs.¹⁰ Beliefs can be either inferential (beliefs that are the result of an inference) or noninferential (beliefs that are not the result of an inference, such as observational beliefs). Inferential beliefs cannot be epistemically independent because they are arrived at on the basis of other beliefs. However, Sellars thinks that noninferential beliefs are also not epistemically independent. For Sellars, in order to genuinely count as believing something, one must not only have a reliable differential response but one must also have some sense of what it takes to be justified in offering that response (Sellars, 1956, pp. 73–75). So, in order to have the noninferential belief that ‘this is red’, I must not only be able to reliably identify instances of red, but I must also have some knowledge about what sorts of conditions must obtain in order for my report of ‘this is red’ to be reliable.¹¹ Sellars’ reason for adding this additional internalist requirement is to avoid attributing beliefs and knowledge to thermometers or parrots (DeVries et al., 2000, p. 79).¹² This internalist requirement means that in order for content to genuinely count as a belief, it cannot be epistemically independent, even if it is noninferential. Having a belief requires knowledge; in particular, knowledge about whether one is responding to the world in

¹⁰ Sellars takes beliefs to be propositional attitudes.

¹¹ How stringently this claim should be interpreted will be discussed in the following chapter.

¹² Not attributing conceptual capabilities to nonlinguistic animals is then, not only, a consequence of the theory but part of what motivates its adoption in the first place.

reliable and/or appropriate ways. Therefore, neither inferential nor noninferential beliefs can serve as the Given.

If one finds Sellars' account of knowledge overly intellectualist, it is possible to support the same line of reasoning with slightly less stringent criteria. Brandom, for instance, uses conceptual holism (the claim that to grasp any one concept, one must grasp many concepts) to argue that noninferential beliefs cannot be epistemically independent (Sellars et al., 1997, p. 156). To believe 'it is red', one already needs to understand the ways in which RED is inferentially connected to other concepts. For example, one can infer 'it is coloured' or 'it is not green' from an application of the concept RED. Even if these inferences are not made in a given application of a concept, one has to *be able* to make them in order for the content to count as a belief (p. 159). Therefore, noninferential beliefs rely on background beliefs and knowledge and are not epistemically independent.

Either way, neither propositional nor nonpropositional content can be both epistemically independent and epistemically efficacious; therefore, the Given is a myth. Sellars and other normative conceptual holists attempt to avoid the Myth by banishing the idea of epistemic independence from their account of cognition (Maher, 2012, p. 18). Grasping a concept or obtaining knowledge is never independent; it is always a matter of orienting oneself in the space of reasons (Sellars et al., 1997, §36). In order for content to be epistemically efficacious it has to be possible for it to play the role of a premise in reasoning or argumentation; so, only propositional content can be epistemically efficacious. For Sellars (1956), propositional content can only be assigned to someone's experiences or thoughts if they are capable of making reliable discriminations and understanding what conditions must apply in order for those discriminations to be reliable which he takes to only be possible through language (pp. 76-77).

In a correspondence with Chisholm, Sellars (1958) claims that attributions of thought and other propositional attitudes to nonhuman animals, human infants, and humans who cannot hear and speak always come with qualifiers (pp. 527-528). He argues that ascriptions of propositional attitudes to these beings are merely useful heuristics, and that a bottom-up approach that begins with responsive dispositions, instead of a top-down approach that begins with mental states, will eventually be sufficient for explaining their behaviour (pp. 527-528). While McDowell's and Brandom's epistemologies are slightly less demanding, they end up with a similar set of conclusions. McDowell (1996, p. 12) and Brandom (2009a, p. 48) take propositional content to not be epistemically independent because of their conceptual holism. Grasping any one concept or knowing any one proposition is dependent upon grasping many concepts and knowing many propositions (Brandom, 1994, p. 89). These connections can only be known by beings that are situated in the space of reasons. Finding oneself in the space of reasons is only possible for individuals who can give and ask for reasons, and giving and asking for reasons is a linguistic affair (Brandom, 1994, p. xviii). Ascriptions of conceptual content to nonlinguistic animals, such as Clark's nutcrackers or human infants, then rely on a form of the Myth of the Given (whether it relies on abstractionism or not) by implying that the animal can grasp or get a hold of conceptual content independently of the space of reasons.

So, a critique of abstractionist accounts of concept acquisition and a priori considerations about what forms of content are possible motivate the claim that conceptual capabilities require linguistic capabilities. However, in the following section, I will argue that the claims that provide this motivation actually make it impossible to explain concept acquisition. More precisely, the critique of abstractionism and the argument against the Given are such wide-reaching arguments that they not only create problems for empiricism, but also for NCH itself.

2. Acquiring Conceptual Capabilities

While the problem of explaining concept acquisition for NCH has been pointed out before (e.g., Ayers, 2004; J. Fodor & Lepore, 2007; Ginsborg, 2006; Laurence & Margolis, 2012), I hope to emphasize its severity by presenting it in the form of a reductio. If one insists that conceptual capabilities are only accessible through the space of reasons and the space of reasons is only accessible through language, then no preconceptual child will be able to acquire conceptual capabilities. The argument against the possibility of concept acquisition is as follows:

1. One has conceptual capabilities if and only if one understands a natural language.
2. One has conceptual capabilities if and only if one grasps how concepts are situated in the space of reasons.
3. Acquiring conceptual capabilities requires epistemically efficacious content.
4. If content is epistemically efficacious, then one grasps how it is situated in the space of reasons.
5. Preconceptual human children do not understand a natural language.
6. Therefore, preconceptual human children cannot acquire conceptual capabilities.

Conceptual nativism – the view that one’s mind comes pre-stocked with an innate set of concepts – might immediately come to mind as a possible escape hatch. However, normative conceptual holists tend to either argue against nativism or simply assume that it is an inherently broken approach. For example, Sellars (1956) argues that approaches to language acquisition that rely on innate content take “the process of teaching a child to use a language” as “that of teaching it to discriminate elements within a logical space of particulars, universals, facts, etc., of which it is already indiscriminatingly aware, and to associate these discriminated elements with

verbal symbols” (p. 241). It is this sort of pre-aware awareness that Sellars calls the Myth of the Given.

Furthermore, Sellars is often interpreted as seeing more causally oriented approaches (where linguistic or conceptual knowledge is hardwired into the brain) as losing their grip on the normativity of linguistic competences, reducing linguistic understanding to mere causal conformity (O’Shea, 2007, p. 85). Interpreters of Sellars, such as O’Shea (2007), claim that nativist accounts cannot make sense of the distinction between merely conforming to a rule and acting because of a rule (as discussed further down, what Sellars will call ought-to-be rules vs. ought-to-do rules) (p. 83). O’Shea argues that Sellars would agree with Saul Kripke’s diagnosis of Chomskian nativism as failing to get a grip on the notion of conceptual competence because the very notion of competence presupposes the very sort of normativity that one is trying to explain with it (p. 204 fn. 11). Since, according to Sellars, conceptual capabilities are normative, an explanation of their acquisition must explain that normativity. Nativist accounts (or other purely casually oriented accounts, such as dispositionalist approaches) can explain why our behaviour comes to exhibit certain patterns, but not why we come to take certain patterns as telling us what we ought to do instead of merely what we do in fact do.

McDowell (1996) also argues against nativism by claiming that “it is not even clearly intelligible to suppose a creature might be born at home in the space of reasons. Human beings are not: they are born mere animals, and they are transformed into thinkers and intentional agents in the course of coming to maturity” (p. 125). Brandom (2009a), on the other hand, has shown little interest in explaining how one acquires linguistic or conceptual competence (p. 3). In *Making it Explicit*, he states that “no attempt will be made to show how the linguistic enterprise might have gotten off the ground in the first place” (1994, p. 155). Despite Brandom’s deferrals,

he also rules out nativism when he argues that prelinguistic children lack any capabilities that are worthy of the label ‘cognitive’ and he dismisses a view he calls ‘platonism’ which attempts to explain “the *use* of concepts in terms of a prior understanding of conceptual *content*” (2009a, p. 4, emphasis in original). So, given NCH’s anti-nativism, the conclusion cannot be accepted without absurdity.

2.1 Understanding

The first premise claims that one can have conceptual capabilities if and only if one understands a natural language. I take this premise to follow straightforwardly from the earlier discussion of Sellars’ argument against the Given and/or the strong link that other normative conceptual holists make between linguistic capabilities and conceptual capabilities. Note that the epistemic success term ‘understand’ is used here because Sellars thought that it was possible to obtain fairly advanced linguistic capabilities through the acquisition of reliable differential responses before one has acquired knowledge or conceptual capabilities (see Triplett & deVries, 2007a for an overview and discussion of this claim). So, the mere ability to use language is not sufficient for conceptual capabilities; one has to use it with understanding. This is partly what motivates Brandom’s oft-repeated claim that the reports of parrots, even when they involve language, do not demonstrate the use of concepts because he takes the parrots to lack the sorts of inferential understanding that are necessary for conceptual capabilities (e.g., 2009a, p. 48). This link between understanding and conceptual capabilities is what motivates the second premise that one can have conceptual capabilities if and only if one grasps how concepts are situated in the space of reasons. Grasping a concept or *understanding* a natural language in the way relevant to having conceptual capabilities is to have the ability to navigate the space of reasons.

2.2 Epistemically Efficacious Content

The third premise claims that acquiring conceptual capabilities requires epistemically efficacious content and the fourth premise claims that in order for content to be epistemically efficacious for a subject, they must be able to situate it in the space of reasons. Like the first two premises, they follow from Sellars' argument against the Given and his critique of empiricist accounts of concept acquisition. Denying the latter premise would be equivalent to denying the claim that the Given is a myth since one would have to argue that it is possible to have epistemically efficacious content that is epistemically independent. The lack of epistemic independence comes from being situated in the space of reasons, from being inferentially related to other epistemic states or content. So to claim that content can be epistemically efficacious outside of the space of reasons would just be to claim that epistemically efficacious content can be epistemically independent.

The third premise follows from critiques of abstractionism and nativism by normative conceptual holists. As discussed above, Sellars' complaint about abstractionism was that it helped itself to states/processes that involved epistemically efficacious content in contexts where said content would be epistemically independent. Since epistemically efficacious content cannot be epistemically independent, this amounted to mythmaking, and a similar line of reasoning was used to dismiss epistemically efficacious nativist content. The abstractionist and/or nativist cannot escape this problem because without epistemically efficacious content, they will be unable to get a grip on normativity. As David Forman puts it, a Sellarsian account cannot deny "that authentic language learning and concept acquisition differ qualitatively from mere behavioral conditioning" (p. 129). Even without these critiques, taken on its own, the premise is plausible. Concept acquisition seems like a process that will involve learning. Learning is

generally regarded as an epistemic process, and it is plausible to presume that any epistemic process will involve epistemically efficacious content.

2.3 Preconceptual Children

Given that premises one to five are extracted from NCH, it is not easy to see how normative conceptual holists can avoid the conclusion of the argument that preconceptual children cannot acquire conceptual capabilities, especially since nativism has already been ruled out as a possibility. That said, I expect that normative conceptual holists will accept premises one through five and yet try to deny the conclusion. So, it is worth going through some of the ways in which, despite the aforementioned premises, they claim that their framework can explain concept acquisition, or minimally, their framework allows for the possibility of concept acquisition.

Normative conceptual holists often take linguistic capabilities to be the key to explaining concept acquisition.¹³ McDowell (1996), for instance, thinks that learning a language can show that the human acquisition of ‘second nature’ (the capabilities that allow us to be part of the space of reasons) is not a mysterious process. He writes:

In being initiated into a language, a human being is introduced into something that already embodies putatively rational linkages between concepts, putatively constitutive of the layout of the space of reasons, before she comes on the scene. This is a picture of initiation into the space of reasons as an already going concern; there is no problem about how something describable in those terms could emancipate a human individual from a merely animal mode of living into being a full-fledged subject, open to the world. ...[T]he language into which a human being is first initiated stands over against her as a prior embodiment of mindedness, of the possibility of an orientation to the world. ...[A] natural language, the sort of language into which beings are first initiated, serves as a repository or tradition, a store of historically accumulated wisdom about what is a reason for what. ...[I]f an individual human being is to realize her potential of taking her place in that

¹³ The problem of concept acquisition is generally used to refer to the problem of explaining how humans are able to acquire concepts in the first place. So, in this dissertation, I will be using the term ‘concept acquisition’ to refer to this first sort of concept acquisition. There could be, of course, an additional problem of concept acquisition that has to do with explaining how individuals who are already have conceptual capabilities are able to acquire further concepts, but I will not be considering this problem in this dissertation.

succession, which is the same thing as acquiring a mind, the capacity to think and act intentionally, at all, the first thing that needs to happen is for her to be initiated into a tradition as it stands (pp. 125-126).

McDowell argues that tradition shows that an individual does not have to construct the space of reasons on their own. Once they are capable of understanding a language, they have access to a logical space that has already been set up.

However, this is not sufficient to avoid the conclusion. It is still entirely mysterious how one can get access to the epistemically efficacious content that premise three claims is necessary for acquiring conceptual capabilities, even if acquiring a language immerses one in a linguistic tradition that functions as a store of historically accumulated wisdom. The problem is that without conceptual capabilities, it is unclear how a preconceptual child can grasp any part of the space of reasons, whether they build it for themselves or have it supplied to them by the previous efforts of others. Sellars' claim that preconceptual children can acquire sophisticated linguistic capabilities before they understand the language they are using is of no help here because the linguistic dispositions, responses, and reports that are part of such a preconceptual ability are just more non-epistemically efficacious content for the preconceptual child.

In his attack on abstractionism, Sellars (1956) states that even the ability to be aware of something as a particular is a conceptual capability (p. 65). DeVries and Triplett (2000) read Sellars as claiming that:

...a baby cannot notice its red toy, for noticing requires concepts, which the infant lacks. Such a claim will strike many as implausible. But Sellars would hasten to make a distinction that will explain what goes on in the infant that is generally taken to be a noticing. Certainly, Sellars would say, an infant can have its attention attracted to a colored object or loud noise. But it does not follow that the infant's state of attracted attention is such that the infant can abstract from it the concepts *red* or *toy*. Sellars would deny that such attention-attraction as is exhibited by an infant is a *noticing*. Of more importance, Sellars would deny that the attention-attraction of the very young neonate is an intrinsically epistemic state (p. 121).

Forman (2006) has argued that ‘noticing’ is a technical term for Sellars that already implies observational knowledge that a particular token falls under a type (pp. 120-121). Even so, if a preconceptual child is not capable of grouping particulars under some type, then it is unclear what linguistic sounds or marks are supposed to do for her. The meaning of the linguistic sounds or marks is not accessible to her in any way.

It is worth remembering that the complaint about abstractionism was that it presupposes the ability to notice that something is a repeatable or particular that can then be associated with a word. But this problem comes home when trying to explain how it is possible to learn how to understand a language at all, since recognizing that a sound or mark is a word that can have or has a meaning is (at least in part) the process of picking out individual sounds as repeatables. They are merely reliably produced sounds or marks produced in response to other sounds, objects, or impressions; none of which can count as epistemically efficacious content for the preconceptual child. So, once one tries to rely on language to wave away the mysteriousness of concept acquisition, the mysteriousness actually reveals itself to run even deeper since an additional puzzle emerges about how one can come to understand a language without having already acquired conceptual capabilities. If one cannot *understand* linguistic sounds or marks, then it is not clear how they are supposed to be involved in the epistemic process of learning how to understand a language.

McDowell (1994) has attempted to avoid these puzzles by claiming that the space of reasons gradually emerges from an immersive interaction with linguistic tradition. He writes:

...much of the knowledge that we have by virtue of language was surely not acquired...by understanding a linguistic production. Part of the point here is that we were not yet capable of understanding the components of what we know through language when we started to acquire them. The body of sentences that we accepted from our elders needs to have become quite comprehensive before any of them were comprehended. ‘Light dawns gradually over the whole’. But the image of dawning light does not apply only to coming

to understand the members of a stock of sentences accepted from one's elders. ...much of the knowledge that enters into our possession of the world, though we have it through language, is not something we have been told. It need never have been enunciated in our hearing; rather, we find it implicit in the cognitive-practical ways of proceeding into which we were initiated when we learned our language (p. 195).

However, the gradualness of the process does not help explain how children come to understand linguistic sounds or marks as meaningful. If the abstractionist responded to a normative conceptual holist's objections by saying that the process happened gradually, this would not rule out the abstractionist's reliance on the Given. The claim that being initiated into a language requires implicit learning is also of little help. If the content learned implicitly is conceptual, then the story relies on the content being Given to the subject. If the content learned implicitly is nonconceptual, then it is not epistemically efficacious and is not capable of initiating the subject into an epistemic tradition.

An anonymous reviewer (personal communication) argued that my reading of the above passage is a misinterpretation of McDowell that begs the question against his account of concept acquisition in *Mind and World*. The account in question claims that conceptual capacities are already operative in the very experiences through which we acquire them. The idea is to reject the assumption that conceptual capacities must be independent of or antecedent to the sorts of states through which they are acquired. It is true that McDowell seems to hint at such a reading of his own views. For instance, in a reply to Richard Schantz, he writes that conceptual capabilities can be "initiated in and by the very experiences in which they are actualized" (McDowell, 2001, p. 182). Such a claim sounds enticing, but it is far from clear that McDowell can make it while motivating his own project in *Mind and World* with a critique of abstractionism. If the claim makes sense, then it would seem like the abstractionist could similarly claim that conceptual capabilities are initiated in and by the abstractive processes

through which they are actualized. If the difference here is that McDowell's story involves language and tradition whereas the abstractionist's only involves raw sense impressions, then McDowell would need some story about how experiences of linguistic sounds or marks differ from other sorts of experiences in ways that allow the abilities to be initiated in and by them. It is far from clear how to do this without simply taking linguistic marks and sounds as Given.¹⁴

Brandom (2010a) has responded to objections about acquisition by arguing that discursive intentionality emerges out of practical intentionality. Practical intentionality is "a way of being directed towards objects" through "Test-Operate-Test-Exit feedback control loops, in which external objects figure both as responded to and operated on in a goal-seeking fashion" which can be found in simple robots, nonlinguistic animals, and prelinguistic humans (p. 305). This initially may seem like a promising way out of the puzzle, but does it appeal to the Myth of Given? If the ability to be "directed towards objects" is to be epistemically efficacious, then it would not seem all that different from the ability to recognize or notice the particulars or repeatables that abstractionists presupposed. Brandom avoids this possibility by denying all cognitive and mental capabilities, including thought, to nonlinguistic and prelinguistic beings.

So, what is practical intentionality if one cannot subsume it under the category of cognition? Brandom argues that practical intentionality is a form of intentionality that is derivative of the discursive forms of intentionality exhibited by linguistic creatures. While it may be heuristically useful to attribute intentional content, like beliefs and desires, to nonlinguistic beings, like animals and robots, "nothing" they can do can justify a literal attribution of those

¹⁴ To my knowledge, the theorist most responsible for the claim that conceptual capabilities can be acquired through the very experiences in which they are actualized is not McDowell, but Hannah Ginsborg (2006). However, Ginsborg's approach does not line up with the sort of NCH position I have laid out here because she does not take conceptual capabilities to depend upon understanding a language (p. 359). Furthermore, she relies on, what she calls, 'primitive intentionality' to get her account off the ground, which I suspect Sellars, Brandom, and McDowell would regard as a problematic form of nativism.

contents to them (Brandom, 2010a, p. 306). So, the beliefs and desires of nonlinguistic and prelinguistic beings are not epistemically efficacious because, in an ontological sense, the beings do not really have them. When discussing the abilities of nonlinguistic and prelinguistic beings in other places, Brandom thinks that their abilities can be entirely explained through the same sorts of responsive dispositions that one can ascribe to a piece of iron that rusts when it is wet (e.g. 1994, pp. 88–89). Here is the problem: by making practical intentionality a non-literal attribution that is derivative of our attempts to make sense of the world, Brandom has avoided the Myth of the Given, but he is now not able to deny the conclusion of my argument against the possibility of acquisition. The responsive dispositions of iron, nonlinguistic animals, and prelinguistic human children mean nothing to them. There is nothing there, whether linguistic or not, that can be used to start the epistemic process of entering the space of reasons.

In a response to Jerry Fodor and Ernest Lepore, Brandom (2010b) argues that children acquire conceptual capabilities when adults take children's reliable responses to linguistic stimuli as making commitments (pp. 334-335). Once again, this sort of story sounds plausible, but it is not clear why Brandom can help himself to it. Even if the epistemic aboutness comes from the outside – as in, children gain discursive intentionality instead of mere practical intentionality by having their responses recognized as epistemic by others – this still does not explain acquisition. The child still needs to recognize that others are taking them as committed. For content to be epistemically efficacious, it needs to be epistemically efficacious *for* the subject that is using it. However, in the mentally impoverished states of a preconceptual child that one derivatively and non-literally attributes intentional states to, it is not clear how any content could be something *to* them, whether it is epistemically efficacious or not. Others treating one as making a commitment

is, after all, just one more impression that the child cannot even ‘notice’ as a particular or repeatable.

Sellars seems more aware of the problem than either McDowell or Brandom. In his paper “Some Reflections on Language Games” he considers a paradox similar to the one argued for in this chapter. Roughly speaking, the problem is that learning a language seems to be a matter of learning the rules of a language, but if those rules are also linguistic, then it is unclear how this process can ever get started (Sellars, 1954, p. 204). Sellars’ solution to this problem is to distinguish between two ways in which rules can influence the behaviour of an individual.

The first are ought-to-be rules or rules of criticism. For Sellars these rules are a part of what he calls pattern-governed behaviour where the behaviour “exhibits a pattern, not because it is brought about by the intention that it exhibit this pattern, but because the propensity to emit behaviour of the pattern has been selectively reinforced, and the propensity to emit behaviour which does not conform to this pattern selectively extinguished” (1974, p. 423). So, while nonlinguistic animals and prelinguistic humans can have their behaviour conform to ought-to-be rules through the selective reinforcement of training or natural selection, there is no sense in which they are aware of the rule despite the fact that they are behaving in such a way *because* of the rule.

The rules that one is aware of and follows because of that awareness, Sellars calls ought-to-do rules or rules of action. As deVries states, ought-to-do rules “assume that we have the cognitive or conative structures to recognize the circumstances and the rule and then apply the rule” (2005, p. 43). The existence of ought-to-be rules is dependent on the existence of ought-to-do rules because without the trainer’s awareness and use of the rule, there would be no way in which the unaware animal could be said to be acting because of a rule. This is meant to dissolve

the paradox because Sellars is then able to tell a story where prelinguistic children's behaviour is brought in line with the norms of the linguistic community through interactions with their parents, teachers, etc. who guide their ought-to-be's by having ought-to-do's. DeVries writes that "training youngsters to exhibit correct linguistic patterns...requires agents acting on rules of action, agents who are aware of the rules as such" (pp. 44-45). One only understands a language when one "not only *conforms* to linguistic ought-to-be's (and may-be's) by exhibiting the required uniformities but grasps these ought-to-be's and may-be's themselves (i.e., knows the rules of the language)" (Sellars, 1969, p. 513).

Interpreters of Sellars have noted that this creates a problem for explaining how language originated in the first place. For example, O'Shea (2007) recognizes that Sellars' account will have difficulty explaining the "evolutionary origins of language and of rationality in the species as a whole" but ultimately concludes that this is "a problem that hangs Sellars only if it hangs us all" (p. 85). DeVries (2005) sketches out a story in which an evolving communication system develops sufficient complexity to "permit reflexive metarepresentations" about the communication system itself. Once a group is able to have "language about language" the value of the system leads people to "care about it and cultivate it" allowing the communication system to "transform from being *normal* (present because naturally selected) to *normative* (present because selected by the linguistic community in virtue of 'the way things are done')" (p. 45). DeVries is hesitant to firmly endorse this story but thinks that it at least gives Sellars a way to say that such a development is possible. I think that O'Shea and DeVries are right to recognize that Sellars' account will have a problem here. Even the sketchy solution offered by DeVries likely presupposes the very abilities it is supposed to explain by taking caring about something as complicated as language and cultivating it because of that caring to be preconceptually possible.

However, I think the problem is actually worse for Sellars than just the inability to explain the evolution of language, since his distinction between the two types of rules does not escape the paradox at all.

If the question is – how does one come to understand rules in such a way that they govern our behaviour – and such governance is a prerequisite for understanding a language, then it is unclear how ought-to-be rules are any help at all. It is true that ought-to-be rules show us that quite sophisticated forms of behaviour, including linguistic behaviour, can arise without one having any awareness or understanding of the rules that are guiding one's behaviour, but it does not tell us how one can shift from mere blind rule following to being normatively governed by those rules. Such a shift requires epistemically efficacious content and epistemically efficacious content requires knowing how to get around in the space of reasons – but knowing how to get around in the space of reasons is just the sort of normatively governed behaviour that the account is supposed to be explaining. Sellars has not provided a solution to the problem inasmuch as he has merely restated the problem with a new set of terms. The question now is how one can transition from mere ought-to-be's to ought-to-do's, but it is still entirely a mystery how such a transition is possible. Noting that individuals can be trained to do things because of rules before they are even aware of those rules does not explain how such an awareness arises in the first place.

I suspect that normative conceptual holists have failed to notice this profound difficulty for their framework because they take language (or tradition) to be Given. Language is supposed to explain concept acquisition because encounters with language are different from encounters with other types of stimuli. This may be true once one is in the epistemic position to understand a natural language; however, it is an appeal to the Given if it is meant to explain how one comes to

inhabit that epistemic position in the first place. To take linguistic impressions as independently meaningful and epistemically efficacious in a way that other impressions are not is to take them as Given.

I do not think that normative conceptual holists can brush this result away as merely falling outside of their semantically oriented theories. While an account of conceptual capabilities does not necessarily need an account of acquisition, it needs to avoid making such an account impossible, especially if one insists that conceptual capabilities are not innate. Furthermore, it is possible to derive the further conclusion from this argument that no one has or will have conceptual capabilities with an additional premise that recognizes that every neurotypical human is or has been a preconceptual child. The possibility of this move has consequences beyond the problem of acquisition because it is now absurd to attribute concepts to anyone at all. Ignoring the problem to focus on semantics leaves open the possibility that the objects of one's theory do not even exist.

3. A Transcendental Argument for Nonconceptual Content

An important feature either explicit or implicit in all of the surveyed attempts from NCH to explain concept acquisition is the role of emergence. As I will discuss below, Sellars' account of concept acquisition is explicitly emergentist, and Brandom's and McDowell's accounts are also (at least) implicitly. The problem that each attempt runs into is that premise three (acquiring conceptual capabilities requires epistemically efficacious content) seems to imply that it is only possible for conceptual capabilities to emerge if epistemically efficacious content is already available. However, presumably part of the appeal of an emergentist account is that it creates the possibility of explaining how content can become epistemically efficacious for a subject in the first place. So, one way to avoid the absurd conclusion would be to deny premise three.

However, as pointed out earlier, premise three both is motivated by Sellars' critique of abstractionism and has inherent plausibility on its own. The problem with denying premise three is that one is forced to take the initially acquired concepts either as Given or as non-normative. In this section, I am going to argue that a way to avoid this fork can be found in Sellars' work, especially in Forman's transcendental interpretation of Sellars' approach to a related paradox. While Sellars' solution makes it possible to explain concept acquisition in NCH, it comes at a cost. Specifically, I will argue that Sellars' solution as interpreted by Forman makes emergence possible by denying premise three and making epistemically efficacious content part of what emerges. This means that at least the initial acquisition of conceptual capabilities is not an epistemic process, but an entirely (nonnormative) causal one. What Forman's interpretation of Sellars shows is that premise three can be denied without falling into the Myth of Given nor by giving in to a non-normative account of conceptual capabilities. I will argue that this result removes much of the motivation for arguing that linguistic capabilities are necessary for acquiring conceptual capabilities.

In *Empiricism and the Philosophy of Mind*, Sellars points out that his account of knowledge seems to lead to a regress. He (1956) states that:

...it might be thought that there is something obviously absurd in the idea that before a token uttered by, say, Jones, could be the expression of observational knowledge, Jones would have to know that overt verbal episodes of this kind are reliable indicators of the existence, suitably related to the speaker, of green objects (p. 75).

Since Sellars claims that knowledge of particulars relies on other states of general knowledge, it becomes a mystery how one could ever come to have knowledge of a particular (since general knowledge would presumably be built out of or formed on the basis of knowledge of particulars). Sellars attempts to resolve the regress by claiming that when one enters the space of reasons,

they can use their memories of past encounters with particulars, even if those past responses did not count as knowledge at the time.¹⁵ He writes:

...Jones could *now* cite prior particular facts as evidence for the idea that these utterances *are* reliable indicators, it requires only that it is correct to say that Jones *now* knows, thus remembers, that these particular facts *did* obtain. It does not require that it be correct to say that at the time these facts did obtain he *then knew* them to obtain (p. 77).

One can think of it this way: once an individual's dispositional abilities have become sufficiently complex, an interaction between those capabilities and the social practices that one is a part of leads to the emergence of conceptual capabilities.

Let's imagine that this happens for a particular child when they do not just respond in reliable ways to the mention of green things, but also understand that a statement about a particular object being 'green' means that it is green. That grasp or understanding of the concept GREEN requires that the child can make inferences about green things, such as that green things are also coloured things or that things that appear to be green are only actually green under

¹⁵ If one views memory as a propositional attitude, then the idea that one can have accurate memories that are not knowledge will seem incoherent. This view will seem even more incoherent if one thinks that remembering or memories are always epistemic. While there are epistemic theories of memory, they face significant problems because it is not clear how memories can always meet conditions of truth, justification, and belief (for an overview, see Michaelian & Sutton, 2017). While to argue against these theories in detail would take me too far afield, we can see how both of these views will run into trouble with an example from André Sant'Anna (2018). Jordi Fernández (2006) has argued that taking memories as propositional attitudes has the benefit of explaining how memories have truth conditions. So, if Fernández is right, then this would help vindicate one aspect of the epistemic theory of memory by claiming that memories are propositional in nature. However, as Sant'Anna (2018) points out, memories often involve inaccuracies. Even if some aspects of the memory are accurate, empirical research on memory reveals that there will almost always be elements that fail to be accurate. The problem for a propositional attitude approach is that it only takes one false component in order for the whole proposition to be false (unless one thinks that memories are composed of disjunctions and conditionals, but this seems like an odd way to capture the relation of the parts of, at least, most memories). A consequence of a propositional attitude theory of memory would then seem to be that almost all or most memories are false. At the very least, this would fail to vindicate an epistemic approach to memory because one usually wants knowledge claims to be true, and if a propositional attitude theory of memory fails to provide the very advantages that motivated its adoption in the first place, then there seems to be little reason to pursue such a theory. While I am not aiming to argue that an epistemic theorist or a propositional attitude theorist will not be able to provide future defenses of their theories, this does show that Sellars is not falling into incoherency by considering memory as something that can operate outside the domain of propositions and knowledge. In fact, recognition of the problems with epistemic theories of memory are widespread enough that Kourken Michaelian and John Sutton state that the alternative causal accounts of memory have "taken on the status of philosophical common sense" (2017).

certain circumstances. Such inferences only seem possible if the child is able to recall past interactions with green and/or coloured things. The child's use of these memories is epistemically efficacious and is not epistemically independent because the child is now able to apply their newly acquired conceptual capabilities to these memories, and the application of those conceptual capabilities brings them into a conceptual network of epistemically interconnected knowledge. Like in McDowell's argument, the move denies the idea that antecedent epistemic states are needed to explain the acquisition of conceptual capabilities (which would just be the sort of question-begging story that Sellars objects to). Epistemic independence is avoided not by looking backwards at antecedent epistemic states but by looking forward at subsequent conceptual (and therefore epistemic) states that are causally the result of antecedent nonconceptual states. The initial acquisition lacks epistemic independence because of what one can do with their initial epistemic states: make conceptually laden inferences to additional epistemic states.

One might worry that this theory falls into the scheme-content dichotomy that Donald Davidson (2009) powerfully argued is a third dogma of empiricism that needs to be jettisoned. This would be the case if one is understanding conceptual capabilities (as a scheme) to be overlaid on the nonconceptual content (as the content) in way that interprets, organizes, accounts for, etc. said content (pp. 191-193). However, capabilities are not a scheme, they are abilities to do things that one could not without them. In this case, emergent conceptual capabilities allow one to do normative things with already existing content that one could not do prior, such as justify a belief or make an inference (over a mere mental transition).¹⁶ So to say

¹⁶ This distinction is discussed in Chapter 5.

that conceptual content differs from nonconceptual content or states can be a bit misleading.

What has changed is not the content itself, but the sorts of things one can do with that content.

Sellars (1981) argues that nonlinguistic animals without conceptual capabilities can form cognitive maps of their environment through a process that he calls picturing (§56). However, beings with linguistic capabilities and conceptual capabilities do not stop picturing, instead Sellars takes all empirically adequate languages to also picture (deVries, 2005, p. 53). So the addition of conceptual capabilities does not change the type of content that a creature is using, instead it allows them to do additional things with said content because they can now operate on a second-order level of representation. In the following chapter, I will discuss more thoroughly this distinction between nonconceptual content and conceptual content and the things they can and cannot be used to do. Davidson (1997) also stresses that his argument shows that we run into trouble if we take experience to be an epistemic intermediary between the world and beliefs (p. 22), but the nonconceptual content proposed by Sellars and Forman is not epistemic at all. It plays a causal role in the causal story of how one comes to acquire conceptual capabilities.

Forman argues that this story “*logically* presupposes the existence of [nonconceptual] sense impressions” because the knower can only escape the regress if they have preconceptual content that they can then recall once they have passed the epistemic threshold (2006, p. 134).¹⁷

In other words, Sellars’ response to the paradox can be read as a transcendental argument for the

¹⁷ One might worry that the idea of recalling nonconceptual states is incoherent. It would be incoherent if like Brandom we take all cognitive capabilities to rest on conceptual capabilities, including memory. However, this seems like a difficult position to maintain for someone like Brandom considering that he denies that nonlinguistic animals lack conceptual capabilities. Whatever one thinks of the cognitive capabilities of nonlinguistic animals, it seems pretty difficult to deny that they can form memories and/or complete tasks that require the formation of memories (e.g., Martin-Ordas et al. 2013). In the terminology introduced in the following chapter, recalling a nonconceptual memory would be referring back to previously constructed pictures of one’s environment. Once again, the content of those memories does not change after the emergence of conceptual capabilities, instead what changes is what one can do with said content. So, after the emergence of conceptual capabilities, the memory is still a picture of previously represented objects or events, but one can now do additional things with it, such as use it in normative/epistemic tasks/behaviour.

existence of nonconceptual content. The acquisition of linguistic or conceptual capabilities is only possible if one already has nonconceptual content to draw on. Forman argues that the nonconceptual content has to be in the form of sense impressions because “the recollecting of a past fact must, in some sense, be responsive to the subjective state of the perceiver at the time the fact obtained” (p. 135). Neurophysiological states alone cannot fill this role because neurophysiological states are not available to us in the way that sense impressions are. I am not convinced that we need to take this step. Forman’s interpretation establishes that concept acquisition requires nonconceptual content that is available to the subject. If that is one’s definition of sensory impressions or nonconceptual conscious states, I have no argument against it; however, the many arguments about what is logically possible with or without consciousness (e.g., philosophical zombies (Kirk, 2023)) mean that I would like to remain agnostic on whether such nonconceptual content is necessarily conscious.¹⁸

I suspect the main worry about this argument will be that by presupposing nonconceptual content, Sellars’ account, like the accounts he critiques, is guilty of appealing to the Given. Forman (2006) argues that Sellars’ solution to the regress does not rely on the Given because the nonconceptual states do not “stand in a justificatory relation to conceptual states” (p. 139). He writes that “through their role in the process of learning a language, impressions provide a merely *causal* mediation between mind and world...” (p. 141). So, while nonconceptual content

¹⁸ In fact, I am not even totally convinced that nonconceptual content is needed for this argument to work. It seems at least possible that dispositions or causally developed capabilities could fill in the role Forman claims nonconceptual content can only play. For example, it seems at least coherent to think that procedural memories do not involve content at all. Could those sorts of memories fulfill the same sorts of functions as Forman takes nonconceptual sensory memories to be fulfilling? In the following chapter, I will adopt Sellars’ account of nonconceptual content; however, my adoption is not motivated by Forman’s argument but by the sorts of explanations it makes possible. What I take to be crucial in Forman’s interpretation for avoiding the *reductio* is the idea that one can have content that is epistemically efficacious but is not epistemically independent by looking forward to subsequent inferences and mental states, instead of looking backwards. This is what allows for epistemically efficacious content to emerge without said content being Given.

makes knowledge possible, it makes it possible through causal, non-epistemic means. Forman suggests that McDowell and Brandom's arguments that Sellars' nonconceptual sense impressions are mere 'idle wheels' misunderstand the role that they are playing in Sellars' account. Nonconceptual sense impressions are certainly idle wheels when it comes to justifying knowledge claims, but Forman argues that they are crucial to explaining the acquisition of an epistemological outlook in the first place (p. 134).

While Forman's transcendental interpretation provides Sellars a way to explain the acquisition of conceptual capabilities that does not fall into the Myth of the Given, it is not clear that Forman or Sellars notice its theoretical cost. In particular, premise three's claim that acquiring conceptual capabilities requires epistemically efficacious content now looks false. One's initial emergence into the space of reasons relies solely on (nonnormative) causal relations. Emergence happens when one type of thing or structure leads to a different type of thing or structure. In this case, normative capabilities emerge from merely causal ones.¹⁹ So the result may be epistemic, but the means that lead there cannot be since Sellars would then be susceptible to his own critique. While the loss of premise three means that the conclusion no longer follows, it also severely curtails the limitations that NCH can put on theories of concept acquisition. The process that leads to the initial acquisition of conceptual capabilities is nonepistemic, so the argument against the Given, which is about what kinds of epistemic content are possible, will have nothing to say about theories of concept acquisition that remain solely in

¹⁹ Andrew Fenton (personal communication) worries that this looks like a magical form of thinking where what emerges is 'as if by magic.' It is important to note that the Sellarsian project takes what emerges to still be causally reducible to what came before it, but logically irreducible, meaning that the epistemic properties of conceptual capabilities cannot be reduced to those causal properties without loss (O'Shea, 2009). Furthermore, what is important about Sellars' approach is not that he provides a plausible story about how emergence actually happens, but instead the fact that he is able to tell a story about emergence at all, without contradiction. As I detail immediately below, being able to take even this small step comes with a theoretical cost and undermines NCH's ability to critique other approaches to concept acquisition, including nonlinguistic ones.

the (nonnormative) causal realm. As long as a theory does not call a set of abilities conceptual until they have emerged as both normative and holistic, then the Myth of the Given has little to say about them. So, it is unclear that the critique of abstractionism and nativism can be maintained if these are interpreted as causal processes or states that lead to the emergence of normative conceptual capabilities. Sellars' explanation after all is little more than a shell that signals that an emergentist account is possible. Given the right interpretation, an abstractionist or nativist account could fill in this shell by giving an actual account of concept acquisition.

Furthermore, the denial of premise three undercuts much of the motivation for claiming that conceptual capabilities can only be required through linguistic capabilities. I suspect that much of the appeal of using language to explain concept acquisition came from taking encounters with language as different from encounters with other types of stimuli. Something about linguistic capabilities allowed for epistemically efficacious content. However, the denial of premise three means that epistemically efficacious content is not necessary for acquiring conceptual capabilities, so if normative conceptual holists are still going to argue for the necessity of language, they will need a causal argument for that claim. One could potentially make this argument by claiming that the development of the sorts of sophisticated causal capabilities that lead to the emergence of conceptual capabilities is only possible through language. To evaluate this potential argument, we first need to ask: what sorts of sophisticated causal (nonnormative) capabilities are necessary for the emergence of conceptual capabilities? To answer this question, I turn to NCH's conditions for grasping a concept.

4. Grasping Concepts and Nonlinguistic Abilities

Normative conceptual holists often use nonhuman animal responses as evidence that concepts require linguistic capabilities. For example, in a letter to Chisholm, Sellars motivates

his conditions for having thought by considering what a nonlinguistic animal or prelinguistic human lacks. He writes:

...the ability to have thoughts entails the ability to do *some* classifying, see *some* implications, draw *some* inferences...it is a bit strong to conclude that a white rat must be *classifying* objects because it reacts in similar ways to objects which are similar in certain respects, and in dissimilar ways to objects which are dissimilar in certain respects; or that an infant must be *inferring* that his dinner is coming because he waves his spoon when his mother puts on his bib (Sellars & Chisholm, 1958, p. 528).

So the ability to have thoughts requires both the ability to make classifications and the ability to make and use inferences based on those classifications. Brandom makes a similar point with a greater focus on conceptual capabilities. After recognizing that conceptual capabilities involve the ability to make classifications, he adds an additional criterion by writing:

To grasp or understand...a concept is to have practical mastery over the inferences it is involved in – to know, in the practical sense of being able to distinguish (a kind of *know-how*), what follows from the applicability of a concept, and what it follows from. The parrot does not treat “That’s red” as incompatible with “That’s green,” nor as following from “That’s scarlet” and entailing “That’s colored.” Insofar as the repeatable response is not, for the parrot, caught up in practical proprieties of inference and justification, and so of the making of further judgments, it is not a *conceptual* or a *cognitive* matter at all (Brandom, 2009a, p. 48).

The two basic conditions for grasping a concept that can be extracted from these accounts are the ability to reliably make classifications and the ability to make inferences from and to those classifications.

It is easy to see how language would be useful for the development of these capabilities. Language provides labels that one can apply to the objects, states, or events that one is classifying, and language can represent or construct the sorts of links between the classification of those objects, states, or events that can allow for inferences from and to those classifications once conceptual capabilities emerge. In Chapter 5 and 6 I will argue that an inference is a transition between commitments that one can be socially held responsible for. A mental

transition that one could be socially reprimanded for making or not making would then count as an inference. So the recipe that follows from these conditions would be something like: the development of causal linguistic capabilities, such as linguistic dispositions, is what allows for the development of the ability to classify objects, states, or events, and the ability to make transitions between content, potentially including mental transitions. Conceptual capabilities emerge when these abilities become sufficiently sophisticated in combination with their use and recognition of their use by other members of one's social community. For Brandom, this will happen when one starts being held responsible for the commitments that one makes, and one starts holding others responsible for the commitments that they make.²⁰

Now, this story is admittedly sketchy, but what it does do is provide enough information to evaluate whether linguistic capabilities are actually a necessary component of the story. In other words, is the development of linguistic capabilities actually necessary for the development of the abilities to reliably make classifications, and the ability to make transitions from and to those classifications? Additionally, is language necessary for the sort of social structures that allow for normative capabilities, like conceptual capabilities, to emerge once those preconceptual capabilities are sufficiently sophisticated. The evidence presented over the rest of this dissertation firmly denies these claims. In Chapter 3, I consider empirical evidence that nonlinguistic animals are able to reliably make quite sophisticated classifications, including classifications that require a grasp on abstract relations. In Chapters 5 and 6, I argue that nonlinguistic animals are able to make mental transitions from and to the classifications they make. If the evidence I will present in those chapters holds up, then language is not necessary for the development of the sorts of preconceptual abilities that lead to the emergence of conceptual

²⁰ For details on the social aspects of this account, see Chapters 5 and 6.

capabilities. Furthermore, over the course of Chapters 4, 5, and 6, I argue that the social structures of at least some nonlinguistic animal communities allow for the emergence of normative practices when combined with the relevant preconceptual capabilities. Given that much of the motivation for adopting premise one, that conceptual capabilities require linguistic capabilities, was the claim that language could explain concept acquisition while avoiding the myth of the Given, the through-line for the rest of the dissertation not only denies that acquiring conceptual capabilities requires linguistic capabilities, but also more explicitly denies that linguistic capabilities are necessary for having conceptual capabilities.

6. Conclusion

NCH argues that conceptual capabilities are holistic and normative and takes it to follow from this claim that linguistic capabilities are necessary for conceptual capabilities. I have argued that the arguments that lead to this inference also make it impossible for NCH to explain concept acquisition. This leads to the absurd conclusion that no one has or will have conceptual capabilities. In order to find a way out of this unpalatable result, I turned to Forman's transcendental interpretation of Sellars that takes nonconceptual content to be causally necessary for entering the space of reasons. I argued that this interpretation has the consequence that concept acquisition, or at least the initial acquisition of concepts, is a non-epistemic process. Instead, conceptual capabilities emerge from causally acquired nonconceptual content and abilities. This saves NCH from the reductio, but it means that the Myth of the Given cannot be used to critique causal accounts of concept acquisition as long as the end result is normative and holistic conceptual capabilities. If this is the case, then the necessity of language can only be argued for on causal grounds.

While this chapter does not provide an argument for thinking that animal behavioural scientists are right to attribute conceptual capabilities to nonlinguistic animals, it does provide an argument against the claim that a set of a priori claims about the nature of concepts and reasoning show these attributions to be fundamentally misguided. This puts NCH in the far preferable position of potentially being able to fruitfully interact with some of the exciting claims coming out of this field instead of being forced to automatically dismiss them from the armchair. NCH has a wealth of sophisticated theoretical tools for thinking about the mind (as I will demonstrate in the following chapters), and my hope with this chapter has been to show that there are no a priori barriers to using those tools to engage with philosophical and scientific work on nonlinguistic minds. One could still end up arguing from an NCH perspective that only linguistic animals have conceptual capabilities, but such a result is far from predetermined, and one will actually have to engage with the research to do it.

Chapter 3 A Sellarsian Argument for Nonlinguistic Concepts

The arguments offered in the previous chapter against the necessity of language or linguistic capabilities for concept acquisition open the possibility of nonlinguistic conceptual capabilities. However, one could regard these arguments as a further step away from such a conclusion because they recognize the possibility of sophisticated forms of nonconceptual capabilities/content that could be used to explain away the types of performances and behaviours that have led scientists to attribute conceptual capabilities to nonlinguistic animals. In this chapter, I am going to accept that result, and indeed argue that some of the experimental results that have been used to justify the attribution of conceptual capabilities to nonlinguistic animals can be explained through nonconceptual processes. However, this argument will require a way of determining what types of behaviour can be explained through nonconceptual content alone and what types could justify the attribution of conceptual capabilities. To do this, I will turn to what many are likely to regard as an unlikely source: Sellars' psychological nominalism.

In *Empiricism and the Philosophy of Mind*, Sellars (1956) makes the radical claim that “all awareness of sorts, resemblances, facts, etc., in short, all awareness of abstract entities—indeed, all awareness even of particulars—is a linguistic affair” (§29). Later in his career, Sellars (1981) tempers this emphasis on language a bit so that a more accurate read might be ‘all awareness of abstract entities is a conceptual affair.’ From this perspective, it could still turn out that all conceptual affairs are linguistic affairs, but this later version provides enough of a gap to ask if such an identification is correct. If one can demonstrate awareness of abstract entities and if this later version of psychological nominalism is correct, then one has conceptual capabilities, language or not. This chapter argues that some nonlinguistic animals, specifically crows and

amazons, are able to pass this threshold by succeeding at tasks that require the subject to grasp SAME and DIFFERENT.

In order to argue for this claim, I will first present Sellars' nominalism and show how it provides a way to distinguish conceptual from nonconceptual content. Second, I will argue that Sellars' psychological nominalism must be tempered to be a thesis about conceptual frameworks instead of linguistic frameworks. Third, I will argue that given this tempered form of Sellars' psychological nominalism, the success of nonlinguistic animals at tasks that require a grasp of abstract relational concepts shows that some nonlinguistic animals have conceptual capabilities. I will show this by first conceding that some experimental results that seem to require a grasp of abstract relational concepts can be explained away using Sellars' nonconceptual account of animal representational systems. These systems build cognitive maps by picturing particulars in their environment. However, I will then show that this strategy cannot be used to explain success at relational matching-to-sample tasks, and I will argue that the success of nonlinguistic subjects at these tasks justifies the attribution of conceptual capabilities.

Finally, I will consider and respond to three objections to the central argument. First, Sellars takes concepts to be epistemic, so one can only attribute concepts to subjects if one can also attribute knowledge to them. Sellars' high bar for knowledge means that one can only have knowledge of particulars if one also has general knowledge about the reliability of one's own observation reports or perceptual beliefs. Some might find it absurd to think that nonlinguistic animals could ever meet this condition. Second, many theorists, especially conceptual holists, have objected to attributing conceptual content to nonlinguistic animals based on our inability to fix said content. The claim is that the semantic content of any particular concept is fixed by its relation to other concepts, so that if one is to attribute a given concept to someone, one must

attribute a whole host of related concepts. Holists tend to claim that the necessary web of concepts is only available to beings with linguistic capabilities. Therefore, they will consider it impossible to attribute specific conceptual content to nonlinguistic animals. Third, I will consider anti-representationalist concerns about Sellars' representationalist framework.

In response to the first objection, I will argue that Sellars' account of knowledge only requires that knowers have an implicit grasp of the is/looks distinction, and I will argue that experiments with chimpanzees suggest that at least some nonlinguistic animals can grasp this distinction. In response to the second objection, I will argue that the majority of the negative claims are overstated and empirically evaluable. In addition, I will argue that conceptual holists also face problems for fixing conceptual content for beings with linguistic capabilities. I will argue that the later Wittgenstein's notion of an internal relation provides a way to privilege some connections over others, allowing holists to limit the number of connections necessary for grasping a concept. While this avoids the problem for linguistic beings it also creates the possibility of fixing content for nonlinguistic beings, and I will argue that we can fix the content for the concepts of SAME and DIFFERENT ascribed to the crow and amazon subjects discussed earlier in the chapter. Finally, for the third objection, I will defend the use of representations in Sellars' account of cognition, though I will also point to potential non-representational interpretations of his claims that will not affect the central thesis of this chapter.

1. Nominalism and Meaning

Suppose we have three wooden triangles sitting on a table: an isosceles, an equilateral, and a right-angle triangle.²¹ While each of these triangles is a separate object, they all seem to share something: the property of being triangular or triangularity. What is known as the problem

²¹ This example is borrowed from O'Shea (2007, p. 63).

of the ‘one and the many’ or the problem of universals has to do with the metaphysical status of this type of shared property. What allows for it to be true that these three differently shaped and located items are nevertheless triangles? Is being triangular or triangularity an additional sort of thing in addition to the wooden objects? A very early answer to this problem comes from Plato’s dialogues, such as the *Phaedo* and the *Meno*, where it is claimed that there is an additional, mind-independent, reality beyond the immediately perceptible (the empirical reality of the three objects in front of us) where the form of triangularity exists (among other forms) (Kraut, 2022). One can say that it is true that all three objects are triangles because all three objects partake in the universal form of triangularity.

Sellars, as a committed naturalist, argues for a nominalist answer to the problem of universals. In its most general sense, nominalism is the view that the world consists solely of particulars (Rodriguez-Pereyra, 2019). Put most bluntly, the nominalist argues that universals or abstract entities do not exist. While this answer has the benefit of avoiding the introduction of entities into our ontology that are outside the reach of empirical investigation, it does not immediately provide an answer to the questions put forth in the previous paragraph. In other words, the nominalist still has to explain how it is true that the three distinct objects are triangles without reference to some further entity that the objects partake in. To understand Sellars’ unique form of nominalism, it is necessary to take a bit of a detour through his philosophy of language, in particular his account of meaning.

Many accounts of meaning take it to be a type of relation between the mind and the world (O’Shea, 2007, p. 49). For instance, it seems like a fair assumption to think that the meaning of a word has something to do with how it relates to objects in world. For example, the meaning of the word ‘dog’ seems, at least in part, to be determined by the fact that it refers to dogs.

Developing a theory of meaning then is often a matter of determining what type of relation meaning is or what additional elements need to be added when reference alone is not enough to fix the meaning of a term. This sort of strategy quickly runs into puzzles from a naturalistic perspective (deVries, 2005, p. 28). For example, what do fictional or imaginary terms refer to (e.g., ‘unicorns’), and to connect this back to nominalism, what do universal or abstract terms refer to?

Motivated by these types of naturalistic worries, Sellars argues for a non-relational account of meaning. Sellars’ account is probably easiest to understand when considering meaning statements like:

(1) ‘Et’ in French means *and*.

Different versions of this type of sentence may still tempt a relational analysis, such as:

(2) ‘rouge’ in French means *red*.

However, it is unclear how (1) could be interpreted as designating a mind-world relation, especially presupposing a naturalistic ontology. Sellars takes ‘means’ in (1) to designate a linguistic role; the sentence then claims that ‘et’ plays the same sort of functional role in French as ‘and’ does in English (O’Shea, 2007, p. 57). This strategy can be extended to sentences like (2), so that (2), like (1), signals that these two terms play a similar functional role in their respective languages. If this sort of analysis can be extended to all meaning claims, then Sellars argues that meaning should be understood as a metalinguistic term that is used to make claims about object level languages. In other words, meaning claims identify the functional roles of linguistic terms across languages (Sellars, 1989, p. 245).

An immediate worry might be that from this perspective, words lose their worldly relevance. Even if the meaning of a word is partly determined by its role within a language,

surely the meaning of a word has something to do with the way it connects up to things in the world. In response to this type of lift-off worry, it is important to emphasize that Sellars' understanding of this type of functional role is not limited to intra-linguistic moves (moves within the language itself). Instead, part of what defines a word's functional role are language entry moves and language exit moves, in addition to intra-linguistic moves (Sellars, 1979, p. 69). A language entry move is an encounter with a thing in the world that leads one to use a particular linguistic report or mark (e.g., proclaiming 'a dog!' when encountering a dog), whereas language exit moves are the things one does, after using or seeing/hearing a particular linguistic report or mark, that are not further linguistic reports or marks (e.g., petting a dog after being told that she is friendly). So, the functional role that defines the meaning of a particular word will be defined in part by interactions with the types of objects that we generally take the term to 'refer' to.²²

In order to signal when a term is being used to identify a functional role across languages, Sellars introduces the use of dot quotes. So, a proper analysis of (1) will yield:

(3) 'et's (in French) are •and•s.

Putting a term between dot quotes signals that the term is identifying a functional role across languages. O'Shea (2007) writes that "an '•and•' is thus a sortal term – a term applying to all things of a specific sort or kind – covering any item in any language which plays *that* role (or relevantly similar role)" (p. 59).²³

²² I have put 'refer' in scare quotes here because Sellars (1979) also argues that reference is a non-relational metalinguistic device (p. 82).

²³ Sellars (1979) takes the term in the subject position (e.g., 'et') to be a distributive singular term (a singular term that distributes across an entire class), so abstract entities are not sneaking in through the subject term either (p. 34). When it comes to the verb, Sellars (1974) regards 'means', once properly analyzed, to reveal itself as a specialized version of copula (hence, 'are'). Since he takes the copula to be non-relational, 'means' should not be regarded as signaling a relation (p. 431).

Using this type of logical tool, we can now return to the question of nominalism. Let's consider a sentence about one of the wooden triangles that involves a universal where 'a' stands for the isosceles triangle:

(4) *a* is triangular.

How should the meaning of the predicate '_____ is triangular' be interpreted? Like the previously analyzed sentences, 'triangular' can be featured in statements about meaning. For example:

(5) 'triangulaire' (in French) means *triangular*.

Which, like the previous sentences, can be analyzed as:

(6) 'triangulaire's (in French) are •triangular•s.

This seems to suggest that abstract entities or universals can be identified as linguistic functions, in the same way that meaning statements can be. In other words, the meaning of 'triangularity' can be identified with a functional role across linguistic frameworks (Sellars, 1963, pp. 627–628).

Sellars takes his analysis to have shown that abstract objects are actually metalinguistic devices that “serve to pick out linguistic types or roles that may be played by or ‘realized in’ many linguistic materials or ‘pieces’” (O’Shea, 2007, p. 67). Summarizing Sellars position, O’Shea writes that Sellars’ functionalist nominalist account of abstract entities means that “•triangular• will cover ‘any item in any representational system that plays the relevant role’” (p. 68). Given that Sellars takes abstract entities/universals to be metalinguistic features of languages, his psychological nominalism, introduced earlier, straightforwardly follows. As a reminder, Sellars’ (1956) psychological nominalism is the position that “all awareness of abstract

entities...is a linguistic affair” (§29).²⁴ If abstract entities/universals are features of our languages, then any awareness of them will presuppose the acquisition of such a linguistic framework.

Now, obviously if the position is left here, any attempt to use psychological nominalism to argue for the existence of nonlinguistic concepts will be contradictory or incoherent. In his later work, Sellars began to relax the hardcore linguistic intellectualism inherent in his earlier arguments for psychological nominalism. Summarizing Sellars’ position on the use of dot quotes, O’Shea (2007) writes:

An abstract singular term such as ‘triangularity’ is a culturally evolved metalinguistic device for conveying the perceptual-inferential-practical role played by •triangular•s in our ongoing cognitive engagements with physical reality. That is, it indicates the role played by any item in any language or *conceptual framework* that behaves in the same or relevantly similar normatively pattern-governed way as do typical utterances and inscriptions of *triangular*s in English and *dreieckig*s in German (p. 72, emphasis mine).

Here we can see that the dot quotes can be used to identify functional roles across conceptual frameworks, instead of just linguistic frameworks. In “Mental Events”, Sellars (1981) goes even further, suggesting that dot quotes can generalize over both linguistic and nonlinguistic representational systems, using the minds of nonlinguistic animals as examples of nonlinguistic representational systems (§76).

At this point, the very idea of psychological nominalism may seem to be lost, but here is how I think the earlier and later Sellars can coherently fit together. Sellars takes animal representation systems to build cognitive maps through the process of picturing. Sellars (1981)

²⁴ It might seem like I am missing the information about knowledge of particulars also being a linguistic affair here, but I take this result to follow from the claim that knowledge of abstract entities is a linguistic affair. Since, as detailed in the previous chapter, knowledge of particulars for Sellars is predicated on having general knowledge, knowledge of particulars will presuppose knowledge of abstract entities, such as categories like ‘triangular.’

writes: “I propose to argue that to be a representational state, a state of an organism must be the manifestation of a system of dispositions and propensities by virtue of which the organism constructs maps of itself in its environment, and locates itself and its behavior on the map” (§56). The representations that make up these maps are “complex objects that convey a wealth of information...in virtue of their sign-design” (Koons & Sachs, 2022). To understand how sign-design can convey a wealth of information for mapping systems, consider how the size of a circle on a roadmap can represent a city’s population at the same time as it can represent its distance from other cities by the relative position of the circle on the map. Sellars takes objects in the world and the representations that make up cognitive maps to (ideally) stand in isomorphic relations that he refers to as picturing.

His inspiration for this idea comes from the early Wittgenstein’s picture theory of meaning; however, instead of taking picturing to account for meaning, Sellars takes picturing to exclusively be a causal relation between representational systems (including linguistic ones) and the world. An example of this relation used by both Wittgenstein (1922, §4.014) and Sellars (2007a, §40) is the relation between the grooves on a record and the music produced by the record when played. This example helps emphasize that picturing is not necessarily imagistic in the usual Humean or Lockian sense. Instead, there is a “complex structural similarity” between the placement of the grooves on the record and the sounds produced when the record is played (O’Shea, 2007, p. 148). There will be more to say below on what sorts of things can and cannot be pictured, but this introduction should be sufficient for showing how psychological nominalism can be used to distinguish conceptual from nonconceptual content.

While cognitive map building and picturing relations are a feature of all representational systems, systems that are sophisticated enough to be regarded as conceptual also include

metarepresentations (deVries, 2005, p. 45).²⁵ This fits well with the later-Sellars' psychological nominalism if instead of taking abstract entities/universals to necessarily be metalinguistic devices, we take them to be metarepresentational devices. Picturing is a causal relation and is therefore limited to the actual nominalistic structure of the world, leading to representations of particulars that sit (ideally) in isomorphic relations with the order of things in the world. Metarepresentations allow for representations to be grouped together under the sorts of categories we usually identify with abstract objects or universals (e.g., triangularity). All awareness of abstract entities will then be dependent upon the ability to form metarepresentations, instead of metalinguistic devices. Since awareness of abstract entities is dependent upon conceptual capabilities, we can identify which beings have conceptual capabilities by determining which beings are limited to (ideally) representing the nominalistic structure of reality and which beings are capable of solving tasks that require an awareness of abstract relations/entities. Such a distinction would then allow us to ask: can nonlinguistic animals use metarepresentational devices?

Before answering this question in the affirmative, I want to assure the reader that this interpretation of psychological nominalism does not include a surreptitious thumb on the scale in favour of nonlinguistic concepts. Well regarded interpreters of Sellars, such as deVries and

²⁵ The use of the term metarepresentation is a bit awkward because I suspect much of what operates on the meta-level of representational systems are not representations in the traditional sense at all. Huw Price (2013) has distinguished between what he calls e-representations and i-representations. An e-representation is an "environment tracking" representation which includes everything from fuel gauges to cognitive maps. An i-representation is a representation that plays an "internal functional role" (p. 36). Price has argued that both of these should be called representations because the former plays the traditional role of corresponding with the world and the latter plays an internal functional role in a "cognitive or inferential architecture". Price thinks that keeping these two ways of representing apart, even if the same statement can represent in both ways, avoids the sorts of epistemological worries that motivated Richard Rorty's eliminativism about representations (see also sec. 5, this chapter). So, when I call the classificatory functions at the meta-level of representational systems 'metarepresentations', I mean something like i-representations whereas Sellars' maps are better thought of as e-representations (as Price himself has discussed (pp. 147-194)). So, while its use may be a bit awkward, there are reasons for still considering metarepresentations to be a type of representation.

O'Shea, hold similarly 'relaxed' interpretations of psychological nominalism but maintain that conceptual and/or metarepresentational capabilities belong exclusively to the domain of linguistic representational systems. Furthermore, as I will show in the next section, Sellars' account of nonconceptual cognitive maps formed through picturing relations provides his theory with a means of explaining away the sorts of experimental results that have led some animal behavioural scientists to attribute conceptual capabilities to nonlinguistic animals.

2. Nonlinguistic Conceptual Capabilities

Given Sellars' psychological nominalism, testing for nonlinguistic conceptual capabilities is a matter of testing a subject's ability to use abstract relations. The abstract relations that I will focus on in this section are the relations of same and different. SAME and DIFFERENT are considered abstract concepts because they "do not have a bounded, identifiable and clearly perceivable referent" (Borghi et al. 2017: 263). In other words, if the world is made up solely of particulars, there is no particular that one can point to and say "see, that is what difference is." Furthermore, there is no restriction on the types of objects that can share the relation of same or different as long as they can be classed as sharing a similarity or a difference. While it might seem odd to regard same and different as abstract relations, if we assume Sellarsian nominalism, they cannot be considered as basic constituents of the world. Instead, awareness of same and different will depend upon the metarepresentational capacities that Sellarsians take to only be available to creatures with linguistic capabilities. However, given the identification of metarepresentational capacities with conceptual capabilities, if a subject can demonstrate awareness of relations like same and different, then one should regard them as having conceptual capabilities. In this section, I will argue that at least some nonlinguistic animals can pass this test and therefore, that there is an argument from Sellarsian nominalism to the existence of

nonlinguistic conceptual capabilities. However, before I get there, it is first worth considering what results will not be sufficient for this conclusion and how Sellarsian picturing can show that some of the results that animal behavioural scientists have taken to demonstrate a grasp of the concepts of SAME and DIFFERENT can be explained through other means.

Some scientists have taken what are known as identity matching-to-sample (IMTS) tasks as evidence for the concepts of SAME and DIFFERENT (Castro & Wasserman, 2017). IMTS tasks require a subject to consider a sample card and then pick a card that matches with the sample card. For example, when testing on the ability to match colours, a subject could be presented with a white sample card and then be asked to select from two potential matches: a white card and a black card. If testing for the ability to grasp SAME, the correct match is the white one, and if testing for the ability to grasp DIFFERENT, the correct card is the black one.

In Smirnova et al. (2021), crows and amazons were trained and tested on IMTS tasks for colour, shape, and number respectively, before being tested on size with no additional training. Crucially, tests include novel (never seen before) cards, to make sure that the subjects are generalizing from the training procedures instead of merely being conditioned to pick certain cards. It is worth noting that success at the task often requires the subject to identify a particular feature on the card as the one to be matched. For example, numbers are represented by the number of shapes on a card, so if the sample card has a red square and a green triangle on it, a potential choice could be between a card with a red square on it and a card with a black circle and a blue rectangle. If testing for SAME, the right choice would be the card with the black circle and the blue rectangle because it has the same number of shapes on it as the sample card. During tests on the dimensions of colour, shape, and number, the birds matched to novel sets of cards 79% of the time. When it came to the dimension that they had not been previously trained on

(size), they matched correctly 82% of the time when the sample card matched with the comparison card on size alone, and 83% of the time when the comparison card matched on both size and shape (p. 111).

While these results do provide insight into the cognitive capabilities of nonlinguistic animals, from a Sellarsian perspective they do not provide a reason to attribute conceptual capabilities.²⁶ As discussed in the previous section, Sellars uses cognitive maps that picture the animal's environment to explain the behaviour of nonlinguistic animals. Here, I will argue that this sort of approach is sufficient for explaining the success of the crows and amazons at the IMTS tasks. To be clear, just because success at a task can be explained using picturing does not mean that the task was solved nonconceptually. Sellars takes picturing to be a component of any empirically adequate language (deVries, 2005, p. 53), so picturing will be a process that is shared across both linguistic and nonlinguistic representational systems whether they have conceptual capabilities or not. However, since picturing can be done by nonconceptual and conceptual systems alike, if picturing alone is sufficient to explain success at a task, then that performance alone does not justify the attribution of conceptual capabilities. If picturing is not sufficient to explain success at the task, then we have a reason to attribute conceptual capabilities to the subject.

To see how picturing can be used to explain success at IMTS tasks, we need to get a better sense of how picturing works. One of the areas where Sellars (2007b) develops the idea of picturing is in his discussion of the fictional language of Jumblese. Sellars (1979) develops Jumblese to show that predicates are in principle dispensable (p. 51). His reason for this claim is to support his argument for nominalism. The marks and sounds that make up a language are part

²⁶ Though, as I have argued in previous work, numerical discriminations do provide a reason to attribute conceptual capabilities to nonlinguistic animals from a Brandomian inferentialist perspective (Nelson, 2020).

of the causal and spatial order that make up the naturalistic world. However, when it comes to analyzing these objects, it seems like there is an unavoidable relationality built into them that is hard to make sense of from a nominalist perspective. For example, if we look at a sentence like ‘the dog is red’, it seems to be built out of a relation between a subject (‘the dog’) and a predicate (‘is red’). DeVries (2005) writes that “as long as all sentences are thought of as combinations of linguistic tokens, sentences seem inescapably relational entities, and that relationality seems to play an indispensable role in the sentence’s ability to perform its predicative function” (p. 82). Jumblese is then meant to show that one can build a language that can fulfil the functional role of predicates without the relational structure that seems to be built into them. In other words, “if predication does not have a relational structure, then there is no need for any supposed relatum that is posited simply to fulfil this (non-existent) relation” (p. 82).

Jumblese is a language that is built solely out of “individual constants and individual variables” (deVries, 2005, p. 82). One is able to convey information that is usually communicated through a predicate by the ways in which names are written or arranged. The inspiration for this idea comes from Wittgenstein’s (1922) claim in the *Tractatus* that we can better understand the role of the “propositional sign” if we imagine propositions as made up of physical objects like tables and chairs, “instead of written signs” (§3.1431). If propositions were made up of “spatial objects” then “the mutual spatial position of these things” would express “the sense of the proposition” (§3.1431). So, instead of claiming that “the complex sign ‘ aRb ’ says that a stands to b in the relation R ’, we ought to put, ‘That ‘ a ’ stands to ‘ b ’ in a certain relation says that aRb ’” (§3.1432). Jumblese takes this possibility seriously by having syntactical features, such as the way in which a sign is written or the spatial relations it shares with other signs communicate the type of information that is normally conveyed by subject-predicate

relations. For example, we can convey that an object is red by bolding the sign, so ‘x is red’ could be translated to ‘**x**’. Likewise, we could use italics to communicate that an object is brown and then translate ‘y is brown’ into ‘*y*’. Jumblese could then translate ‘x is on top of y’ by physically putting one sign above the other, so ‘the red apple is on top of the brown table’ becomes:

a
b

Sellars (1979) takes the possibility of a predicate-free language, like Jumblese, to indicate that predicates are in principle dispensable (p. 51). What predicates are doing in a sentence is not establishing a relation between a name and some property or relation. Since the functional role normally played by predicates in Jumblese can be fulfilled by physically modifying and arranging names, the function of predication is better understood as “a matter of qualifying and arranging names” (deVries, 2005, p. 89).²⁷ Importantly for the claims in this chapter, Jumblese shows a way in which complex signs can picture objects in the world through isomorphic causal relations. Therefore, if one can represent a claim in Jumblese, then it can be pictured.

So, given the above exposition, let’s return to IMTS tasks. Consider a task where a subject is asked to match based on the size. For example, the sample card could have a large oval on it and the possible match cards have either a small or large triangle on them. The correct

²⁷ To be clear, Jumblese is a language that lacks predicates (taken as additional objects that must then be related to a name) but does not lack predication as a function (through the arrangement and qualification of names). So, if we take a bolded sign as communicating that the object is red, we should not think of the predication function as some additional object (e.g., boldness) beyond the name itself that gets its meaning by standing for some other object (e.g., redness). Instead, the boldness is the form or mode of presentation of the sign. So, we should not take Jumblese as simply providing an alternative notation for predicates, though we can take it as providing an alternative notation for predication (one that highlights that one doesn’t need to start multiplying objects in one’s ontology in order to account for such a function). I would like to thank Jonathan Phillips (personal communication) and Ross Nelson (personal communication) for both raising this worry and Willem deVries (personal communication) for helping me understand how to answer it.

response, if testing for SAME is to select the large triangle because like the oval, it is large. One way to picture this task would then be to represent the shape as a bolded sign if it is large and as an italicized sign if it is small.²⁸ So, the sample card could be ‘a’ and the possible matches could be ‘b’ and ‘c’.²⁹ These representations provide enough information to solve the IMTS task without any reference to the concepts of SAME and/or SIZE. The training could condition the subject to act according to the rule of criticism of ‘seek X’ where ‘X’ is a bolded sign. Now, this is a little tricky considering that the birds were never trained on size. Instead, they were trained and tested on colour, shape, and number, before being tested on size with no additional training. So, figuring out that a sign being bolded is the relevant feature in the task could not be something that was directly conditioned for during training. However, the birds could have been conditioned to ‘seek X’ where ‘X’ is the qualifying feature of the sign that is not shared by both potential matches,³⁰ and that should be sufficient to solve the task.

While this strategy alone is sufficient for solving IMTS tasks, it is not sufficient for solving relational matching-to-sample (RMTS) tasks. In Smirnova et al. (2021), after the subjects were trained and tested on IMTS tasks, including the transfer task for size, they were tested on RMTS tasks with no additional training. RMTS tasks require the subject to match cards that share relations instead of physical features. For example, the sample card could have a blue cross and a green square on it, the left possible match, a yellow triangle and a red circle, and the right

²⁸ I am not claiming that the subjects are using Jumblese to solve the task. Instead, thinking about whether the subjects could use Jumblese to solve the task provides a way to consider whether picturing alone could be used to solve the task since Jumblese is a form of picturing.

²⁹ For the moment, I am ignoring shape as a relation that needs to be conveyed by picturing because it is not relevant to current example. One could represent it by, for example, putting signs in different fonts depending on their shape. In my discussion of relational matching-to-sample tasks below, I will use this possibility to walk through a possible example.

³⁰ Notice that we need the latter part of this rule because the objects often have properties irrelevant to task. For example, in the matching task for size, all of the shapes are the same colour which would need to be conveyed through a qualifying feature of the sign design.

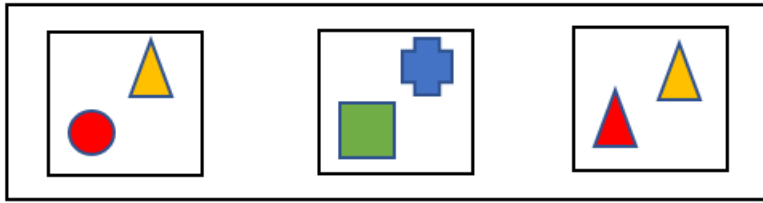
possible match, a yellow triangle and a red triangle (see Figure 1). In this case, if testing for SAME, the correct choice is the left card because like the sample card it has two different shapes on it. In other words, the relation shared is difference, so matching according to SAME requires one to identify that what is the same between the sample card and the correct matching card is that both of them represent the relation of difference. The transfer tests for relations were on size, shape, and then colour. To illustrate, the relation of difference can also be matched according to colour instead of shape when, for example, the sample card has a blue circle and a yellow circle on it, the left card, two yellow squares, and the right card, a blue triangle and a yellow triangle. The right card is the correct choice in this example because like the example card, it features two differently coloured shapes instead of two shapes with the same colour. The birds were tested on both IMTS and RMTS tasks in the same set of trials and succeeded 75% and 73% of the time respectively. Smirnova et al. (2021) writes that:

These results represent strong evidence that the birds spontaneously perceived the relations-between-relations without ever having been explicitly trained to do so. We call this perception spontaneous because neither before nor during the three RMTS tests were the birds given differential reinforcement training on trials in which the sample and comparison stimuli shared no physical features (p. 112).

The term ‘relations-between-relations’ refers to the fact that the only thing shared by the sample card and the matching card are either the relations of same or different. The match is then made based on the relation between the cards (that they share the relation of same or different).³¹

³¹ Chimpanzees trained to use symbols have also succeeded at RMTS tasks (Thompson et al., 1997). In addition, Irene Pepperberg (2021) demonstrated that an African grey parrot was able to answer questions about what property made objects the same or different. While Pepperberg’s experiment does not count as an RMTS task, it is another task where the relation itself must be treated as the object that guides the search.

Figure 1



My representation of a possible set of cards for an RMTS task. For many more examples of the cards actually used, see Smirnova et al. (2021).

Now, it might not be immediately obvious why picturing cannot provide a possible explanation for this task. The relations of same and different can be captured by two-place predicates, for example, ‘x is the same as y.’ Jumblese demonstrates that the information provided by predicates can be functionally communicated through the qualification and arrangement of names. The cards could then potentially be represented as names that are close together if they share the relation of sameness and far apart if they share the relation of difference.³² The cards in the first example discussed for RMTS tasks (see Figure 1) could then be translated using the following manual, with colour being represented by the colour of the picturing sign³³ and shape by the type of font:

x is a triangle = ■

x is a circle = ●

x is a square = □

x is a cross = ✕

The cards would then be:

³² My thanks to Jonathan Philips (personal communication) for suggesting this as a representational possibility.

³³ Colour should probably not be part of the picturing representations, but I am using it here as a shorthand. In proper pictures, colour would probably need to be represented through other types of modifications to the names, such as a strike-through for red and an underline for yellow.

Left match card = [a b]

Sample card = [c d]

Right match card = [e f]

On the one hand, this seems like it would be enough to explain success at the task. The shapes and relations on each card can be represented by a Jumblese correspondence to the shapes on the cards. The fact that the subject needs to make a match based on a comparison of the arrangements of names and not just their modifications still fits into what can be communicated through Jumblese. So, it is unclear whether this should be regarded as making much of a cognitive difference.

On the other hand, there is something odd about representing same and different using spatial orientations that are supposed to line up in isomorphic relations with the objects that they picture in the world. While the holistic features of Sellars' account of concepts are usually recognized, it is important to note that the nonconceptual content of animal representation systems also needs to be understood as functioning in systematically holistic ways. DeVries (2005) writes that "it takes a whole system to represent in any interesting sense" (p. 53). The problem with representing sameness and difference by using the physical features and arrangements of names is that it rules out the possibility of using that specific physical feature or arrangement to represent some other physical feature or arrangement of objects in the world. So, take the example used above of using distance to represent the relations of same or different. If the distance between names is representing same or different, the standing relation of distance between names cannot coherently be used to represent the actual distance between objects. The plausible conjecture I take from this example is the claim that any attempt to represent the relations of same and different using a physical arrangement of names will lead to the inability to

represent some actual physical arrangement of objects that is needed for animal representation systems to coherently navigate the world.³⁴

The reason for this inability is that the relations of same and different are not physical relations that can be captured through the qualification and arrangement of names through first-order predicates. Instead, the concepts of SAME and DIFFERENT are second-order predicates: they function over other predicates (or the features of Jumblese represented through the physical qualification and arrangement of names) instead of over names. This is possible to see when one notices that SAME and DIFFERENT always require the specification of a further concept, such as SIZE, SHAPE, and COLOUR. The need for the specification of a further concept can be seen in the example discussed above where the sample card and both possible matches share the relation of different colours, but it is irrelevant to the matching task which requires one to recognise that the relation of different shapes is the relation that is meant to guide the choice.

The argument I am making here is similar to the one made by Frege (1950) in *The Foundations of Arithmetic* where he argues that numbers are second-order concepts. In that work he points out that if one is handed a deck of cards and asked, “How many?” one has not been given enough information to answer the question. Instead, a further concept has to be identified,

³⁴ Maybe one could argue that what the subjects are doing in these tasks is separate from their wider dealings with the world. So, the birds could learn to picture using something like standing distance between the symbols for same and different during the task, but since they ordinarily will not need to picture abstract relations like same and different outside of the task, when not involved in these experimental circumstances, they can use those elements for picturing the distance between objects, or whatever other first-order element they have repurposed, for picturing same and different. I cannot, at least at this stage in the argument, completely rule out this possibility. However, there are reasons for doubting that this is what is happening. For instance, as discussed above, the birds were able to succeed at RMTS tasks while only being trained for IMTS tasks, which would suggest that the cognitive capabilities involved in succeeding at RMTS tasks are not a set of bizarre and attenuated skills that only apply to a very specific set of testing circumstances. If that were the case, then one would expect that training for that specific task would be required for succeeding at it. Furthermore, the first-order aspects that would normally be pictured through something like standing distance do not go away in these tasks. Take, for example, distance between objects. It is unlikely that the subject can stop picturing distance between objects while solving the task. If the subject can no longer recognize distances, then the task and potentially one’s entire engagement with the world is going to be incoherent and confused.

such as “cards, or packs, or points” (§22). This argument also applies to the concepts of SAME and DIFFERENT; if one is handed a deck of cards and asked, “Are they different?”, one does not yet have enough information to answer the question. A further concept needs to be specified in order to answer the question. For example, are they all the same in the sense that they are all cards, or are they all the same suit, or in a standard deck of cards, are they all different because no two cards are exactly alike (except for perhaps the jokers). Discussing Frege’s claim, Brandom (1994) writes that “counting is intelligible only with respect to a sortal concept” (p. 438), and the same can be said for applications of SAME and DIFFERENT.

The fact that the relations of same and different cannot be pictured means that propositions that include ‘same’ and ‘different’ are not “first-order, matter-of-factual atomic statements” (deVries, 2005, p. 51). For Sellars, only first-order atomic statements can be pictured. DeVries writes that “atomic statements contain no logical words, no quantificational structure. In a subject-predicate language they are configurations of names and predicates; in Jumblese...atomic sentences would be quite literally configurations of names” (p. 51). Given this distinction, I would like to suggest that ‘same’ and ‘different’ are logical terms. They function metalinguistically or metarepresentationally to classify the functional roles of predicates in linguistic/representational systems, similarly to the way in which ‘meaning’ or ‘reference’ do. If this suggestion is right, and RMTS tasks demonstrate the ability to classify predicates as playing the same or a different functional role, then the crows and amazons in Smirnova et al.’s (2021) experiments pass the bar that Sellars takes to distinguish conceptual beings from other types of representational systems.

In “Mental Events” Sellars (1981) is willing to attribute quite sophisticated cognitive capabilities to animal representation systems in ways that conflict with his earlier linguistic

intellectualism but are clearly a consequence of integrating picturing into his framework. For example, he argues that nonlinguistic representational systems include propositional forms and are able to make Humean inferences. In order for a representation to count as propositional, it “must represent an *object* and represent it *as* of a certain character” (§60). This follows from his account of picturing where objects can be represented with names, and the function normally played by predicates can be played by the orientation and qualification of those names. Sellars therefore concludes that “propositional form is more primitive than logical form” (§59). A Humean inference is a nonlogical associative inference, such as the equivalent of ‘smoke here, fire nearby’ (§66). This sort of inference will be helpful to any animal that is searching for an object for which proxies can help narrow the search space,³⁵ and the ability to make these types of inferences can be brought about through purely causal processes, such as at least some forms of conditioning.

Given that Sellars has argued that the subject-predicate form is dispensable, that pictures (in the Sellarsian sense) can have propositional form, and that representational systems with only picturing abilities can make inferences, he can no longer use any of these abilities to ‘carve’ humans from their animal kin. Instead, he argues that the real demarcation is between non/prelogical representational systems and logical representational systems, defining the latter as systems that “contain representational items which function as do logical connectives and quantifiers” (§82). So, while non/prelogical representational systems can make Humean

³⁵ A proxy is just something that can stand in for something else in the environment. Smoke can be a proxy for fire or fresh paw prints can be a proxy for the animal that left the paw prints. Proxies narrow the search space because if a being is trying to find something in their environment (e.g., a prey animal), if they find a proxy, they no longer have to search the entire environment, instead the amount of environment that they have to search has been narrowed.

inferences based on the association of representational states, logical representational systems can make Aristotelian inferences that include logical connectives and/or quantifiers (§87).

Later in this thesis, I am ultimately going to argue that this story is not quite correct, coming down on the side of a qualified version of Brandom's inferentialism to argue (a) that the distinction between beings with conceptual capabilities and those with mere picturing capabilities has to do with normativity, not logic, and (b) that normative practices precede logical ones.³⁶ So, logical capabilities are not necessary for conceptual ones. Instead, the order of dependence is likely the opposite. It is easy to see how Sellars' account of picturing and his psychological nominalism led him to this particular conclusion, but we can hold onto these positions and resist where he draws the demarcating line by associating normativity with ways of doing instead of types of representation. For Brandom, normativity is a result of the ways in which subjects are part of a game of giving and asking for reasons and conceptual content is conferred on those doings by their relation to the doings of others within that game.

That said, even if we accept all of this, we can still, on the basis of Sellars' account of picturing and psychological nominalism, say that 'same' and 'different' are logical terms because if (as Brandom argues) logical capabilities are dependent upon normative and conceptual capabilities, then logical capabilities are preceded by conceptual capabilities. This means that through a slightly indirect route, success at RMTS tasks demonstrates conceptual capabilities. Therefore, the crows and amazons in Smirnova et al.'s (2021) experiments demonstrated that they have conceptual capabilities.

Now, one might want to argue that 'same' and 'different' are not logical terms in the way that the operators in propositional or predicate logic are logical terms. However, this would be a

³⁶ See especially Chapter 5 and 6.

merely terminological objection that does not affect the central claim. They are logical in the relevant sense that they cannot be accounted for through mere picturing and instead operate on a second-order level where predicates (or the orientation and qualification of names) instead of names and variables are the functional objects. The claim is that they cannot be accounted for by merely thinking about the ways in which particulars are situated in the world; instead, they are about the ways in which representations of those particulars are oriented and qualified. In other words, ‘same’ and ‘different’ classify functional moves in ways that are similar to claims about meaning. In fact, one does not stretch linguistic convention by much if one translates meaning claims into claims about sameness. For example:

(7) ‘Chien’ (in French) means *dog*.

With little semantic loss can be translated into:

(8) ‘Chien’ (in French) is the same as *dog*.

I am not trying to claim that ‘same’/‘different’ function in the exact same way as ‘meaning’. Instead, I am trying to show that they function on the same (second-order) level. So, while I think that Sellars and Brandom (for different but overlapping reasons) should regard ‘same’ and ‘different’ as logical terms, the argument does not hinge on whether we call them logical or not. It hinges on the level that they are operating on.

Furthermore, it is hard to see how Sellars or Sellarsians could avoid calling these abilities normative, even if it is not clear (at the moment) how exactly to understand them as part of a wider space of reasons. For Sellars, there are two domains: the causal/spatial world and the normative space of reasons that emerges from the causal/spatial world. As O’Shea (2009) has compellingly put it, Sellars’ position is ‘naturalism with a normative turn.’ This claim does not mean that normativity is something non-natural or spooky in any way, only that normativity

cannot be conceptually reduced to causal processes without remainder (though as discussed in the previous chapter, it can be causally reduced) (Sellars, 1956, §5).³⁷ My point here is that either something is causal/spatial and represented through picturing, or something is part of the normative space of reasons, and while it can be explained through causal processes, it cannot conceptually be reduced to them. There is no third domain for these capabilities to function in. Since I have already established that they cannot be realized through picturing alone, they must be part of the normative space of reasons.³⁸

In this section, I argued that we can use Jumblese to determine whether a task can be completed through picturing alone or if the task will require awareness of abstract entities/relations. Subjects that are able to succeed at tasks that require awareness of abstract entities/relations provide a reason to attribute conceptual capabilities to them. I applied this distinction to animal behavioural tasks that have been purported to show that crows and amazons grasp the concepts of SAME and DIFFERENT. I argued that IMTS tasks can be solved through picturing alone and therefore do not provide a reason to attribute conceptual capabilities to subjects that succeed at the tasks. However, RMTS tasks cannot be solved through picturing alone because they require awareness of the abstract relations of same and different. Therefore, the success of crows and amazons at these tasks provides a reason to attribute conceptual capabilities to them.

3. Concepts and Knowledge

While in the final section of this chapter I will discuss an objection to Sellars' approach itself, it is first worth considering an objection from within Sellars' framework. The central thesis

³⁷ This is basically just the idea that you cannot get an ought from an is, though it might be more accurately put here as you cannot reduce an ought to an is and still have something that you can call normative.

³⁸ I take this argument to be a temporary support beam that will eventually be replaced with the argument in Ch. 6 for regarding some nonlinguistic animals as members of the space of reasons.

of this chapter is that, given Sellars' psychological nominalism, success at RMTS tasks must be interpreted as demonstrating conceptual capabilities. However, one can also ask whether nonlinguistic subjects are capable of meeting the other sorts of standards that Sellars takes to be necessary for grasping concepts. While there are many objections that one could generate this way (in some respects, one can regard the next three chapters as responses to these types of objections), the first one that is likely to come to mind for a committed Sellarsian comes from the connection between concepts and knowledge. As deVries (2005) writes, "to have a concept is not just to have a disposition"; instead, "the subject and the system must be *epistemologically reflective* in that the subject exercises her concepts knowingly" (p. 111). Sellars' account of knowledge is infamously steep and is read by many to be out of reach for nonlinguistic animals and human children as old as four (Triplett & deVries, 2007b).³⁹ So, if conceptual capabilities require epistemic capabilities, then one could undermine the claim that nonlinguistic animals that succeed at RMTS tasks have conceptual capabilities by arguing that they lack the necessary epistemic capabilities. If it is assumed that psychological nominalism and Sellars' account of knowledge can be coherently held at the same time, the objector could argue that the inability of nonlinguistic animals to meet conditions for knowledge shows that something has gone wrong with the preceding analysis of RMTS tasks. In this section, I will respond to this objection by arguing that empirical work suggests that some nonlinguistic animals are able meet Sellarsian conditions for knowledge.

³⁹ Though one could of course accept that concepts require knowledge but then deny Sellars' account of knowledge in order to argue for a less demanding condition. For example, philosophers, such as Hilary Kornblith (1999; 2012) and Andrew Fenton (2007; 2012) have argued that nonlinguistic animals can meet externalist requirements for knowledge. More recently, Andrew Lopez (2023) has argued that nonlinguistic animals have know-how (p. 149), and one could potentially argue that this sort of knowledge is sufficient for granting conceptual capabilities (though Lopez remains agnostic on whether nonlinguistic animals have conceptual capabilities (p. 141)).

Sellars gives two conditions for knowledge, one of which can be regarded as an externalist condition, and the other as an internalist one.⁴⁰ Sellars (1956) takes the epistemic authority of a belief or observation report, such as ‘x is green’ to come from the subject’s ability to “infer the presence of a green object from the fact that someone makes this report” (§35). If one’s beliefs or reports are reliable indicators of what is actually the case, then their beliefs or report have a positive epistemic status; in other words, the first condition for knowledge requires that one’s beliefs/reports are epistemically efficacious (at the very least, for others). However, this hurdle alone is not sufficient for actual knowledge because arguably a car reliably reporting that its door is open could pass this bar (deVries, 2005, p. 121).

So, in addition, Sellars (1956) argues that in order for a subject to have knowledge, not only must a subject’s beliefs/reports be reliable indicators of what is the case, but the subject must also be aware that their judgements are reliable (§35). The problem (as even interpreters of Sellars as sympathetic as deVries (2005, pp. 129–130) and O’Shea (2007, p. 215 fn. 35) have pointed out) is that if explicit knowledge of the reliability of one’s perceptual states is required for perceptual knowledge, then perceptual knowledge is likely a rare achievement outside of epistemology seminars. Furthermore, the condition potentially paints a misleading picture of the

⁴⁰ Andrew Fenton (personal communication) argues that Sellars’ account of knowledge as I have described it here seems entirely internalist and that neither of these conditions can be considered externalist. A standard definition of internalism is that “knowledge requires justification and that the nature of this justification is completely determined by a subject’s internal states or reasons”, whereas a standard understanding of externalism is that externalism denies at least one of these commitments: “either knowledge does not require justification or the nature of justification is not completely determined by internal factors alone” (Poston, 2008). To support the latter claim externalists have argued “that the facts that determine a belief’s justification include external facts such as whether the belief is caused by the state of affairs that makes the belief true, whether the belief is counterfactually dependent on the states of affairs that makes it true, whether the belief is produced by a reliable belief-producing process, or whether the belief is objectively likely to be true” (Poston, 2008). The sorts of reliable processes that Sellars regards as necessary for knowledge seem to fit this definition well. Either way, I do not think it affects the argument that I am making in this chapter. The question is whether it is possible for nonlinguistic animals to meet Sellars’ conditions knowledge, and I am arguing that there are empirical reasons to think that they can, whether those conditions are labeled as externalist or internalist. So, if one is not convinced by the aforementioned definitions, they may ignore my use of the term ‘externalism.’

phenomenology of perception. One does not normally make an observation report or have a perceptual belief and then infer from that report/belief, in addition to auxiliary premises about the reliability of one's reports/beliefs, to knowledge of the way the world actually is (O'Shea, 2007, pp. 215–216 fn. 35). Instead, one sees that the 'ball is red' by, well, seeing that the ball is red.

For that reason, most interpreters of Sellars tend to deflate what the internalist requirement is asking for. For example, deVries (2005) argues that knowledge of one's own reliability need only be implicit (p. 130). Likewise, O'Shea (2007) claims that a child has implicit knowledge of their perceptual reliability when they can "wield the various ordinary *is/looks* conceptual contrasts concerning reliable and unreliable conditions of perception" (p. 128). The *is/looks* distinction referred to by O'Shea emerges from Sellars' critique of foundationalist approaches to knowledge that take appearances to be epistemically prior to claims about reality. Sellars (1956) thinks that appearance theorists have misunderstood the 'logic of the looks', which he takes to show that claims about reality are conceptually prior to claims about appearances (§§10-20). For Sellars, the "fundamental epistemic function of the concept of appearance or the logic of 'looks' is a conceptual capacity that we first acquire in learning the sorts of circumstances (awkward lighting, etc.) in which having an experience of seeing that something is red is not to be trusted as such in these particular circumstances" (O'Shea, 2007, p. 121). For Sellars (1956), talk of looks and appearances signals that one is not fully committed to the application of a particular concept in an observation report or perceptual belief (§12).

To illustrate this claim, Sellars (1956) imagines the owner of necktie store in which electric lighting, having recently been invented, has just been installed (§14). The lighting

conditions make the ties that are blue under normal lighting conditions look green. If the store owner were to demonstrate this effect to an interested shopper by taking the green looking tie outside to show that it is blue under standard lighting conditions, the interested shopper, unaccustomed to electric lighting, might be tempted to say that the tie is green inside but blue outside. However, given that the interested shopper knows that the colour of objects does not change by merely being moved from one location to another, he develops ‘looks’ language to signal the “holding back from endorsing or epistemically committing to the idea” that the tie is green “given the awkward lighting conditions” (O’Shea, 2007, p. 121).

Given that looks/appearances talk is used to signal that one is not fully endorsing is-talk, talk of looks/appearances is parasitic on is-talk. Sellars (1956) writes that:

...the concept of *looking green*, the ability to recognize that something *looks green*, presupposes the concept of *being green*, and that the latter concept involves the ability to tell what colors objects have by looking at them – which, in turn, involves knowing in what circumstances to place an object if one wishes to ascertain its color (§18).

O’Shea (2007) summarizes the point as:

Sellars’ account of the endorsement or epistemic appraisal dimension of the concept of appearance, then, is roughly that, as an element in a perceptual experience, an •*x looks red*• is a directly object-caused or stimulus-prompted (i.e., non-inferential) conceptual response that implicitly functions to withhold commitment to aspects of what would normally, in standard conditions, give rise to an •*x is red*• conceptual response (p. 122).

O’Shea’s deflated interpretation takes this distinction to show what sorts of abilities would signal an implicit grasp on the reliability of one’s own observation reports/perceptual beliefs (p. 215 fn. 35).

Facility with the is/looks distinction demonstrates implicit knowledge of the reliability of one’s conceptual discriminations because it requires one to recognize whether the conditions are standard or nonstandard, and how the standardness or nonstandardness of those conditions

affects whether one should fully endorse, partially endorse, or not endorse their application of a particular concept in their observational report/perceptual belief. O'Shea (2007) writes that:

Sellars' account therefore does not require that one be able to launch into perceptual epistemology if one is able to see that something is green. It does, however, distinguish between, on one hand, those who are perceptual knowers within a conceptual framework of reason-giving to the extent that they can, *if called upon* by circumstance or by criticism, make at least some minimal distinctions concerning the sorts of conditions in which their color judgements are reliable or unreliable and, on the other hand, those proto-perceivers who cannot (or cannot yet) do so (p. 216 fn. 35).

In other words, in order for one to count as a knower, when called upon, one must be able to demonstrate an ability to distinguish something being one way and merely appearing that way.

While O'Shea and deVries assume that this is a linguistic capability, there is empirical work with chimpanzees on the appearance/reality distinction. Unfortunately, as far as I am aware, there is no work on this distinction for birds, but if chimpanzees are able to use this distinction, then it does demonstrate that the ability does not depend on linguistic capabilities. In Krachun et al. (2016), they tested the ability of chimpanzees to make successful discriminations in the face of illusory stimuli, including the use of "lenses to change the apparent size of food items...a mirror to change the apparent number of items, and tinted filters to change their apparent color" (p. 53). All of the subjects tested on the size-changing lenses passed, half of the subjects passed the mirror task, and five of seven subjects passed the filter task.

It is worth briefly walking through one of these tasks (Krachun et al., 2016). For the lens tasks, the subjects were first tested to make sure that they preferred larger grapes to smaller grapes. Lenses were then used to make the smaller grapes appear large and the larger grapes appear small. Before the task, the properties of the lenses were demonstrated to the subjects. In the first task, the subjects watched the experimenter place the grapes behind the lenses. To rule out the possibility that the subjects were merely tracking the placement of the larger grape, in the

next task, the lensed containers were stacked on top of each other and baited in view of the subject. However, to make sure the subject could not succeed at the task by merely visually tracking where the larger grape had been placed, before a decision was made, the subject's vision was blocked, and one container was placed to the left and the other to the right of the table. Finally, a test was done to make sure that the subjects were not merely learning to avoid the magnifying lens. In this task, a large grape was placed behind the magnifying lens, and a medium grape was placed behind a non-distorting piece of glass, "so that it appeared the same size that the smaller grape had appeared behind the magnifying lens" (p. 58). In this case, the subject had to choose the magnifying lens instead of avoiding it while forgoing "the grape that looked the same size as that which had been correct" in the previous trials (p. 58).

All of the subjects were able to succeed at all of the tasks. The subjects performed better than the subjects of a previous experiment (Krachun et al., 2009) which had not included a demonstration for the chimpanzee subjects on how the lenses worked. In that experiment, only five of the fourteen subjects passed the tests. Furthermore, Krachun et al. (2016) argue that it is unlikely that the results could be explained by the subjects learning a reverse contingency rule, such as 'choose the small grape to get the large grape' because previous experimental work has demonstrated that chimpanzees perform poorly at tasks that require them to learn these types of rules (Krachun et al., 2009).

Unfortunately, there is limited experimental work on the ability of other nonlinguistic animals to deal with these kinds of experimental set ups, but these results suggest that a grasp of the is/looks distinction is within the abilities of at least some nonlinguistic subjects. In some ways, such a result is hardly surprising, given that many nonlinguistic animals will need to deal with discriminating along the lines of the is/looks distinction in their everyday coping, whether

that is light refracting in water or the changes in lighting conditions throughout the day and environment. The ability to successfully navigate one's environment despite changes in the appearances, backed up by the sort of experimental work discussed above, shows that one cannot merely assume that an implicit grasp of the reliability of one's perceptual beliefs is only available to linguistic participants of the game of giving and asking for reasons. Now, I admit there has been limited experimental work in this area so far, but I take these results as sufficient for shifting the burden of proof. Sellars and his interpreters seem to mostly just assume that the is/looks distinction is dependent upon linguistic capabilities, but what the experimental results show more than anything is the lack of a proper argument for this conclusion.

4. Fixing Semantic Content

There is a standard objection against attributing conceptual content to nonlinguistic animals that fits well with the NCH conception of conceptual capabilities. In "Do Animals Have Beliefs?", Stephen Stich (1979) points out that while it might seem natural to attribute a belief to the dog Fido about the location of the bone that he just buried in the yard, it is difficult to figure out how to assign content to this belief. First, it seems implausible to assume that Fido understands anything about the origin or anatomical function of bones (p. 18). Second, Fido does not "recognise or exhibit any interest in chewing atypical bones -- the bones of the middle ear, for example, or the collar bone of a blue whale" (p. 18). Third, and worst of all according to Stich, is that:

Fido does not know the difference between real bones and a variety of actual or imaginable ersatz bones (made of realistic looking plastic, perhaps, and partially covered with textured soy protein suitably flavoured). Nor is there anything that would count as explaining the difference between real and fake bones to the dog. Fido is incapable of understanding that distinction. But given Fido's conceptual and cognitive poverty in matters concerned with bones, it is surely wrong to ascribe to him any belief about a bone. To clinch the point, we

need only reflect that we would certainly balk if the same belief were attributed to a human who was as irremediably ignorant about bones as we take Fido to be (pp. 18-19).

The problem that Stich takes to follow from these claims is that it is not clear how to fix the content of beliefs for nonlinguistic animals if we cannot attribute conceptual content to their beliefs.

However, this baldly stated, it is not clear why this argument is taken to have much force at all. All of these claims are both overstated and contain empirically evaluable open questions. Starting with the third claim, it is unclear how strongly one should interpret it since it seems likely that humans with linguistic capabilities could also fail at such a task. Take, for example, a recent news story about a woman who reported her finding of a fake skull in a creek to the police because (presumably) she took it to be real (Barton, 2023). How good does one need to be at distinguishing between fake bones and real bones for it to be appropriate to attribute the concept BONE to them? Surely one does not have to be perfectly reliable. Otherwise, it seems unlikely that we could attribute the concept to BONE anyone. Furthermore, one could test the ability of dogs to distinguish between real and fake bones. Given that most dogs have a keener sense of smell than humans and distinguishing between real and fake bones would partly be a matter of recognizing the material it is made out of, it is not intuitively obvious to me that dogs would do worse than humans at such a task.

One might contend that I am reading this claim in an uncharitably literal way. The right way to interpret the claim is that grasping a concept requires grasping the appearance-reality distinction, and this distinction is one that it would be inappropriate to attribute to Fido. A dog might be trained to succeed at the task of distinguishing between real and fake bones, but he will not be making that distinction based on the concepts of REAL and FAKE. Instead, he would be making the distinction based on the ought-to-be rules that his human trainers have conditioned

him to follow based on their grasp of the ought-to-do rules that construct such a distinction. This version of the objection sounds very similar to an argument by Donald Davidson (1982) that is often discussed alongside Stich's argument. Davidson argues that having beliefs requires the concept BELIEF and having the concept BELIEF requires the ability to navigate the "subjective-objective contrast" (p. 327). For Davidson, these concepts and abilities are only available to animals with linguistic abilities.

However, these claims also seem like open ones, especially considering the experiments discussed in the previous section that purport to show that chimpanzees have some facility with the appearance-reality distinction. It could turn out that dogs cannot learn to distinguish between real and fake bones and if they could, that they would not be making that distinction based on the concepts of REAL and FAKE, but it seems far from an a priori truth that they cannot and would not. And while I do not want to overstate the strength of the evidence in the previous section, the fact that chimpanzee subjects are able to make decisions that seem to require some understanding of a difference between what appears to be the case and what is the case at the very least shifts the burden of proof.

Davidson argues that the ability to be surprised is what demonstrates a facility with the distinction between what is merely subjective and what is objective. So, perhaps he could argue that the experiments with chimpanzees fail to show such a facility because at no point do they demonstrate that the chimpanzees are capable of being surprised. I think this version of the objection stands on even weaker grounds. First, it seems plausible to think that surprise is an emotionally valenced state (Baras & Na'aman, 2022). Therefore, it is probably better to take surprise as a sufficient condition for a command of the subjective-objective distinction instead of a necessary one. Otherwise, Davidson would need to provide an argument for the claim that

being able to experience certain types of emotional valence is necessary for being able to understand the distinction between subjectivity and objectivity. So, even if chimpanzees and other nonlinguistic animals were incapable of experiencing surprise, this would not undercut the claim that the experimental work in the previous section demonstrates that they can grasp the appearance/reality distinction.

However, perhaps Davidson could argue that the necessary component of surprise is the recognition that the world has failed to line up with one's expectations or beliefs, and whether one's recognition is valenced is besides the point. This is a difficult position to maintain given Davidson's insistence that surprise is different from mere learning or updating (1982, p. 326). He needs to draw this line because an argument that animals without language cannot learn or update would clearly be false.⁴¹ However, let's presume for the moment that one can make a coherent distinction between surprise without valence and mere learning/updating. Even if such a distinction is possible, the claim that surprise requires language seems false. As Adina Roskies (2014) has pointed out, "there is clear and abundant empirical evidence that the ability to be surprised at the mismatch between the world and one's own representation of the world is independent of language" (p. 10).

Empirical results have shown that prelinguistic human infants tend to look longer at "stimuli that fail to correspond with their expectation" (Roskies, 2014, p. 10). For example, in an important set of experiments, Karen Wynn (1992) would show human infants, as young as five months, a number of toys before placing them behind a screen. The screen would then be lifted to show the infants either the same number of toys that they had been seen placed behind the

⁴¹ For those unconvinced, I refer them back to my description of the experiments with the amazons and crows in the prior sections. Furthermore, denying this claim would be taking a stronger stance than even Davidson does (1982, p. 326), and it would make it very difficult to even explain something as (purportedly) simple as conditioning.

screen or an expectation violating amount (such as when two toys were placed behind the screen, but only one was there when the screen was raised). Infants tended to stare longer at unexpected outcomes than expected outcomes. The same sort of experimental approach, where subjects look longer at results that violate expectations, has been successfully demonstrated and is frequently used in behavioural studies with nonhuman primates (Roskies, 2014, p. 10). So, it is not clear why we should take the ability to be surprised, or more generally, the ability to navigate the appearance-reality distinction as necessarily requiring linguistic capabilities.

Returning to Stich's argument, the second claim that animals would not recognize inner ear bones or whale collar bones as bones or exhibit any interest in them also seems to overstate its case and is open for empirical evaluation. First, it is unclear that most humans would immediately recognize inner ear bones as bones, so this seems like a strange standard. Second, it seems far from obviously true that dogs would not recognize non-standard bones as bones or not show any interest in them. This sort of claim could be tested: could a dog who has shown the ability to recognize bones generalize that ability to novel cases of non-standard bones? Given the lengthy discussion in this chapter of the ability of amazons and crows to generalize to novel cases, even where such cases require abstract categories, it cannot be a priori assumed that any animal who lacks linguistic capabilities will not be able to generalize to novel cases based on prior discriminations.

Finally, the first claim that dogs are not capable of grasping the origin or anatomical function of bones is maybe the most plausible if we limit ourselves to the case of house-bound, domestic dogs. However, it seems at least possible that dogs or other nonlinguistic animals that hunt or eat bodies with bones in them could have an understanding of where bones come from. In this case, the limitation on understanding the origin of a bone seems to be more based on the

types of epistemic opportunities available to domestic dogs and less to do with any innate epistemic limitation. The claim that dogs do not and cannot understand the anatomical function of bones seems more plausible, but even if we take it as true, it is not a knock-down objection. If there was a human that was completely scientifically illiterate, but she could distinguish bones from non-bones and could understand that other beings generally come with bones in them, then it seems unclear that we would immediately say that she lacks the concept BONE. The anatomical function of bones is after all an empirical/scientific claim about what bones are for, and being able to answer that question or even formulate it seems to presuppose at least some grasp of the concept BONE.

I have argued that all of these claims are empirically evaluable open questions and previously discussed empirical results from animal behaviour science show that it is not immediately obvious that dogs would not be able to meet them and that the experiments with chimpanzees, crows, and amazons discussed previously in this chapter show that such abilities do not necessarily require linguistic abilities. However, one might think that my interpretation of Stich is too specific and literal. Each of Stich's points could be seen as contributing to a broader claim about how language is required to meet the holistic conditions for grasping concepts.

Davidson (1982) makes this claim in terms of belief and thought; he writes:

We identify thoughts, distinguish between them, describe them for what they are, only as they can be located within a dense network of related beliefs. If we really can intelligibly ascribe single beliefs to a dog, we must be able to imagine how we would decide whether the dog has many other beliefs of the kind necessary for making sense of the first. It seems to me no matter where we start, we very soon come to beliefs such that we have no idea at all how to tell whether a dog has them, and yet such that without them, our confident first attribution looks shaky (pp. 320-321).

In other words, beliefs come in webs, and one does not have to follow any one thread of the web very far before one comes to beliefs that it would not make sense to attribute to a nonlinguistic

animal, such as a dog. Furthermore, since it is the content of these webs that constitutes and fixes the content of any particular belief, this result means that any attempt to attribute the initial belief will lack properly fixed content. To bring this back to Stich, one could take each of his claims as contributing to a similar central point: that grasping any one concept requires the grasp of many concepts. Each claim iterates some possible part of that web, and even if Stich has highlighted parts of the web that it at least seems possible for nonlinguistic animals to grasp, the central point remains: without language, an animal is not able to grasp a sufficiently large web of beliefs (and/or concepts) for us to ascribe specific contents to them.

This is a claim at the heart of NCH and one that is often used by normative conceptual holists to motivate conceptual holism. For example, in the previously mentioned quote from Sellars' letter to Chisholm, Sellars denies that nonlinguistic beings, including human infants, are capable of thought when he writes:

...the ability to have thoughts entails the ability to do *some* classifying, see *some* implications, draw *some* inferences...it is a bit strong to conclude that a white rat must be *classifying* objects because it reacts in similar ways to objects which are similar in certain respects, and in dissimilar ways to objects which are dissimilar in certain respects; or that an infant must be *inferring* that his dinner is coming because he waves his spoon when his mother puts on his bib (Sellars & Chisholm, 1958, p. 528).

Likewise, McDowell makes a similar argument with a greater emphasis on concepts and while using the reports of parrots as a contrast case:

The ability to produce "correct" colour words in response to inputs to the visual system (an ability possessed, I believe, by some parrots) does not display possession of the relevant concepts if the subject has no comprehension of, for instance, the idea that these responses reflect a sensitivity to a kind of state of affairs in the world, something that can obtain anyway, independently of these perturbations in her stream of consciousness. The necessary background understanding includes, for instance, the concept of visible surfaces of objects and the concept of suitable conditions for telling what colour something is by looking at it (1996, p. 12).

For Brandom, the connections between the concepts that construct such a web are inferential, so that one counts as grasping a concept if they can make the appropriate inferences from and to the application of said concept (Brandom, 2009a, p. 48). For Sellars, McDowell, and Brandom, the ability to navigate the semantic web that constructs and fixes any one concept requires linguistic capabilities. The linguistic holism of NCH is, in part, adopted because normative conceptual holists think that it helps them avoid the Myth of the Given. Normative conceptual holists claim that grasping a concept or having knowledge is never independent; it is always a matter of orienting oneself in the space of reasons (Sellars et al., 1997, § 36). Therefore, grasping any one concept or knowing any one proposition is dependent upon grasping many concepts and knowing many propositions (Brandom, 1994, p. 89). Content situated in the space of reasons is therefore never epistemically independent but always epistemically efficacious.

Brandom (2010a) uses this holistic approach to concepts to carve out his own version of the Davidson/Stich objection. In a response to Dennett, he writes:

...we are using terms that are necessarily parasitic on their applicability in their home language-game of talking about discursive intentional systems. ...nothing non- or pre-linguistic creatures can do can underwrite attributing to them intentional states whose contents are specifiable by the declarative sentences of some language – say, English. Nothing the dog can do can warrant our characterizing what it believes is buried near the tree is a bone, or that it is a tree that it is buried near. Those concepts have their boundaries delimited by a network of inferences that relate them to other concepts. And what a merely practically intentional creature can do cannot be sufficiently articulated and normatively controlled in the right way as to warrant literal attribution of states whose contents are specifiable by the use of those of our concepts (p. 306).

Brandom's objection is that even if nonlinguistic animals have intentional content, any attribution of our own concepts cannot line up with what they actually have because their mental lives fall outside of the conceptual webs constructed in our linguistic paradigm. Any attribution

of content is only meaningful in our own paradigm, meaning that conceptual content attributed to creatures that lack language is derivative at best (Brandom, 1994, pp. 150–152).

The problem for Brandom's objection is that once the relativity of content is pointed out, it's not clear why the opposing paradigms should be defined along the lines of linguistic and nonlinguistic content. No two speakers hold exactly the same set of beliefs, so it is unlikely that they will make the same inferences to and from the application of a given concept. Is it possible then that everyone is stuck in their own semantically solipsistic paradigms, misattributing content to other agents? Brandom (1994) tries to avoid this consequence by arguing that the expression of intentional content is perspective dependent but the content itself is objective (p. 497-498). Brandom writes that "if you want to understand what I say, you have to be able to associate with it a sentence that in your mouth expresses the same claim as the sentence uttered in mine" (p. 510). In order to properly ascribe content to another's words, one must be able to make *de re* ascriptions. *De re* ascriptions allow one to nail down the content of another's claim without suggesting they see it in exactly the same way (Brandom, 1994, pp. 594–596). This process does rely on language, so content ascriptions to the behaviour of dogs and crows will be derivative because the process can only go in one direction.

However, Daniel Whiting (2008) has argued that Brandom's account assumes the very thing it is supposed to explain: shared meaning. One can only determine the right substitution if one already grasps the meaning of words. Whiting (2008) writes:

On Brandom's account, *de re* ascriptions involve substitution. An example he offers is that of replacing a Zoroastrian's use of the expression 'the seventh god,' in an utterance of 'The seventh god has risen,' with the expression 'the sun.' Such a substitution would supposedly enable one to place her remark in an inferential context. ...however, the ability to so substitute the expression surely *presupposes* that one antecedently understands what the Zoroastrian is saying, or what her words mean; otherwise it is not clear how one could determine the appropriate substitution (p. 585).

If Whiting is correct, it seems like we cannot guarantee that our ascriptions of conceptual content line up with the inferences that others actually make – whether one is ascribing content to the linguistic utterances of other humans or the nonlinguistic behaviour of nonhuman animals. I suspect that this problem emerges for the same reasons that lead to the reductio in the previous chapter. Brandom is taking some linguistic content to be both epistemically independent and epistemically efficacious in order to get his project of fixing semantic content off the ground. One way out of this dilemma is to identify some inferences as constitutive of meaning and others as not. If it is possible to privilege some relations as fixing the meaning of a concept, then shared meaning is possible as long as more than one individual is able to grasp those constitutive relations.

A traditional way of doing this is to treat some inferences/connections as analytic and others as synthetic. The inferences that can be expressed using analytic statements are constitutive whereas the others are synthetic. Another approach, advocated by Sellars (1948) at one point, is to treat the inferential connections that support counterfactual reasoning as privileged. However, Brandom (1994) is keen to avoid “inegalitarian” approaches to meaning because he thinks that privileging a set of inferential connections, first, cannot make sense of the fact that individuals can fail to “agree about...large-scale empirical matters” but still have “a hold on the same concepts”, and second, a privileged set of inferential connections is not sufficient for supporting materially good inferences involving the concept (p. 634-635). The first complaint is that by privileging a set of inferential connections we will not be able to make sense of the fact that people can use the same concepts while having many different beliefs, including false ones, about those concepts.

For the latter complaint, materially good inferences are inferences that are good because of the meaning of the concept but are not necessarily logically valid. For example, the inference from the “ripeness of Winesap apples to their redness” (p. 635). Since materially good inferences constitute the meaning of a concept, being able to make them is part of grasping that particular concept. Brandom argues that privileging a set of connections cannot make sense of this because “various auxiliary hypotheses” can have an “inferential significance” for “a claim relative to a particular doxastic context” (p. 635). Those auxiliary hypotheses could only be included in the privileged set if “the repertoire in question contains conditionals corresponding to all the other materially good inferences” (p. 635). Such an approach would assume that all materially good inferences are actually just disguised (logically valid) conditional inferences; something that both Sellars and Brandom have convincingly argued against elsewhere (Sellars, 1953; Brandom, 1994, pp. 97–102).⁴² Brandom’s objection here is dense and difficult, but I think the idea is that privileging a set of connections because they are analytic or counterfactually robust is to privilege inferences that are deductively valid. However, there are good material inferences that are not deductively valid, meaning that they will not be included in the privileged set of inferential connections. But Brandom and Sellars have already presupposed that grasping a concept requires one to make materially good inferences that are not merely disguised conditionals. Therefore, any set of privileged connections that is exclusively made up of deductively valid inferences will be missing some of the inferences necessary for grasping the concept.

The challenge then is to pick out a privileged set of inferential connections that can accommodate at least some variability in beliefs about the concept and does not exclude

⁴² See Chapter 5 for a discussion of these arguments.

materially good inferences. In this section, I argue that the later Wittgenstein's notion of an internal relation can fix shared conceptual content while respecting those conditions. For the later Wittgenstein, "two concepts are internally related if in order to understand one I must also understand the other" (Hymers, 1996, p. 597). An example of an internal relation that Wittgenstein often returns to is the claim that 'white is lighter than black.' Wittgenstein asks "whom do we tell 'White is lighter than black'? What information does it give?" (Wittgenstein, 1983, §31). I take Wittgenstein's point here to be that such a question has a nonsensical ring to it because only someone who did not understand the concepts of WHITE or BLACK would need this information. Wittgenstein states that "an internal relation is never a relation between two objects, but you might call it a relation between two concepts. And a sentence asserting an internal relation between two objects...is not describing objects but constructing concepts" (Wittgenstein, 1989, p. 73). Internal relations can play a role in distinguishing between types of inferential relations because they tie what is necessary for understanding a concept directly to its constitution (as a concept). This would mean that not all possible inferences from and to a concept play a constitutive role, but those that are necessary for grasping the concept do.

Jakub Mácha (2015) additionally argues that internal relations "are timeless" and that they can only be expressed through analytic statements (p. 83-102). He argues that internal relations lack the temporality that external ones have, and that one can identify an internal relation by identifying which relations do not change with the passage of time. For instance, adding the words 'now' to the sentence 'white is lighter than black' to make 'white is lighter than black now' does not contribute to the meaning of the original sentence in the way that adding 'now' to the end of 'this car is painted a lighter colour than that car' does. When it comes to the colour of cars, one can change this relation by painting one or both of them different

colours, whereas I cannot make black lighter than white by lightening black because lightening black would just mean that it was no longer black. For this reason, Mácha takes internal relations to be exceptionless and therefore only expressible through analytic statements (p. 99-101). If Mácha is correct, then internal relations will not be able to avoid Brandom's objections to privileging some inferential connections over others because only deductively valid inferential connections will be privileged.

Michael Hymers' interpretation of Wittgenstein contrasts with Mácha's by centralizing the role of understanding. Hymers (1996) argues that understanding, for Wittgenstein, is:

...a set of abilities. To understand the meaning of a word is to be able to *use* the word correctly. But correctness now amounts to accord with public criteria that vary in precision from word to word and from context to context. And understanding the use of a given word requires understanding the uses of many other words, as they are embedded in complex sets of human practices (p. 597).

If learning a concept is the process of coming to understand a concept, then identifying internal relations will be dependent upon identifying what other concepts are necessary for learning a given concept. While some of this work can be done from the armchair, I suspect that empirical work will also be necessary for determining the actual paths that learners take when coming to understand a concept. Logical or definitional routes that can be expressed solely through timeless and exceptionless analytic statements will probably be involved at least some of the time, but learning is often a looser and less logical process. One reason for thinking this comes from work on artificial neural networks (ANNs) that are able to sort images. The features that an ANN will use to sort pictures with cats (for instance) from pictures without cats are not always the one's that one would likely expect from the armchair (Churchland, 1993, p. 670). Yet, even very simple ANNs are able to make novel and appropriate classifications (Ramsey et al., 1997, pp. 370–371). It also seems possible that contingent relations could play a role in learning or

understanding a concept, especially given that the initial sets of concepts will be developed through the causal process of recognizing instances of that concept, not by definitions or logical inferences.

Mácha (2015) tries to avoid counterexamples to his distinction between internal and external relations, specifically ones that involve conceptual change, by claiming that the “distinction is relative to a given language-game” (p. 101). So, for any given language game, some relations are internal and others are external, and which ones are internal and/or external will not necessarily carry over to another language game. I think that Mácha is on the right track here, but it is not clear how a relation can be exceptionless and timeless when indexed to a specific language game. Maybe the relation is taken as exceptionless and timeless within a given language game but not outside it, but this seems more appropriately described as the relation *seeming* exceptionless and timeless to participants of a given language game. This taking of a relation as exceptionless or timeless can be explained by integrating the idea of internal relations with holism.

I have argued that holists should use the distinction between internal and external relations to distinguish between inferences that are constitutive of a given concept and those that are not. There is a sense in which the individuation of concepts is difficult because understanding any one concept means that one has to understand additional concepts as well. These relations are part of what fixes the semantic content of a concept as applied through a judgement, experience, or so on. So, there is a sense in which it is inappropriate to consider these concepts as their own self-standing structures that can be easily individuated when attributing the grasp of them to someone. They constitute and are constituted by other concepts.

This is what leads to a sense of nontemporality and exceptionlessness. If a relation to another concept is part of the construction of that very concept, then there is way in which the subject must regard that relation as fixed in order to understand it. To see them as temporal or as admitting of exceptions is to regard them as not being co-constitutive because then one can exist independently of the other. Hymers (1996) explains:

The apparent indifference to temporality displayed by propositions that express internal relations is rooted in our tacit refusal to *let* these relations between our words change, not the imagined essence of ‘whiteness’ or ‘7’ and ‘5.’ It may seem that the laws of logic have a kind of inexorability that prevents white from becoming darker than black, and which ensures that 7 and 5 will always add up to 12, but “it is *we* that are inexorable in applying these laws” (p. 609).

If in order to learn or understand one concept, one has to learn or understand another, one is unlikely to see their non-relation as a particularly viable option. However, these relations are the background to our cognitive processes, so there is a good chance that, in most cases, we will not even notice their existence. However, just because they play this supportive and background role does not mean that they necessarily hold a necessary relation to truth. Relations that were once regarded as analytically true can face counterexamples or conceptually change. Just because one will likely be resistant to and find it difficult to break an internal relation does not mean that it cannot be done.

Since internal relations can include relations that are not counterfactually robust or deductively valid, there is room for Brandom’s material inferences. For example, learning or understanding the concept DOG may require learning or understanding what legs are. The concept of LEGS would then help fix the content of DOG insofar as it can be understood, learned, shared, and attributed, but it does not provide an equivalent exceptionless analytic statement. These connections can then support materially good inferences. For example, imagine that you are invited to your friend’s dog’s birthday party. You have not seen or met your friend’s dog before,

but you have been told that they have feet that are sensitive to the salt thrown on icy sidewalks. So, you decide to make them foot coverings to protect their feet. Since you are making them for a dog, you infer that you will need to make four. This is a materially good inference, even if it is not deductively valid or counterfactually robust (your friend's dog may be three-legged).

Furthermore, if the correct criteria for using a concept can vary from context to context, then we also have a way of making sense of the way in which “endorsement even of these privileged inferences can still vary from perspective to perspective” (Brandom, 1994, p. 635). Understanding is something that comes in degrees, and the level of understanding necessary to use a concept can vary depending on the differing practices it is used in. I, presumably, have an implicit grasp of whatever internal relations are necessary for understanding the use of the concept ICE in ordinary discourse, but I may lack a grasp of further internal relationships that are necessary for understanding its use in certain scientific discourses. However, there are limits to this. Brandom (1994) writes that “people can be counted as having radically false (nomologically precluded) views that are nonetheless genuinely *about*, say, arthritis” (p. 635). But there are points in which an individual lacks the necessary internal relations for shared meaning. Hyman (1996) writes that “someone who denied” that dogs generally have four legs “would be better interpreted as having misunderstood the term than as having a false belief about dogs” (p. 607).

So, we have a way to fix semantic content that can support materially good inferences and support variable levels of understanding and differing beliefs. Does this way of fixing conceptual content still depend on linguistic capabilities? Brandom argued earlier that we cannot attribute conceptual content to nonlinguistic animals because we cannot fix the semantic content of the concepts attributed. This is a result of holistic understanding of belief or concept fixing where the content of a concept and/or belief is constructed and maintained through a holistic web

of inferential relations. However, we can use the notion of internal relations to specify what inferential relations a nonlinguistic animal would need in order for us to attribute a given concept to them. The general rule of thumb that emerges from the holistic criteria set by internal relations is that one can only attribute a given concept to an individual if one can also attribute the other concepts that the concept has an internal relation with.

In order to show this principle in action, I now turn back to the empirical work on nonlinguistic animals' grasp of the concepts of SAME and DIFFERENT. What sort of relations would fix the concepts of SAME and DIFFERENT? I suspect that the internal relations for the concepts of SAME and DIFFERENT just are the relations they share with each other: in order to recognise that two objects share the relationship of sameness, one must also recognize that they do not share the relationship of difference on the relevant point of comparison. This relationship is more essential than the other sorts of responses one can have to an object. For example, my doubts about attributing the concept SAME to an individual seem more justified if they demonstrate a complete lack of facility with comparisons of difference, whereas they are less justified if they are based on an individual's inability to discriminate between red and blue objects (despite their ability to make many other sorts of same and different discriminations). To say 'In order for two things to be different, they cannot be the same' has the same bizarre ring to it that 'white is lighter than black' does. Just like the latter claim, while the former claim may seem like it is giving empirical information about objects, it is actually expressing a grammatical relationship between two concepts. Furthermore, there is empirical work that demonstrates that human children can use the words 'same' and 'different' or neither (Hochmann, 2021, p. 137). This result further suggests that these two concepts are internally linked.

However, there is recent empirical work that seems to suggest that human infants and pigeons discriminate between same and different in IMTS tasks by using the strategy ‘choose same’ or ‘avoid same’. Hochman (2021) interprets these results as showing that infants have the concept of SAME but not the concept of DIFFERENT. While these results are incredibly interesting, the question here is not whether one can make sameness discriminations without being able to make discriminations based on difference. The question is whether we can attribute the fixed semantic content of the concepts of SAME and DIFFERENT to the crows, parrots, and other nonlinguistic beings that are capable of solving tasks that seem to require their use. The holistic standard necessary is that it would be inappropriate to attribute the concept SAME to a subject unless we can also attribute the concept DIFFERENT and vice versa. It is possible to see here where the criterion of internal relations can still have some teeth. This principle means that, unlike Hochman, we cannot attribute the concept SAME to the infants or the pigeons in these experiments. They have not provided evidence for attributing the concept DIFFERENT, so attributing the concept SAME to them would be a semantic overreach.

What sort of empirical result would one expect if a subject grasped the internal relation between the concepts of SAME and DIFFERENT? One would expect similar accuracies or inaccuracies for both same and different transfer trials. This is exactly the result the researchers found for same and different transfer trails with Clark’s nutcrackers. Magnotti et al. (2015) states, “there was no response biases or significant accuracy trends during transfer testing” (p. 2). Additionally, the ability of crows and parrots to recognize that the similarity shared between two cards is the relation of difference demonstrates an ability to use both relational concepts in the same task. The avian subjects in the studies all showed facility with both concepts, so we can

attribute the concepts of SAME and DIFFERENT to them without worrying about semantic overreach.

Where we are left is that fixing the content of concepts will require both theoretical and empirical investigation both into what a concept's internal relations are and whether a given subject is able to grasp them. We can think of this as a cluster theory of concept attribution where the cluster for any particular concept is not the entire web but only the parts of the web that are internally related. Not accepting this result risks a very similar sort of absurdity for NCH as the one detailed in the previous chapter. If one has no non-arbitrary way to limit what parts of the web will count, then it seems like one is forced to say that the entire web is necessary. But if that is the case, then the limited epistemic powers of even humans with linguistic capabilities should make us question whether anyone has ever grasped a concept.

5. Anti-Representationalism

The final objection that I will consider in this chapter is an objection to the Sellarsian framework itself. While Sellars' account of picturing demonstrates a willingness to include representations in his account of the cognitive processes of animals (human and nonhuman alike), many philosophers, from Wittgensteinians to enactivists, will be far less comfortable with this sort of attribution. In response to worries about representations, I will argue that (a) the central argument in this chapter can function without attributing representations, but (b) representational approaches in cognitive science are superior to non-representational approaches, and (c) the types of representations in Sellars' account do not come into conflict with the arguments made by antirepresentationalists, many of which are inspired by Sellars' own argument against the Given.

Since I recognize that the arguments offered below are unlikely to move a dyed in the wool anti-representationalist, I want to first emphasize that few of the arguments above hang on the inclusion of representations in the explanatory framework. What matters is having a way to distinguish the sorts of abilities that from a psychological nominalist's perspective require concepts and the sorts of abilities that do not. I take picturing relations to be a particularly useful way to work out this distinction and Jumblese as a useful means of illustrating the sorts of things that picturing can and cannot do. If one wants to remove picturing from the Sellarsian framework, as some Sellarsian interpreters have, such as Brandom (2014), McDowell (2009), Rorty (1988), and Rosenberg (1980), then the story can be redescribed without picturing. The essential point is that if the psychological nominalist is right that awareness of abstracta, including relations like same and different, requires conceptual capabilities, then subjects that demonstrate such an awareness must have conceptual capabilities. I have argued that the success of nonlinguistic animals at RMTS tasks demonstrates such an awareness, and therefore, it is possible to have nonlinguistic conceptual capabilities.

However, I think that Sellarsians who exclude picturing from their framework are in even worse shape than Sellars when it comes to trying to resist this conclusion. Generally, these theorists have some form of behaviourism in mind when it comes to nonlinguistic animals. For example, as mentioned earlier, Brandom (e.g., 1994) often compares interactions between human infants/nonhuman animals and environmental stimuli to the way that iron rusts when exposed to moisture (pp. 88-89). If psychological nominalism is correct, then the subject cannot react to the relations of same and different in the way that iron reacts to moisture, even if we take picturing off the table. Same and different are not objects in the environment to react to, so the behaviourist cannot fall back on this sort of explanation. Therefore, it seems that even with the

exclusion of picturing, normative conceptual holists who accept psychological nominalism will have to attribute conceptual abilities to nonlinguistic animals that are able to succeed at RMTS tasks.

While Brandom (2013) describes his own project in opposition to representationalism, he is not, in contrast to Rorty, an eliminativist about representations. Instead, he takes the sin of representationalism to be taking representations with semantic content as “explanatory primitives” (p. 93). Brandom argues that representations are harmless if one shows them as emerging from a more general account of normativity and conceptual capabilities. While Brandom’s account may render the semantic content of representations less mysterious, it is no help in deflating the case I have made for nonlinguistic conceptual capabilities because representations for Brandom depend on already having conceptual capabilities, and furthermore, since he bases those representational capabilities on sophisticated linguistic capabilities, he cannot use them explain the success of nonlinguistic animals at RMTS tasks.

Some Sellarsian interpreters who want to hold on to picturing but are uncomfortable with representationalist language have tried to discuss picturing in non-representationalist terms. For example, Johanna Seibt (2009) suggests that we replace the term ‘animal representational systems’ with ‘orientation systems’ because “the term ‘representational’ unhappily resonates with the presuppositions of the classical Cartesian notion of representation” (p. 254). She then describes orientation systems as composed of the same sorts of causal relations between objects and linguistic tokens that Sellars would regard as the picturing relation between basic empirical statements and the objects they picture. I would hardly want to stand in the way of soothing one’s Cartesian anxieties, but I find it difficult to consider the tokens involved in these systems as something other than representations.

The ‘orientation systems’ fit John Haugeland’s widely used definition of representational systems. Summarizing the conditions that Haugeland (1998) argues a system must meet in order to count as representational, Andy Clark and Josefa Toribio (1994) write:

- (1) It must co-ordinate its behaviors with environmental features which are not always ‘reliably present to the system’ via some signal.
- (2) It copes with such cases by having something else (other than the signal directly received from the environment) ‘stand in’ and guide behavior in its stead.
- (3) That ‘something else’ is part of a general representational scheme which allows the ‘standing in’ to occur systematically and allows for a variety of related representational states (p. 404).

Haugeland’s definition of a representational system is meant to cover a wide array of phenomena, including both classical and connectionist cognitive architectures. So, while a wide range of structures will fit under Haugeland’s definition of a representational system, Clark and Toribio (1994) argue that these structures will have distinct advantages over the types of frameworks offered by anti-representationalists.

Clark and Toribio point out that while the success of anti-representational programs in robotics, such as Rodney Brooks’ (1997) subsumption architecture and Barbara Webb’s (1996) cricket robots, are impressive, they are arguably irrelevant when it comes to dealing with the sorts of problem domains that representations are presumed to be necessary for. Clark and Toribio (1994) call these domains ‘representation-hungry problem domains’ which they define as:

- (1) The problem involves reasoning about absent, non-existent, or counterfactual states of affairs.
- (2) The problem requires the agent to be selectively sensitive to parameters whose ambient physical manifestations are complex and unruly (for example, open-endedly disjunctive) (p. 419).

They argue that these domains cannot be considered the mere tip of the cognitive iceberg because:

Non-language using animals (e.g., chimps hunting in packs) seem to anticipate the movements of pursued prey and to engage in counterfactual reasoning. A nice and well-documented example of the latter concerns grooming behaviors in rhesus macaques (monkeys). These animals seem able to make quite sophisticated judgements concerning the motivational states of their peers. In combat situations, support from a high-ranking female is often decisive. Monkeys who groom such females tend to receive such support. Hence, it is wise to avoid contests with macaques who have been seen grooming these females. Such avoidance behavior is indeed often found, and persists long after the visual stimulus (witnessing the grooming event) has ceased. Knowledge of the likely behavior of the high-ranking female in combat situations that have not yet arisen thus seems essential to the social organization of the group. Yet a good explanation of such behaviors will *prima facie* need to acknowledge some kind of internal representation of positions in the social hierarchy, and storage in memory of knowledge concerning past grooming events (p. 419).

In other words, explaining the behaviour of nonlinguistic animals seems to require representations, so representations cannot be regarded as only necessary for the most sophisticated forms of linguistic cognition.

Clark and Toribio (1994) point out that attempts to avoid including representations in explanations of behaviours in representation-hungry problem domains often end up recreating the very cognitive phenomena that they are trying to deny. For example, dynamical systems accounts that use the “dynamics of basins and attractors” within a state space (Skarda & Freeman, 1987, p. 184) will also likely count as representational under Haugeland’s definition.⁴³

The claim that a dynamical systems account of a cognitive process rules out the need for

⁴³ Dynamical systems theory is an antirepresentationalist approach to cognition that is often contrasted with computational functionalism. Timothy Van Gelder (1997) argued that a Watt Governor can provide an alternative model for cognition where operations are continuous instead of discrete, do not involve representations, and involve constant interaction through time instead of the sequential operations that one finds in something like a Turing machine. This approach means that differential equations can be used to understand cognitive processes modeled as the continuous change of variables through time. Basins and attractors refer to the way that these dynamical processes can be modeled as existing in a theoretical space where behaviours start from a set of initial conditions (basins) and are drawn towards other sorts of behaviours (attractors) given those initial conditions and the makeup of the space. Clark and Toribio’s (1994) point is that when these theoretical tools are used to explain how dynamical systems can deal with representation-hungry problem domains that they end up falling within Haugeland’s definition of a representational system.

representations is only really justified if one defines representational systems narrowly as the sorts of classical architectures that operate on discrete symbols. Ironically, enactivist approaches to the mind – that take the mind as a fundamentally embodied phenomenon – often deal with representation-hungry problem domains by emphasizing the role of language (e.g., Kiverstein & Rietveld, 2018). These sorts of approaches will have difficulty dealing with the representation-hungry problem domains that nonlinguistic animals face, and it is worth asking if language is truly playing a non-representational role in these accounts given Haugeland’s liberal definition.

The animal representation systems discussed by Sellars have the advantage of being able to deal with at least some of the domains described by Clark and Toribio as representation-hungry problem domains. Tokens that stand in causal relations with objects in the world can help an animal keep track of other animals or objects (and their characteristics) that are not in their immediate sensory impressions. Sellars regarded the attribution of internal mental states, including representations, to be on par with the use of unobservables in any other scientific domain. DeVries (2005) writes that Sellars rejects behaviourism, including logical behaviourism, because “he takes the prospect of an empirical, scientific psychology seriously. Like any other empirical science, it must have the freedom to postulate for explanatory purposes unobservable constructs that are not definable in observation terms” (p. 175). Getting a grip on the nature of those unobservables is done by using models, and the theory progresses by empirically working out the ways in which the model fits or does not fit (p. 150).

Does this form of representationalism open Sellars up to the sorts of epistemological worries that motivated Rorty’s eliminativism about representations? I am not convinced that it does. Rorty (1988) describes Sellarsian picturing as “an unfortunate slide back into representationalism” (p. 216) that reopens the “gates to skepticism” (p. 219). However, as

Brandom (2013) points out, much of Rorty's argument against representationalism was borrowed from Sellars' own arguments against the Given. Brandom summarizes Rorty's case against representations as an argument against "epistemically privileged representations" that are "given in sensory experience [with] cognitively transparent meanings" (p. 92). The problem with these types of representations is that:

...the privilege in question is essentially magical in nature. Representations of these sorts are understood as having a natural or intrinsic epistemic privilege so that their mere occurrence entails that we know or understand something. They are self-intimating representations: having them counts as knowing something. But there is no way to cash out this sort of intrinsic authority in terms of the practices of using expressions or interacting with each other or our world (p. 92).

In other words, they are epistemically independent and epistemically efficacious. However, the sorts of picturing relations discussed by Sellars are not epistemic at all; they are causal relations between mental tokens and objects in the world. For Sellars, a system has knowledge if it is part of an inferential space of reasons where the relevant relations are normative. Pictured tokens are not Given because, lacking epistemic status, they are neither epistemically independent nor epistemically efficacious. Metarepresentations are not Given either because they are caught up in grasping inferable relations between concepts and the is/looks distinction, which means that they are epistemically efficacious, but not epistemically independent. If one can talk of representations while avoiding the sorts of epistemological problems that motivated Rorty's antirepresentationalism, then it is unclear why such talk should be avoided altogether given the significant advantage it provides in constructing explanations for representation-hungry problem domains.⁴⁴

⁴⁴ It is also worth noting the way in which neopragmatic eliminativism about representations trips over its own methodological motivations. Rortyan neopragmatism takes the everyday practices of speakers outside of the specialized realm of philosophy seriously. But as Simon Blackburn (2013) and others have pointed out, talk of representations is heard well outside the sorts of conceptual confusions that supposedly emerge solely from the

6. Conclusion

In this chapter, I have claimed that there is an argument from Sellars' psychological nominalism to the recognition of nonlinguistic conceptual capabilities. The success of nonlinguistic subjects at RMTS tasks demonstrates that they have an awareness of the relations of same and different. SAME and DIFFERENT are second-order concepts, meaning that they cannot be pictured by the mere arrangement and qualification of names. Therefore, like the concepts of MEANING and REFERENCE, they operate on the meta-level of representational systems. SAME and DIFFERENT operate over predicates, so any being that is able to use them must have metarepresentational capacities. Since Sellars' psychological nominalism takes capacities that operate at the meta-level to be conceptual capabilities, the success of crows and amazons at RMTS tasks demonstrates that they have conceptual capabilities.

I also considered three possible objections to this argument. First, I considered the objection that conceptual capabilities require knowledge, and no nonlinguistic animal is capable of meeting Sellars' conditions for knowledge. In response, I argued that a Sellarsian account of knowledge only requires that one have an implicit grasp of the is/looks distinction and pointed to work with chimpanzees that suggests that nonlinguistic animals are capable of navigating this type of distinction. Second, I considered the objection that it is not possible to ascribed fixed semantic content to nonlinguistic animals. In response, I argued that most of the reasons provided for this claim are overstated and empirically evaluable. In addition, I argued that Wittgenstein's understanding of an internal relation can provide ways to identify the necessary conceptual connections for grasping a given concept, and the crows and amazons discussed in this chapter meet that condition for SAME and DIFFERENT. Third, I considered an objection to

tangled talk of philosophers. Eliminativism about representation talk altogether, then seems to step beyond these sorts of ordinary language motivations to a more radically revisionary type of philosophy.

representationalist approaches themselves. In response, I suggested that the central argument can still work even if it is stripped of its representationalism, but that representationalist approaches have the advantage of being able to explain behaviour in representation-hungry domains.

Furthermore, the types of representations discussed by Sellars avoid the sorts of epistemological motivations for banning them from accounts of cognition, many of which were adapted from Sellars' own arguments against the Given. While I think the arguments that I have offered in this chapter are compelling, both their conditional nature and the narrowness of their scope means that they cannot be fully convincing until a better sense of how these capabilities fit into a wider account of the mind is given. I turn to considering the ways in which nonlinguistic conceptual capabilities can be used to construct reasons, make inferences, and be part of the normative space of giving and asking for reasons over the next three chapters.

Chapter 4

Making it Nonlinguistically Explicit: Awareness, Understanding, and Reasons

Daniel Dennett (2014) has long argued that evolution functions by blindly tracking and using reasons. He writes that this is “competence without comprehension” or design without a designer (p. 54). This means that reasons existed as “free-floating rationales” long before anyone had represented a reason (p. 54). According to Dennett, reasons that animate the behaviour of nonlinguistic animals are free-floating rationales. He writes that “we language-endowed animals are the only ones who clearly have both the equipment and the proclivity for representing reasons to each other and, derivatively, to ourselves” (p. 58). In other words, the behaviour of nonlinguistic animals is as non-intentional as the processes of natural selection, whereas the ability of humans with linguistic capabilities to be ‘moved’ by the reasons that we represent to ourselves and others explains what makes humans unique among other animals. According to Dennett, it is not so much that nonlinguistic animals lack mental content, it is that they lack the ability to relate to or manipulate that mental content by representing it as a reason. Being able to represent content as a reason requires that one can put said content into the right sort of form. That form is explicitness, meaning that only explicit content can be represented as a reason, and consequently, only explicit content can appropriately be called conceptual (Dennett, 2008, p. 159).

Like Dennett, normative conceptual holists regard the ability to make, use, or have explicit content as necessary for being able to have reasons, use concepts, or act intelligently. Brandom (1994) likely emphasizes this ability the most in his arguments that conceptual capabilities are defined by the ability to make content explicit. However, an emphasis on the importance of explicit content extends beyond NCH. For example, one of the main motivations

for Classical AI was the idea that reasoning and/or intelligence always involves explicit representations (Haugeland, 1997, pp. 19–20). Theoretical approaches that place an emphasis on explicit content usually take explicitness to be a form that content can take, and access to that form is thought to be only available through language. If this claim is correct, then attributing reasoning, conceptual, or intelligent abilities to nonlinguistic animals is either inappropriate or at best an instrumental heuristic.

In this chapter, I argue that linguistic form is neither necessary nor sufficient for content to be explicit, and I motivate an account of explicitness where the relevant form is defined by the relations it makes possible between subjects and content. To show that linguistic form is not sufficient for explicitness, I argue that awareness and understanding are both necessary for explicitness. Since subjects can be unaware of or fail to understand content even when it is in a linguistic form, linguistic form cannot be sufficient for content to be explicit-to or -for a subject. To show that linguistic form is not necessary for explicitness, I argue that demonstrations, even when they are nonlinguistic, can function as reasons and any content that can function as a reason should be regarded as explicit content. These arguments lead to a definition of explicitness where any content that is in a form that is capable of facilitating a sufficient level of awareness and understanding for the relevant subject can be regarded as explicit content to/for them.

Finally, I argue that ease of use and variety of modes of use (as suggested by Andy Clark (1997)) can be used as empirical markers for awareness and understanding. If nonlinguistic animals are able to behave and/or communicate in ways that make content easier to use and/or demonstrate a variety of modes of use, then there is reason to think that they are capable of making content explicit to themselves and/or others. To show this, I argue that observatives,

gestural communication (especially elaboration in response to communicatory failure), pantomime, and pointing all make content easier to use. In addition, teaching and play behaviour demonstrate a variety of modes of use. While how to understand any one instance of these behaviours can be controversial, taken together, they strongly suggest that nonlinguistic animals are capable of making, using, and having explicit content.

1. Explicitness

A number of philosophers have claimed that the ability to make, use or have explicit content is only possible for linguistic beings and is a necessary condition for many other cognitive capabilities, such as reasoning and/or conceptual capabilities. For example, Brandom (1994) claims that in order for content to be conceptual, one has to at least be capable of making it explicit.⁴⁵ Explicitness is usually thought of as a form that content can take. So, for Brandom, explicit content is exclusively identified with a specific type of linguistic utterances or marks. Linguistic utterances or marks count as explicit if they can function as a reason. And Brandom claims that a reason is always an assertion because assertions can both provide a reason and have reasons provided for them (p. 158).

⁴⁵ In *Articulating Reasons*, Brandom (2009a) makes a stronger claim and identifies conceptual content as explicit content. He writes that “explicitness is identified with specifically conceptual articulation, expressing something is conceptualizing it: putting it into conceptual form” (p. 16). While this claim is arguably already implicit in his earlier identifications of explicit content with propositional content, I worry that this sort of claim walks Brandom dangerously close to the Given and is potentially inconsistent with his other claims about the role that implicit content plays in semantic and cognitive processes. For instance, Brandom takes implicit content to play a role in fixing the meaning of a concept. That one can infer that an object is not green from the fact that it is red is part of what it means for an object to be conceptualized as red. However, this inferential link is implicit because it is clearly not explicitly part of a statement like ‘the ball is red.’ But Brandom’s stronger claim would seem to rule out the possibility of the implicit content being conceptual. If it is not, then the implicit content seems epistemically efficacious but nonconceptual, so it would be Given content. Therefore, I think it is better to treat the claim as: one is only capable of grasping conceptual content, if they are capable of making content explicit.

Brandom (1994) contrasts assertions with actions which he claims can have reasons provided for them but cannot be used as reasons themselves (p. 171). So, nonlinguistic actions are not explicit because they cannot be in the form of a reason/assertion. Brandom writes:

To express something is to make it *explicit*. What is explicit in the fundamental sense has a *propositional* content - the content of a claim, judgment, or belief (claimable, judgeable, believable contents). That is, making something explicit is *saying* it: putting it into a form in which it can be given as a reason, and reasons demanded for it. Putting something forward in the explicit form of a claim is the basic move in the game of giving and asking for reasons (p. xviii).

Dennett (2008) comes to a similar conclusion when he argues that nonlinguistic animals are able to make *seemingly* sophisticated decisions by establishing relations through associative forms of thinking. While these decisions may seem sophisticated, there is no need to take such relations as conceptual or driven by reasons that nonlinguistic animals can represent to themselves, because only beings with linguistic abilities will be able to interact with mental content in the right way for it to count as explicit. He writes:

...no languageless mammal can have the concept of snow in the way we can, because a languageless mammal has no way of considering snow "in general" or "in itself." This is not for the trivial reason that it doesn't have a (natural-language) *word* for snow but because without a natural language it has no talent for wresting concepts from their interwoven connectionist nests and manipulating them (p. 159).

For both Brandom and Dennett, the ability to put content in linguistic form is what distinguishes concept users from non-concept users. While, for Dennett, language is necessary for detaching and manipulating content in ways that will allow for it to count as conceptual and then represented as a reason, for Brandom, only linguistic performances can have the propositional content necessary to be counted as a reason/assertion.

Taking explicitness to be defined as a form that content can take can also be found in the work of philosophers who place less of an emphasis on language. For example, Mariela Aguilera

and Federico Castellano (2020) argue that maps have both explicit and implicit content. Maps, they argue, have a predicative structure that can be broken down into: “on the one hand, explicit predicates determined by the constitutive elements of the system (e.g., circles); on the other hand, implicit predicates determined by the system’s structural properties and their rules of combination” (p. 11). So information that is represented by specific marks on the map can be regarded as explicit (e.g. a circle that represents a city), whereas information that can be gleaned by considering the relations between those specific marks can be regarded as implicit (e.g., the relative distance between marks on the map that represents the distance between what those marks represent). Content that is explicit in a map can be used by the subject to make inferences without translating mapped content into linguistic content. For example, they claim that one can use a subway map to make inferences about what subway station one needs to travel to without translating the map into a linguistic form. Such a translation “would be redundant...since this information is already explicit in the map” (p. 24).

While Brandom, Dennett, and Aguilera and Castellano have a number of conflicting commitments, what they share is the idea that explicitness is a matter of form. In the next two sections, I will argue that linguistic form is neither necessary nor sufficient for making content explicit. Starting with the latter, I argue that content can be in the type of linguistic form that Brandom and Dennett identify as explicit, but nevertheless fail to be explicit-*to* a subject. The lesson this argument provides is that an identified form is not sufficient for determining when a subject is making or taking content as explicit. However, a normative conceptual holist could counter that linguistic form is still necessary for taking content as explicit. In response, I argue that some nonlinguistic actions can function as reasons, and since only explicit content can count

as a reason, these nonlinguistic actions must be explicit content. Therefore, language is not necessary for explicit content.

2. Linguistic Form is Not Sufficient

Intervening in the classical AI vs. connectionism debate, David Kirsh (1990) and Andy Clark (1997) have both argued against the idea that explicitness can be identified by a content's form. On its most basic level, this debate was about whether classical computers, such as Turing machines, or artificial neural networks were a better model for understanding how the mind works. One of the major claims that motivated classical AI was the idea that reasoning involves operations on explicit representations. Jerry Fodor (1987) put this bluntly in his famous motto that there is "no intentional causation without explicit representation" (p. 25). One of the early arguments against connectionism was that there was no room for explicit representations in parallel-processing networks that distributed the representations across the network. According to philosophers like Fodor, this meant that connectionist architectures could not do anything that looked like human reasoning. However, as Clark (1997) points out, a clearer understanding of what makes a representation explicit is required before it is possible to evaluate this objection.

To do that, Clark (1997) turns to Kirsh's (1990) process-oriented approach to explicitness. According to Kirsh (1990), the "bewitching image of a word printed on a page" misleads us into thinking that explicitness is about the form information takes instead of the ways in which it can be used (p. 350). Kirsh motivates his process-oriented approach to explicitness by pointing out that the intuitions about what makes something explicit are actually in conflict. Take for example the set of words: {cat, dog, fly}. The word 'cat' seems to be an explicit part of this set because it is "'on the surface' of [the] data structure" (Clark, 1997, p. 382). But linguistic form is not sufficient for explicitness because 'cat' would not be available to a human subject if it were

heavily encrypted or hidden in an enormous set of words. In other words, it seems like explicitness is not just about the form of the content itself, but also the informational context of the content and the ways in which the subject's own processing abilities limit or allow the subject to interact with it. In his discussion of Kirsh's argument, Clark (1997) states that:

It very quickly begins to look as if the structural notion of explicitness is trading on a *processing* notion which ties explicitness to the ease with which information is recovered and put to use. Being the kind of processor we are (as human readers of text) we find it easier to extract 'cat' information from a typed list than from a jumbled-up tangle of words. However, if we were a different kind of processing tool, we might have no difficulty with the tangle – hence the 'cat' information ought (relative to such a tool) to count as explicit. We are thus drawn to a second set of criteria, according to which information is explicit if it is ready for immediate use by an embedding system (p. 382).

Therefore, Kirsh (1990) defines explicitness as being determined by "how quickly information can be accessed, retrieved, or in some other manner put to use" (p. 361).

However, Clark (1997) argues that ease of use is not sufficient for identifying explicitness because ease of use alone cannot distinguish explicit representations from mere reflexes (where presumably there would be no need for content at all) (pp. 384-385). So, in order for content to be explicit to the subject, the subject must also be able to put the content to a variety of modes of use. Clark writes that a "human being who knows that dogs have fur can use the information to plan ways of making fur coats, to irritate allergenic neighbours, or predict musty smells in the rain, and all the rest" (p. 386). In contrast, Clark claims that a rat who has learned to reliably distinguish between safe and poisoned food meets Kirsh's condition for explicitness, but the representation is at best implicit because the rat is unable to use the information that poison smells such and such a way for tasks beyond food discrimination (p. 386). Therefore, the explicitness of a representation depends upon both ease of use and the variety of modes of use it can be put to.

However, these conditions do not set up clear boundaries for when a representation is explicit or implicit. Clark (1997) argues that process-oriented accounts must treat explicitness as lying on a continuum (p. 384). Both ease of use and variety of modes of use are conditions that admit of degrees. Whether or not a specific representation is explicit or implicit is going to be fuzzy and likely contentious. It also shows why explicitness and language are often connected for humans with linguistic capabilities. Language makes information easy to use for humans with linguistic capabilities, and the defining features of language, such as systematicity and recursive embedding, make linguistic content available for a variety of tasks (Clark, 1997, p. 383).

Kirsh's and Clark's accounts of explicitness might initially seem radically distinct from the type of explicitness that Brandom and Dennett are interested in. For example, the word 'cat' in the set {cat, dog, fly} is not propositional, nor, as a single word in an unordered list, is it obviously something that is assertable. However, I think that an argument parallel to the ones provided by Kirsh and Clark can show that linguistic form alone is not sufficient for the type of explicitness that Brandom and others are interested in. Let's briefly return to Aguilera and Castellano's (2020) hypothetical example of a subject reasoning through the information provided by a subway map. Ignoring for the moment whether the subject is able to directly use explicit cartographic information in her inferences without translating the map into linguistic propositions, the explicitness of the map's information will still depend on the subject's (processing) abilities.

The subject will need to be able to do two things in order for the map's content to be explicit to her. She will need to be able to sort and make sense of the information in front of her. If she finds the map overly complicated and is unable to sort the relevant information from the irrelevant information, then she will not be able identify what features of the map can function as

a premise in her inference. Furthermore, if she does not understand the information provided by the map (maybe she has never seen a subway map before), then once again the information will not be inferentially available. This does not mean that the form is entirely irrelevant. The form that the content takes will still play a role in determining whether a subject can take it as explicit because it has to be in a form that the subject can both be aware of and understand. This is possible to see in more straightforwardly linguistic cases as well. If someone states a claim in German to someone who does not understand German, then in no way is that content being made explicit to them, even if it is propositional.⁴⁶ Or if a very long mathematical proof is provided to someone who is not capable of synthesizing all of the relevant information, even if they could understand each step individually, the proof has not been made explicit to them.

The fact that explicitness is a relative concept that will depend on the types of interactions that a subject has or is capable of having with the content also follows from Brandom's (1994) score-keeping model of semantic content that takes assertions as the "undertaking of a commitment" (p. 188). Brandom thinks that making an assertion does two things: first, it licenses audience members to make further assertions, and second, it undertakes a "responsibility...to show that they are entitled to the commitment expressed by their assertions, should that entitlement be brought into question" (p. 173). For Brandom, commitments and entitlements are social normative statuses. Social statuses are "instituted by individuals attributing such statuses to each other, [and] recognizing or acknowledging these statuses" (p. 161). So a performance can only be regarded as a commitment or entitlement if others or an audience regard that performance as a commitment or entitlement. Undertaking a commitment "is to do something

⁴⁶ One might want to claim that accompanying gestures could help facilitate understanding, but notice that in such a case, the form that is doing the work is not the linguistic proposition but whatever form the accompanying gestures are in.

that makes it appropriate to *attribute* the commitment to the individual” (p. 162), and that undertaking entitles or licenses others to have certain expectations of the individual who made it.

Asserting is then a social practice that is a part of a game...

...in which each participant exhibits various deontic statuses – that is, commitments and entitlements – and each practically significant performance alters those statuses in some way. [...] Practitioners take or treat themselves and others as having various commitments and entitlements. They keep score on deontic statuses by attributing those statuses to others and undertaking them themselves. The significance of a performance is the difference it makes in the deontic score – that is the way in which it changes what commitments and entitlements the practitioners, including the performer, attribute to each other and acquire, acknowledge, or undertake themselves (p. 166).

If making something explicit is understood as a basic move in this social practice, then linguistic form alone is not sufficient. It has to be available to practitioners of the game. In order for a performance to count as a move in the game, they have to be aware of the performance and understand it. As someone who does not speak German, I am not capable of recognizing assertions made in German as a basic move in the game of giving and asking for reasons. It might be tempting to respond that, as a non-German speaker, I am at least capable of recognizing that the game is being played (in German) even if I cannot participate in that specific iteration of the game. However, this is not true. Even if I am capable of distinguishing German from similarly sounding gibberish (which I have my doubts about), I am not capable of distinguishing assertions from other forms of speech, such as questions or commands.⁴⁷ So, for Brandom’s inferentialist understanding of semantic content, form alone is not sufficient for identifying explicit content. Instead, we will also need to consider the ways in which individuals relate

⁴⁷ One might argue that I can make these sorts of discriminations based on vocal patterns/sounds, such as a rising voice at the end of a question or the authoritative sound of commands versus the more neutral presentation of claims. Now these sorts of sounds may be helpful in some contexts, but I will misidentify these basic linguistic moves if I am observing someone who is upspeaking or someone who has a commanding presence. Furthermore, notice that even if these vocal inflections were sufficiently reliable, I would not be identifying reasons based on the type of form that is supposed to be doing the work (assertional/propositional form).

to/interact with content and the ways in which they are capable of relating to/interacting with content.

The two relevant factors that fall out of the preceding discussion are awareness and understanding. Explicitness is always explicitness-*to* or *for* a given subject, and content can only be explicit-to a subject if the subject is capable of both being aware of and understanding the content. These two abilities line up well with the conditions proposed by Kirsh and Clark. For instance, ease of use will be helped by or even require awareness. Content that one is capable of being aware of is content that will facilitate ease of use. For the subject using the subway map, she must be able to notice certain features of the map for them to play a role in her reasoning. If she does not look at a relevant part of the map, then that part of the map cannot be put to the relevant type of use. Likewise, understanding is related to a variety of modes of use. Understanding is often linked to inferential promiscuity (e.g., Brandom, 2009a, p. 48). One must be capable of making a variety of inferences about a concept in order to count as understanding the concept. Therefore, understanding will facilitate a variety of modes of use by allowing for the sorts of inferences that will lead to different types of use.

In addition, awareness and understanding cannot be fully understood apart from one another. For a holist, if one does not understand something, then there are aspects of the content that are unavailable to them (as unavailable as failing to notice a section of the map). For example, what sorts of inferences lead to or follow from ‘dogs have fur’ are (for Brandom) what fix the semantic content of the assertion. In other words, in order for one to be fully aware of something, they must also understand it. And in order for one to understand something, they must be at least implicitly aware of the inferential norms that structure its content. So understanding also supports ease of use because the sorts of awareness that make content easier

to use will be bolstered by conceptually understanding the content. And awareness supports variety of modes of use because a greater variety of modes of use will be available if one is aware of them.

3. Linguistic Form is Not Necessary

If the arguments above work, then linguistic form alone is not sufficient for explicitness. Awareness and understanding are also needed. However, the normative conceptual holist can respond by admitting that linguistic form is not sufficient for explicitness but still argue that linguistic form is necessary for explicitness. According to Brandom (1994), to make something explicit is to put it in the form of a reason (p. xviii). Given Brandom's distinction between reasons and actions, I suspect that this relationship should be understood biconditionally: content is explicit if and only if it is in the form of a reason. This means not only that making something explicit is putting it in the form of a reason, but additionally, putting something in the form of a reason makes it explicit. Reasons play a foundational role in the game of giving and asking for reasons because reasons can perform both functions: they can have reasons given for them, but also can provide reasons for other assertions (p. 158). In contrast, actions cannot provide reasons; they can only have reasons offered for them (p. 171).

The identity relation between explicitness and reasons means that one example of a nonlinguistic reason will be sufficient to show that language is not necessary for explicitness. Here is one, though the example is also generalizable to other types of demonstrations. If Justin asserts that he can tie his shoes, I can ask for a reason for thinking that he can tie his shoes. A perfectly legitimate response, which can provide a reason for thinking that he can indeed tie his shoes, would be a demonstration of his shoe-tying ability. Such a demonstration would provide a reason for believing the claim 'I [Justin] can tie my shoes.' The act of tying one's shoes is

nonlinguistic. Reasons can be provided for the act (my initial disbelief about his shoe-tying capabilities), but importantly, it is a performance that is also reason-giving. It is a perfectly acceptable way to respond to my request for a reason to believe his claim. It can perform both roles in the game of giving and asking for reasons, which means that it should be distinguished from mere action. Therefore, a nonlinguistic demonstration can be a reason, and as a consequence, linguistic form is not necessary for explicitness. It is possible to see that this example is generalizable when considering that demonstrating a skill or ability by actually doing the activity that involves the skill or ability is something that often is or can be done. “Do you know how to do X?” “Yes.” Sometimes, one may then provide a demonstration without further prompting, but the fact that, if such a demonstration fails to materialize, we then sometimes make this demand explicit (e.g., “Okay, then show me”) shows that a demonstration can function as a perfectly good reason.

One might think this conclusion is too fast. In a discussion of *Making it Explicit*, Jeremy Wanderer (2021) writes:

Observing a pilot pull back on the yoke, the scorekeeper can attribute the practical commitment ‘the pilot pulls back on the yoke’ to the pilot, thereby explicitly giving the performance its social standing as an intentional action. Furthermore, the gameplayer too can learn to keep score in this manner, allowing the pilot to self-attribute this practical commitment by observing their own performances (p. 202).

One could imagine a similar interpretation of the shoe-tying event where the linguistic interpretation of the act is what allows it to function as a reason. I assign propositional content to the shoe-tying demonstration by attributing a propositionally structured practical commitment to Justin, and it is that linguistic content that functions as a reason.

There are two ways to take this objection and neither of them is particularly compelling. First, if it is my interpretation of the event that puts it into the form of a reason, then it is not

Justin who has provided the reason for believing his claim that he can tie his shoes; instead, I have provided the reason. I asked Justin for a reason, so it would be odd if the reason-giving ultimately comes from me. The second possible version would be to say that Justin has made a type of performance that undertakes a commitment to some sort of propositional content. The act, because it sits within the linguistic structure of the game of giving and asking for reasons, actually has propositional content itself. Even if we ignore the problem of figuring out what exact propositional structure should be attributed to the act, this will entirely obliterate the act/reason distinction for beings with linguistic capabilities. Furthermore, the nonlinguistic act itself seems to function as a stronger reason than the propositional content. Justin actually tying his shoes is a stronger reason for thinking that he can tie his shoes than if he simply reasserted that he can tie his shoes. Even if we assign propositional content to the act of Justin tying his shoes, that propositional content divorced from the nonlinguistic act that it is being assigned to would be weaker evidence that Justin can tie his shoes than an actual shoe-tying demonstration. It seems then that the nonlinguistic act is doing the reason-giving work.

One might push back by arguing that Justin's shoe-tying demonstration provides evidence that he can tie his shoes, but providing evidence is not the same thing as providing a reason. Evidence only counts as a reason if it is translated into a linguistic form (either by someone stating what the evidence is or mentally by the observer).⁴⁸ So, in this case, Justin's demonstration has not really provided a reason. The evidence provided by the demonstration has to be translated into linguistic form in order to count as a reason. However, whatever reasons are, it is not terribly controversial to say that if content plays the role of a premise in an inference, then it counts as a reason (this lines up with Brandom's view discussed above). If one insists on a

⁴⁸ I'd like to thank Adina Roskies for raising this potential objection.

linguistic division between evidence and reasons and accepts this understanding of the relation between inference and reasons, then it follows that inferences can only involve linguistic content, or more specifically, evidence must be translated into a linguistic form in order for it to play the role of a premise in an inference. The problem is that humans seem to be capable of making perfectly good inferences with content that is nonlinguistic. To take just one example, mapped content can play a role in inferential processes, especially spatial inferences (Camp, 2007).

However, one could still argue that the map is only providing evidence, and in order for it to actually function as a premise in an inference, the mapped content has to first be translated into a linguistic proposition. The problem for this claim is that, as Aguilera and Castellano (2020) have pointed out, propositional content cannot easily be subbed in for mapped content without a loss of semantic information (see also Camp, 2018). If someone is using a subway map to make an inference, the constitutive elements of the map represent both particular locations and subway lines and the spatial relations between those locations and lines based on the ways in which they are spatially combined. In contrast, “the combinatorial principles of linguistic systems do not involve a significant semantic contribution,” so to use a “sentential predicate,” such as ‘interchange-station,’ instead of the information in its mapped form, means that the “the property of being an interchange station” is attributed “in a highly abstract and detached way (i.e., without making any reference to particular entities or spatial relations)” (Aguilera & Castellano, 2020, p. 309). This means that any translation of mapped content to propositional content will lose semantic information about the spatial relations between tokens on the map. This loss will limit the ways in which the information can be used in further inferences, ironically making the more abstract, linguistic version less inferentially promiscuous than the mapped version of the content.

Now, one could of course continue to insist that only linguistic propositions can play the role of premises while explaining these further inferences by the introduction of additional premises. However, Aguilera and Castellano (2020) point out that such a process starts to look both redundant and cognitively inefficient when compared to the quick and easy types of mental transitions that can be made with mapped content (p. 310). Given that humans can reason with maps in very quick and efficient ways (Buckner, 2019), attributing the reasoned use of mapped content, without it first being translated into propositional form, starts to look like a strong inference to the best explanation over linguacentric approaches. Since a linguistic demarcation between evidence and reasons will have to deny this possibility, such a demarcation does not seem like a palatable way to avoid the claim that reasons can be nonlinguistic.

The above arguments show that linguistic form is neither necessary nor sufficient for explicitness. However, philosophers particularly wedded to the idea that linguistic beings are the only ones capable of making content explicit could still argue that while linguistic form may not be necessary nor sufficient for explicitness, the contingent forces of evolution, culture, etc. have resulted in only linguistic beings being capable of making content explicit. So, while it is possible that nonlinguistic beings could make content explicit, the evolutionary paths of species on this planet means that only linguistic beings are capable of making content explicit.

I will counter this type of argument in the next section by presenting a number of examples where nonlinguistic animals seem to be capable of making content more explicit. Since the previous arguments have undermined the idea that explicitness can be identified by form alone, I propose turning to a more process-oriented account that identifies explicitness through the ways that subjects engage with content. My claim is that making content explicit is a matter of putting it into a form through which the subject is able to be aware of it and understand it.

Using or having explicit content is then using or having content that one both is aware of and understands.⁴⁹ Given the above discussion about the relation between awareness and understanding with ease of use and variety of modes of use, I will use ease of use and variety of modes of use as empirical markers for awareness or understanding. An empirical investigation into whether nonlinguistic animals are capable of making, using, or having explicit content is then an investigation into whether they are capable of putting, using, or having content in a form that supports both ease of use and variety of modes of use.

4. Ease of Use and Variety of Modes of Use

In this section, I will give an inexhaustive catalogue of behaviours that demonstrate the ability of nonlinguistic subjects to make content more explicit for themselves and others. Under each category falls a number of behavioural subcategories. Observatives, gestural communication, and pantomime are behaviours that aid ease of use, and teaching and play demonstrate variety of modes of use. I have chosen these subcategories because I think that there are philosophically unique claims to make about each of them, but as we will see, their boundaries are rather rough. On the categorical level, the play bows of dogs signal to potential playmates that the aggressive seeming behaviour to follow is actually play behaviour. The bows demonstrate a variety of modes of use because they allow dogs to present, interpret, and respond to aggressive seeming behaviour in more than one way.⁵⁰ However, arguably they do this

⁴⁹ This claim actually lines up with the views of Brandom, Dennett, and other linguistically oriented philosophers more than one might initially assume because they would likely claim that the ability to make content explicit is necessary for awareness and understanding, meaning that if one has awareness and understanding then they must have explicit content.

⁵⁰ One could object that the examples I provide below do not show a variety of uses; instead, they show that some nonlinguistic animals are capable of using content in more than one way. Variety, they may argue, implies a greater number of uses than two or more types of use. While this line of argument may initially seem intuitively appealing, it only really works if the objector is willing to provide a principled cut off. If 'variety' is to mean greater than two or more, then how many uses are required? It may be true that language makes it possible to use content in an infinite number of ways, but that does not make it true that humans are capable of using some given content in an infinite number of ways. So, to demand such a high bar would likely also rule out linguistic humans as

through a form of gestural communication that makes information more readily available, so they could also be categorized as affecting the ease of use dimension. The overlapping and messy categorization follows from both the tight connection between awareness and understanding and that they are both dimensions of the same continuum. The fact that one dimension will often interact with changes to the other should therefore be unsurprising and count as a strength, not a limitation, of the overall account.

4.1 Ease of Use

A. Observatives. In Quill Kukla and Mark Lance's (2009) *'Yo!' and 'Lo!'*, they argue that in order to fully account for geography of the space of reasons, we need to consider speech acts beyond declaratives and imperatives. Some philosophers, such as Brandom (2009a, p. 20), have argued that all other speech acts are either dependent upon declaratives and/or imperatives or are reducible in some way to declaratives and/or imperatives. In order to better understand the structure of the space of reasons beyond these confines, Lance and Kukla (2009) consider the way in speech acts can be classified by identifying their pragmatic function. This function can be defined by the inputs and outputs of a speech act where "the output of a speech act is the normative statuses the speech act strives, as part of its function, to bring about" and "the input is what would entitle the performance of a speech act, if it were entitled" (p. 16).

Lance and Kukla distinguish these normative statuses by extending terminology from moral philosophy that takes reasons to be either agent-relative or agent-neutral. Agent-relative

being capable of having and using explicit content. One cannot simply index the number of uses to the number of uses of the standard neurotypical adult human with linguistic capabilities because such an account would just straightforwardly beg the question. If an infinite number and a typical number cannot be used to deny that more than one use is sufficient, then maybe the objector could simply state a number greater than two – let's say three uses. However, an argument for such a conclusion would need to tie that specific number to a cognitive capacity that is only necessary when one is able to use the content in three ways but is not necessary for two ways. Maybe such an argument can be provided, but I do not know of any, and the prospects of any do not seem particularly strong. For that reason, I will consider the empirical marker of variety of use to be met when one can use content in more than one way.

reasons are “indexed to particular agents with particular positions in normative space”, whereas agent-neutral reasons “are not targeted at anyone in particular” (p. 16). For example, the imperative “Drop and give me ten push-ups!” has an agent-relative input and an agent-relative output because not everyone is entitled to make that sort of imperative (e.g., one must be a drill sergeant or a basketball coach, etc.) and the alteration in normative statuses that it strives to bring about is also agent-relative because it will be aimed at a particular individual or group of individuals (p. 17). Kukla and Lance write that “regardless of how smoothly the concrete normative uptake of the order goes, it is part of the functional design of the speech act that it target specific people upon whom it makes a normative claim” (p. 18). In contrast, the declarative “Paris is the capital of France” has an agent-neutral input because entitlement to making such a claim is not indexed to one’s normative status; “it is a speech act that finds grounding in the world in a way that is not specific to who is asserting it” (p. 17). Its output is also agent-neutral because, while it is likely said to a specific individual or group of individuals, it “seeks to impute the entitlement to assert this claim to the discursive community in general, and demands that others allow its content to constrain their inferences and beliefs” (p. 18).

One of the types of speech acts that Kukla and Lance consider using this framework, they refer to as ‘observatives.’ Observatives are a type of recognitive, which they define as speech acts that “*give expression* to a speaker’s *recognition* of something” (p. 45). More narrowly, observatives are “those recognitives that give expression to our recognition of an empirical fact, object, or state of affairs in *observation*, and most paradigmatically in perception” (p. 46). They argue that English has some words that play an explicit recognitive function, such as ‘Lo!’ and ‘Ho!’, but it is not the specific words or surface grammar that makes a speech act an observative. Instead, observatives are defined by their pragmatic function, specifically that they have an

agent-relative input and agent-neutral output (though this is complicated by the fact that observatives also often have an ostensive function which involves an agent-relative output).

The outputs of observatives are agent-neutral because they establish “a set of public facts” that “directly and agent-neutrally licenses beliefs, inferences, and declarative speech acts...” (p. 47). In other words, they have an agent-neutral output because they make something available to any agent who is capable of interacting with the semantic content of the speech act. However, the input of an observative is agent-relative because a statement like ‘Lo, there’s a rabbit!’ expresses the subject’s “receptive recognition of a rabbit” (Kukla & Lance, 2009, p. 47). Unlike the assertions that one might make in the same sort of circumstances, such as ‘there is a rabbit in the bush’ or ‘I see a rabbit in the bush’, the observative does not simply claim that there is a rabbit there or that I see rabbit. Instead, it directly indexes the expression to one’s observation or interaction with the world. As Kukla and Lance put it, the observative:

...serves a special cognitive function: it marks or *expresses my* detection of a rabbit. It is the *recognizing*, and not just what is recognized or who is recognizing, that is given expression in such a claim, and since what is expressed is the indexed recognition itself, this entitlement is not generalizable, even in the ideal (p. 47).

The expression of ‘Lo, a rabbit!’ may entitle others to believe that there’s a rabbit in the bush, but it does not entitle them to also express ‘Lo, a rabbit!’ Those others can only coherently make such an expression if they also personally see a rabbit. However, in such a case, it would be their perceptual interaction with the world that would be entitling them to their utterance, not my original expression of ‘Lo, a rabbit!’ (p. 48).

Compare this to the assertion ‘There’s a rabbit in the bush.’ In the right set of circumstances (e.g., I am recognized as a reliable and trustworthy observer and so on), this assertion can entitle others to also make the same declarative. The difference here is that one is entitled to make an observative only if they have actually made the observation themselves.

While others can get information from the observative of another, they are acquiring that information differently than the individual who made the observation. The essential point is that there is something pragmatically different about learning something about the world through perception and the expressions and claims that entitles one to make, from learning something about the world from the speech acts of others and the expressions and claims that entitles someone to make. In the former, any epistemic entitlement comes from a direct interaction with the world, whereas in the latter, any entitlement is inherited from others.⁵¹

Observatives are relevant to the thesis of this chapter because, as Kukla and Lance (2009) put it, they “make explicit our first-personal experiential encounters with the world” (p. 64). While this can make content explicit both to oneself and others, I will focus on a class of observatives that are specifically aimed at others. While observatives have an agent-neutral output, there is an important complication for utterances of ‘Lo!’ and pragmatically similar utterances. Kukla and Lance claim that lo-utterances are a subset of observatives distinguished by the ability to ostend. The addition of ‘Lo!’ to an observative like ‘A rabbit!’ calls “upon some others to attend to and recognize that which I am currently recognizing” (p. 47). This ostensive function means that utterances of ‘Lo!’ have an agent-relative output because they can only be directed at “those around us who are in a position to re-create our receptive encounter” (p. 48).

Since ostensive observatives are pragmatically structured to coordinate attention, they play a role in making content more explicit to some relevant other. Kukla and Lance (2009) write

⁵¹ One may argue that, given Brandom’s default/challenge model, entitlement does not need to come from anywhere. One has entitlement by default until challenged. However, even assuming this approach, one will need to be able justify their entitlement in the face of a challenge. When it comes to declaratives, one can justify their entitlement by appealing to experts or appealing to other claims that one can infer the declarative from. However, when it comes to one’s entitlement to an observative, no such strategy is permissible, instead one must appeal to one’s own perceptual experiences. If one says “I don’t see a rabbit, why do you think you are entitled to say ‘Lo, a rabbit!’”, one can respond by claiming that they just saw a rabbit. One cannot try to show their entitlement to “Lo, a rabbit!” by appealing to the claims of experts or claims that one could potentially infer the observative from.

that “the appropriate response to the utterance ‘Lo, a rabbit!’ is not...merely to believe the consequent declarative, but to *look and see* the rabbit for yourself. [...] In a lo-claim, we explicitly mark the intersubjective character of observatives by calling others to shared attention in a public world” (p. 82). Bringing someone’s attention to a specific feature of a shared environment makes that information available to others in a way that it was not before the observative was uttered and therefore makes that information easier to use. Therefore, the ability to make observatives is one way of making content more explicit.

One example of the use of observatives by nonlinguistic animals happens in the cooperative hunting behaviours of roving coral groupers with giant moray eels or Napoleon wrasses. Groupers have the speed to catch prey in the open water, whereas moray eels are the right size and shape to pursue prey hiding in the holes and crevices of coral reefs, and wrasses have powerful jaws that can be used to either smash the coral hideouts of prey or suck the prey out of them (Vail et al., 2013, p. 2). Groupers have two different bodily movements that they use to communicate with a hunting partner. The first is a body shimmy done in front of a potential hunting partner (p. 2). After a body shimmy in front of a moray eel, the eel will often join the grouper in a hunt. The body shimmy is also used when recruited moray eels stop hunting before a successful outcome and return to hiding in the coral. Groupers will often use body shimmies to resignal to the moray eel, broken up by periods where the grouper looks in the direction of the eel. Vail et al. (2013) argue that this bodily signal fulfils the criteria of a gesture. Laboratory work with coral trout, a species that also cooperatively hunts with moray eels (in addition to octopuses), showed that fish are more likely to recruit competent hunting partners over incompetent ones, showing that the signal is directed at a specific and selected individual (Vail et al., 2014).

It is the second communicative bodily movement done by groupers in cooperative hunting, usually referred to as a headstand, that functions as an observative. While used infrequently, after an unsuccessful hunt, the grouper will orient “itself vertically and head-down while conducting distinct headshakes with pauses between them” overtop of the prey’s hiding place (Vail et al., 2013, p. 2). Vail et al. (2013) write that “the signal...focuses the attention of both partners on a specific object (the crevice where the prey escaped)” (p. 2). The signal seems to share the pragmatic function of utterances like ‘Lo, there’s a rabbit!’ The grouper fish is directing the moray eel’s attention to the prey’s hiding spot based on a perceptual experience of the prey itself or having seen the prey enter the hiding spot. In other words, the headstand has an ostensive function that emerges from the input of the grouper fish’s perceptual experience.

That the grouper fish is attempting to point a specific individual’s attention towards a perceptual event is supported by Vail et al.’s (2013) analysis of 34 recorded observations of grouper headstands. In all 34 cases, “a potential recipient was within the grouper’s visual range” (p. 4), where a potential recipient is defined as a species that grouper fish cooperatively hunt with, such as moray eels or wrasses, and the species will generally inspect the pointed-to-crevice after the grouper’s headstand (p. 4). In 27 of the observed cases, the grouper fish continued to use the headstand signal until the potential recipient came over to inspect the crevice. In cases where the potential recipient failed to respond (and especially if the moray eel began to swim away), the grouper would swim up to moray eel or wrasse and do the body shimmy recruitment motion before immediately swimming back to the crevice it had been doing the headstand motion above (2013, p. 5). In four of the cases where moray eels failed to respond, “the grouper sided with the moray and appeared to try and push it in the direction of the previously indicated crevice” (p. 5). As argued earlier, explicit content is always explicit-*to* a given subject and the

grouper fishes' behaviours in these observed interactions indicates that they are trying to make information available *to* a specific individual. When that individual fails to have her attention appropriately directed, the grouper fish will try other strategies, such as different signals and even attempting to physically direct that individual's attention to the right place. These behaviours clearly seem ostensive, attention directing, and based on the perceptual input of the individual making them. Therefore, the headstand should be considered an observative.⁵²

Another set of behaviours that fit the pragmatic function of observatives is alarm calls. In their seminal paper "Monkey Responses to Three Different Alarm Calls", Seyfarth et al. (1980) observed that vervet monkeys responded to three different alarm calls in three different ways (p. 801). Individuals responded to leopard calls by running into trees, eagle calls by looking up, and snake calls by looking down. They were able to test these responses by playing calls on a hidden speaker. In addition to the mentioned behavioural responses to alarm calls, Seyfarth et al. write that "subjects in all age classes and of both sexes looked toward the speaker and scanned their surroundings more in the 10 seconds after a playback than before. They behaved as if searching for additional cues, both from the source of the alarm and elsewhere" (p. 802).

⁵² Andrew Fenton (personal communication) suggests that both the behaviours of the grouper fish and the eel could be sufficiently explained within a behaviourist framework. First, whether the eel's behaviour can be explained by chained behavioural associations is not particularly relevant for whether the grouper's headstand counts as an observative. If my dog comes running every time I yell 'Lo, a treat!' because they understand what 'treat' means or because of mere behavioural conditioning does not change whether I am making the utterance as an observative. Second, the possibility of an alternative interpretation of the headstand does not in and of itself rule out categorizing it as an observative. As Kristin Andrews (2020b) points out, the doing of science will always involve "competing hypotheses, but scientists need not worry that there are alternative hypotheses explaining a phenomenon. Instead, they only need to defend the claim that their chosen hypothesis best accounts for the *overall* body of data" (p. 182). I have provided reasons for supporting my interpretation, including from the ability of grouper fish to evaluate the competency of possible hunting partners to their attempts to orient (sometimes physically) their hunting partner in the right direction. While a behaviourist interpretation of these actions will still be possible (as it will always be according to Andrews), it will be difficult to evaluate the merits of such an interpretation unless actual details are provided that can then be weighed against the story I am trying to tell. Finally, notice that I am only arguing that observatives affect one dimension (ease of use) of the implicit/explicit continuum. It would be perfectly legitimate to argue that only behaviours that affect both dimensions can lead to content that is actually explicit. For examples involving both dimensions, see my discussions of communicative repair, teaching, and play further down.

Previous interpretations of these results by philosophers have treated alarm signals as assertional and/or propositional. Interpreting alarm calls by Campbell's monkeys, Kevin J. S. Zollman (2011) writes that "since the right response for a listener depends on the situation that listener is in—and since the signaler is signaling to many different monkeys in different contexts of which the signaler is unaware—it seems proper to interpret the signal as an assertion" (p. 167). Zollman's point is that the call is made to many individuals, including to those for whom the caller is unaware of their current circumstances. The appropriate behavioural response will depend on the individual's circumstances, so the alarm call cannot be a directive. The remaining option, according to Zollman, is for it to be an assertion. Dennett (1983) also interprets the vervet behaviour in Seyfarth and Cheney's work as potentially indicating propositional content (p. 346). However, after joining Seyfarth and Cheney in the field, Dennett (1988) expressed skepticism about attributing intentional and/or semantic content to vervet alarm calls because of the difficulty in fixing propositional content for them (pp. 215-221).

However, interpreting alarm calls as observatives fits the observed behaviour better and avoids some of these difficulties. First, the reaction of attempting to visually locate the caller and then attempting to visually locate what inspired the call fits the ostensive and attention-directing function of observatives. The call's input is the perceptual experience of the caller, so locating whatever inspired the call will be easier if one can first locate the caller. The fact that recipients are sensitive to the caller is further supported by evidence that recipients are less likely to respond to calls by less reliable observers. For instance, juveniles who are less selective in their calling receive less of a response, as well as callers who have made inaccurate calls in the past (Cheney & Seyfarth, 1988). Recipients are sensitive to the types of calls that were inaccurate in the past, for instance a caller that has made inaccurate eagle calls may no longer get the same

response for their eagle calls but will still receive a response for their leopard and snake calls. Similar sensitivities are found in other species, for example, suricate responses to alarm calls are modulated by the urgency of the call (Manser, 2001). Low urgency calls will result in a brief investigatory break in their behaviour, whereas urgent calls will lead to longer investigations.

Second, there is no need for the alarm caller to know the circumstances of every recipient around her other than that the audience is sufficiently close to have their attention directed. That at least some species are aware of the effect that their call has on their audience is shown by evidence that a number of species are more likely to make alarm calls in the presence of related than unrelated individuals and less likely to make alarm calls around higher ranking individuals (Cheney & Seyfarth, 1985). Chimpanzees have also been shown to make or not make alarm calls based on whether their audience has already been previously informed (Crockford et al., 2012). For instance, chimpanzees who were exposed to a rubber snake in the area they were spending time in, only made alarm calls to individuals who had not already been made aware of the snake. Attention seems to be what is relevant in these scenarios, more than any directive intent. While Zollman takes the only other option to be assertions, observatives not only fit the attention-oriented behaviour better, but they are also able to avoid the problem that Dennett points out.

Dennett (1988) argues that it is not possible to ascribe specific semantic content to alarm calls by pointing out that there is no nonarbitrary way for narrowing the set of propositional contents that could be ascribed to vervet calls (pp. 215-221). However, this sort of worry actually supports treating the alarm calls as observatives. Kukla and Lance (2009) argue that observatives are not necessarily propositional. While this might seem absurd, the alternative faces the difficult problem of finding a non-arbitrary way to fix the propositional content of observatives. For instance, Kukla and Lance (2009) ask: “Is ‘Lo, a rabbit!’ equivalent to ‘Lo, there is a rabbit

present!,’ ‘Lo, there is a rabbit in the bush!,’ or perhaps ‘Lo, a rabbit is near enough to me for that to be remarkable!’?” (p. 55). There is not a clear nonarbitrary way to pick between these alternatives. Kukla and Lance claim that observatives are better understood as ‘implying’ propositional content than having propositional content (p. 55). Observatives can support propositionally structured declaratives, but that does not make them propositionally structured declaratives themselves.

So, treating alarm calls as pragmatic functions with a specific type of input and output means that specific claims can be made about them without getting weighed down by worries about fixing propositional content. Despite potentially lacking propositional content, there is at least suggestive evidence that alarm calls, like observatives, have conceptual content. As mentioned already, different alarm calls result in different behaviours by recipients. Furthermore, Toshitaka N. Suzuki (2018) found evidence that Japanese tits make specific searches for visual information based on the type of alarm call. Snake-specific alarm calls lead to tits investigating sticks moving like snakes, but general alarm calls did not lead to similar investigations, nor did snake-specific alarm calls lead to investigations of sticks moving differently from snakes (p. 1541). This claim could be strengthened if nonlinguistic animals ever make observatives that involve metarepresentational information. In Chapter 6, I will argue that chimpanzees use metarepresentational devices to navigate their social hierarchies. If a form of communication within (or even better, about) those hierarchies could be identified as an observative, then there would be an even stronger reason to think that nonlinguistic observatives can contain conceptual content.

Before moving on from observatives, there is a potential objection to interpreting animal behaviour as observatives that needs to be addressed. Kukla and Lance (2009) take observatives

to involve an ineliminable first-person structure. They refer to the first-personal element of the perceptual input of observatives as a first-person ‘voice’ to highlight that the first-person here is a “pragmatic rather than a grammatical feature of a speech act” (p. 61). Kukla and Lance write that “the voice of a speech act concerns the manner in which the agent takes up her entitlement to the speech act and strives to assign statuses to others” (p. 61). Just how onerous of a cognitive burden this is, is left open. They write:

This leaves open the interesting question of whether one must be able to make explicit one’s own first-personal ownership of a receptive episode in order to count as a genuine perceiver. An anonymous referee pointed out that it is dubious that animals, for instance, could have such an explicit grasp of their own relationship to their perceptual states, while at the same time it is hard to deny that they are perceivers. Everyone will agree that there is some important sense in which animals perceive; the open question here is whether there is some rich epistemic sense that those of us who can explicitly recognize our first-personal states are engaging in when *we* perceive (p. 49 fn. 4).

Kukla and Lance leave this as an open question, but one could argue that the first-person voice of observatives means that it is inappropriate to interpret the behaviours of nonlinguistic animals as fulfilling that pragmatic function.

While it is an open question whether nonlinguistic animals are capable of I-thoughts or are able to “make explicit [their] own first-personal ownership of a receptive episode” it is not clear why Kukla and Lance (2009) would even consider making such capabilities necessary for making observatives. They emphasize that a first-person voice is not a grammatical feature but a pragmatic one, so it is unclear why they would consider something like the explicit use of a first-person pronoun as necessary for having such a voice. Brandom (1994), for instance, thinks that the first-person pronoun is a logical term that can be used to make explicit one’s own acknowledgement of a commitment (p. 552). As will be discussed in further detail in the following chapters, for Brandom’s expressivist approach to logic to make any sense, the space of

reasons has to be capable of functioning prior to the introduction of logical vocabulary. For Brandom, formal logic allows one to make explicit the inferential patterns and norms of one's reasoning, so that those patterns and norms themselves can have reasons given and asked for them. The development and uptake of logical vocabulary then relies on inferential practices already being in place. From Brandom's perspective then, the first-person pronoun, as a logical term, will require an already functioning space of reasons in which individuals are already implicitly attributing and acknowledging commitments.

While the basic structure of the space of reasons for Brandom (1994) has to have an 'I-thou sociality', that does not mean that it requires use of the first-person pronoun. Brandom (1994) writes that there is "nothing incoherent in descriptions of communities of judging and perceiving agents, attributing and undertaking propositionally contentful commitments, giving and asking for reasons, who do not yet have available the expressive resources I provides" (p. 559). Instead, it means that the basic structure requires that one is capable of implicitly attributing and acknowledging commitments as well as implicitly keeping track of those attributed and acknowledged commitments (p. 508).

Given that Kukla and Lance's (2009) own account heavily draws from Brandom's project and that they stress that their arguments do not upset Brandom's expressivist account of logic (p. 217), it is strange that they are willing to entertain the possibility of the first-person pronoun as necessary for the making of observatives. Observatives are portrayed as a basic building block of the space of the reasons that connects the space of reasons to the world and individual perspective takers through the expression of perceptual experiences which create the very possibility of uninherited entitlement.⁵³ It is therefore necessary for observatives to be able to

⁵³ Entitlement that is not the result of an inference from the entitlement that one has to some other claim.

function autonomously from logical vocabulary. Otherwise, the game of giving and asking for reasons would not be able to get off the ground, and furthermore, as will be stressed in the following chapter, we will lack a proper explanation for the development and use of logical vocabulary.

B. Gestural Communication. Many nonlinguistic animals communicate with each other through gestural and/or vocal signals. For instance, Hobaiter and Byrne (2014) have identified 66 chimpanzee gesture types used to communicate 19 meanings. While I think it can be argued that any form of communicative gestural or vocal signaling can count as making content more explicit, I will focus on communicative behaviours that are the most strongly linked with attention and ease of use. One type of behaviour that is directly tied to attention is what Tomasello et al. (1989) have classified as attention-getters. Attention-getters are gestures used to get the attention of another individual. Tomasello et al. (1989) write:

For example, some adult male chimpanzees in the wild have learned, in sexual contexts, a 'leaf-clipping' behavior that is quite noisy, and serves to attract the female's attention to the male's erect penis. In the current study, 'ground-slap' usually served to obtain a peer's attention to the initiator's unlearned play face and postures, which then initiated play (p. 44).

Effective communication is much more likely if the recipient is paying attention. While the full attention of a recipient may not be necessary, at least some form of attending will be. It is reasonable to think that the fuller the attention of a recipient, the easier it will be to grasp and use the information or meaning being communicated. Drawing the attentional states of communicatory partners is then a form of making content more explicit. Attention-getters can create the grounds for successful communication, something that (at the very least) will make it easier to access and use the information being communicated.

That many nonhuman primates are aware of and attend to the attention of communicative partners has been demonstrated in both observational studies and experimental work. For example, when requesting food from an experimenter, both monkeys and apes are more likely to use gestural communication when the experimenter is facing them and audible communication when the experimenter is facing away from them (Genty & Zuberbühler, 2015; Leavens et al., 2010). Chimpanzees and other nonhuman great apes will move into or will orient themselves into the line of sight of those they are trying to communicate with (Moore, 2016). Observations of captive olive baboons show that they are more likely to use gestural communication when the recipient is actively attending, and are more likely to use tactile communication when the recipient is not (Molesti et al., 2020). There is also evidence that suggests that chimpanzees are aware of the attentional states of non-recipients and eavesdroppers. For instance, chimpanzees are more likely to use silent gestural signals in scenarios where revealing their communication to an out of sight chimpanzee could be costly, such as sexual invitations by male chimpanzees lower in the social hierarchy (Hobaiter et al., 2017).

One form of communication that focuses a recipient's attention on the appropriate visual space or object is pointing. For example, female bonobos will signal a desire for genital-to-genital rubbing by first pointing to their genitals with their foot and then demonstrating a hip motion that mimics the motion in genital-to-genital rubbing (Douglas & Moscovice, 2015). There is a significant number of experimental and observational results demonstrating pointing or something like pointing for an extremely wide set of nonlinguistic animals. In a systematic review of the literature on animal pointing, Kraus et al. (2018) found that a majority of studies found that chimpanzees can both produce and comprehend pointing (pp. 333-334). While there has been considerable debate about what sorts of other cognitive capacities are necessary for a

performance to count as pointing (such as a theory of mind) (Krause et al., 2018, p. 328), it is not particularly important for my argument whether putative examples of pointing actually meet these more robust definitions of pointing. As long as the gesture focuses the attention of the recipient on information in the environment or the mental content of the communicator in a way that makes it easier to use, then the gesture is making information/content more explicit whether or not it counts as a genuine instance of pointing.

There is empirical work that also demonstrates that some nonhuman primates are capable of elaborating when an initial attempt at communication is unsuccessful. Elaboration makes communicatory content more explicit by presenting it in a form that is easier for the recipient to use or comprehend. For example, when chimpanzees fail to have a satisfactory response to their initial gestural or vocal signal, they can follow it with gestures that have overlapping or closely related meanings (Byrne et al., 2017). Hobaiter and Byrne (2014) have noted that elaboration with seemingly redundant symbols is more likely in cases where a signal lacks a ‘canonical response’, such as requesting affiliation, whereas an individual signal is more likely to be successful on its own in cases where a satisfactory response is straightforward, such as when initiating grooming. This observation has led them to suggest that elaboration is more likely in cases where some degree of negotiation is required (Hobaiter & Byrne, 2014, p. 1599).

The type of communication used in communicatory failure is also flexible. For instance, unsuccessful chimpanzee vocal signals can be followed by combinations of gestures and vocal signals (Hobaiter et al., 2017). The attentiveness of communicators to the explicitness of different signals directed towards different individuals is suggested by work with bonobos. Bonobos that fail to communicate with familiar individuals tend to repeat the same signal, but when communication fails with unfamiliar individuals, subjects tend to try different ‘redundant’

signals (Genty & Zuberbühler, 2015). Similarly, orangutans can use different signalling strategies based on the perceived comprehension of the recipient (Cartmill & Byrne, 2007). When partial comprehension has been reached, an orangutan is more likely to narrow their range of signals, frequently repeating gestures that have already been used. Whereas when the recipient seems to completely fail to grasp the meaning of the gestures, an orangutan is more likely to widen the range of signals used while not repeating previously used ones.

Another strategy available in difficult or unsuccessful communicatory scenarios is pantomime. For example, Russon (2020) describes an apparent case of pantomime by an orangutan from a database of 62 recorded instances of pantomime by great apes. She writes:

Siti, an adolescent rehabilitant orangutan, was husking a wild coconut manually. She skillfully opened one of its three eyes, extracted and ate some of the jelly inside, then stopped before opening the other two eyes, handed her coconut to the technician monitoring her, and waited. Other wild coconuts that had been sliced apart littered the ground nearby, suggesting someone had chopped them open with a machete to help rehabilitants. This technician offered the coconut back to Siti without opening it. She replied by chopping at the coconut with a stick, as if telling him to use his machete to chop her coconut open. Within seconds he complied; she watched and waited without interfering while he did so, then extracted and ate the remaining jelly inside (p. 202).

When pantomime or elaboration is used after an initially unsuccessful communication strategy, they not only count as an attempt to improve ease of use for a recipient but also suggest that the signaler is capable of using content in more than one way. The ability to present information/content in more than one way that is flexibly attentive to the comprehension of the recipient provides a reason to think that the signaler understands what they are trying to communicate.

While we should be careful when making comparisons to the behaviours of linguistic humans, it is worth noting that one way to help a student understand a difficult concept is to explain it in several different ways. This approach not only helps develop understanding, but the

ability to explain something in several different ways demonstrates the understanding of the teacher. Now, I am not arguing that great ape elaboration or pantomime counts as teaching or explanation, but it is worth noting that in both the case of teaching by humans with linguistic capabilities and the case of great ape elaboration/pantomime in response to communicatory failure, content is used in more than one way. In both cases, the communicator is capable of presenting the same content in different ways and adjusting their performance based on the success or failure of the previous attempt. So elaboration and pantomime provide a connection between the two dimensions of the explicit/implicit continuum. Subjects with content that is more explicit on the dimension of understanding/variety of modes of use are better able to make information/content explicit to other subjects along the dimension of awareness/ease of use.

As noted earlier, pantomime is not limited to cases of communicatory failure, such as the female bonobos that use hip sways after foot-pointing to request genital-to-genital rubbing. Like pointing, it is controversial what other sorts of cognitive capacities are required in order for a case of apparent pantomime to be genuine. For instance, some have argued that genuine pantomime requires the communicator to understand that the motion mimics the one being pantomimed (Douglas & Moscovice, 2015). So the female bonobos would have to understand that the hip sway mimics the motions of genital-to-genital rubbing. Douglas and Moscovice (2015) emphasize that they are not able to confirm that female bonobos understand the relation between the two actions. However, it is not particularly important to the argument I am making here whether putative cases of pantomime are genuine or not. What matters is that they make information/content more explicit to recipients by making it easier to use.

4.2 Variety of Modes of Use

C. Teaching. As with elaboration/pantomime, teaching not only makes information/content easier to use for a student/recipient but demonstrates that the signaler is capable of using that information/content in a variety of ways. While the ability to learn, including from other conspecifics, seems to be relatively widespread among nonlinguistic animals, convincing cases of teaching are relatively rare (Whitehead & Rendell, 2015, p. 180). Most comparative psychologists, ethologists, and behavioural ecologists use the definition of teaching developed by Tim Caro and Marc Hauser (1992). In “Is there teaching in nonhuman animals?”, they argue that previous definitions of teaching in the animal behavioural sciences have been overly intellectualized, to the point that animal behaviour scientists were using a stricter definition of teaching than the one regularly used in human contexts. In response, they provide a functional understanding of teaching that can coherently be a part of evolutionary explanations. The definition they propose is:

An individual actor A can be said to teach if it modifies its behavior only in the presence of a naive observer, B, at some cost or at least without obtaining an immediate benefit for itself. A’s behavior thereby encourages or punishes B’s behavior, or provides B with experience, or sets an example for B. As a result, B acquires knowledge or learns a skill earlier in life or more rapidly or efficiently than it might otherwise do, or that it would not learn at all (p. 153).

Two cases that are widely regarded as meeting these conditions are the meerkat practice of disabling scorpions for pups and tandem running in some species of ants.

In the first case, adult meerkats will partially disable scorpions for pups so that they can gain experience from interacting with dangerous prey (Thornton & McAuliffe, 2006). As pups get older, adult meerkats will leave the scorpion more intact, allowing the pups to progressively learn to deal with fully able scorpions. This behaviour meets Caro and Hauser’s conditions because the behaviour is only done in the presence of pups, and the adult does not gain an immediate benefit from the practice; instead, they lose a potential meal. Furthermore, the pups

acquire an experience that allows them to develop a skill. Thornton and McAuliffe (2006) demonstrated that pups not exposed to partially disabled scorpions were worse at dealing with fully intact scorpions than pups that had been exposed. In this case, ease of access to the skills involved in safely hunting scorpions is increased for the meerkat pups through the process of teaching, and it also demonstrates the ability of adults to use their scorpion hunting skills for two different purposes (variety of modes of use).

The second case is tandem running by *Temnothorax albipennis* ants (Franks & Richardson, 2006). Tandem leaders who have found food sources on solitary runs will sometimes lead naïve ants to a food source. In tandem running, the leader will only continue along the route when “frequently tapped on her legs and abdomen (gaster) by the following ant's antennae” (p.153). This means that the leader will stop when the follower momentarily stops to travel in a circle away from the leader to locate landmarks along the route to inform future runs. Glaser and Grüter (2018) found that the success of tandem runs increased for leaders who had led previous tandem runs, suggesting that followers were not the only subjects learning from the process. Leaders can also adjust based on the ability of the follower and the type of route. For example, leaders will wait longer for the follower to re-establish contact on longer runs, will take more or less time to abandon a slow tandem run depending on the quality of the food source, and are more likely to abandon a tandem run if the run is exceedingly slow (Richardson et al., 2007). Additionally, Franklin and Franks (2012) found that followers that become leaders to the same food source improve upon the tandem route if they have also done independent exploring in between being a follower and a leader. And while tandem running can look like a relatively simple form of signaling, Silva et al. (2021) have recently shown that, for *Pachycondyla striata*

ants, the leader is able to communicate to the follower about the type of food source they are being led to (though they are still unsure how this is being communicated).

Tandem running fits Caro and Hauser's (1992) conditions because ants do not pause and wait for another ant to touch them on solitary runs, the runs cost the leader by significantly slowing them down, and the follower learns of a new food source through the experience. Leadbeater et al. (2006) have objected that, despite meeting Caro and Hauser's conditions as well as demonstrating feedback from the follower to the leader, tandem running is more like telling someone where a food source is than teaching them something. According to Leadbeater et al. (2006), this means that tandem running is a form of social learning, but does not involve teaching. While I do not find their critique particularly convincing (as they note themselves, a human telling another human some fact or claim can be classified as teaching), even if their critique is right, it does not undermine my argument. Tandem running demonstrates that the ants are able to use content in more than one way because the leader is able to use information about where a food source is for two different purposes: to gather food herself or lead other ants to the food. That this information is used flexibly in the process of leading other ants, only further suggests that some form of understanding is going on.

While clear cases of teaching seem to be relatively rare among nonlinguistic animals, this may have less to do with rareness of teaching itself and more to do with the practical and ethical limitations⁵⁴ of experimental work (Whitehead & Rendell, 2015, pp. 180–184). While the meerkats and tandem running ants have been shown to meet Caro and Hauser's conditions through experimental work, there are number of very suggestive cases that cannot be confirmed experimentally. For example, killer whales by the Crozet Islands in the southern Indian Ocean

⁵⁴ For example, having control conditions in place that stop a free-living animal from learning how to hunt could impair their ability to survive after the experiment.

hunt elephant seal pups through the risky strategy of purposefully stranding themselves on breeding beaches (Guinet, 1991). During both seal breeding and non-breeding periods, mother whales have been observed pushing their calves both up and down the beach. If there are seals on the beach at the time, the calf is pushed onto the beach facing towards the seals. This meets two of Caro and Hauser's conditions because it is behaviour that could not happen if the calf was not there, and it is hard to imagine what sort of immediate benefit the mother could be deriving from the behaviour (Whitehead & Rendell, 2015, pp. 180–183).⁵⁵

However, for the third condition, the evidence is only suggestive. Guinet and Bouvier (1995) describe the difference between the hunting abilities of two calves, A4 and A5. A5, whose mother was regularly seen around in beach stranding sessions, became a successful seal hunter, whereas A4, whose mother was rarely around during beach stranding sessions, was never observed making a successful seal catch. In fact, at one point during the study, A4 permanently stranded himself on the beach before the researchers decided to intervene and push them back into the water. While these observations are suggestive, they unfortunately are not enough to

⁵⁵ Andrew Fenton (personal communication) has suggested that benefits to the mother whale cannot be ruled out since it remains possible that the mothers are merely using their calves as a tool in the hunting process (perhaps by using them to scare the seals in a direction that makes it easier for the mothers to catch them). Therefore, this sort of behaviour fails to meet the second condition and cannot even be a suggestive example of teaching. However, as already noted, the observed practice is seen both in cases when seals are on the beach and when they are not. If the calves are being used as a hunting tool, then it is mysterious why the practice is observed even in cases where there is no prey. As for other suggestions for how the practice could be benefiting the mothers, Whitehead and Rendell (2015) write:

This is hard to assess definitively—perhaps, for example, parasites are removed from the skin, so there is a function to swimming up the beach even with no hope of catching prey—but it seems unlikely that they do. At the Punta Norte site in Argentina, adults have been seen throwing already captured prey at calves. Literally throwing away lunch is a pretty costly behavior, but it is unclear whether this actually contributes to the calves learning how tasty young pinnipeds are (p. 181).

So, while the possibility that the practice might be benefiting the mothers in some way cannot be entirely ruled out, there are reasons to think that the practice does meet the second condition. I once again refer back to Andrews' (2020b) point that because alternative interpretations are always possible, the mere possibility of an alternative interpretation bears little epistemic weight. Instead, a concrete alternative will need to be proposed so that its merits can be weighed against the provided interpretation (p. 182).

demonstrate that the calves are learning something from the practice (Whitehead & Rendell, 2015, p. 183).

Another potential example comes from thirty years of observational data which has shown that Atlantic spotted dolphins on the Little Bahama Bank use body orienting movements (“exaggerated movements in the direction of prey”) when hunting with their calves (Bender et al., 2009). Given that there is experimental work with dolphins that demonstrates that they can both comprehend (Herman et al., 1999) and produce pointing motions (Xitco et al., 2001, 2004), it is reasonable to interpret these exaggerations as a form of pointing (Whitehead & Rendell, 2015, p. 183). These movements were not used when calves are not present and provide no discernable immediate benefit to the mother (they actually slow down the hunting process), so like the killer whale mothers’ beaching behaviours, this meets Caro and Hauser’s first two conditions. Unfortunately, it is hard to imagine a practical or ethical way to experimentally determine whether the dolphins learn how to be better hunters from these demonstrations (Whitehead & Rendell, 2015, pp. 183–184). Despite the inability to conclusively classify these behaviours as teaching, these behaviours can still demonstrate a form of making information/content explicit. Hunting in a way that emphasises certain movements or options by exaggerating movements or literally pushing a calf into that possibility demonstrates a variety of modes of use because the knowledge and abilities involved in the hunting practices can be used in two different ways.

D. Play. Play is a widespread behaviour among nonlinguistic mammals and some birds (Allen & Bekoff, 2005). Allen and Bekoff (1996) write that:

Many behavioral biologists consider play an important behavioral phenotype. They have a hard time, however, coming up with a consensus definition of play. Most biologists who have observed mammals in the field can give examples of behaviors they consider to be playful, and while there may not be consensus about a definition, there is considerable

consensus about cases – biologists agree that many mammals and some birds engage in play, especially during the early years of their lives. Sometimes play is reported in other classes of organisms, such as reptiles, but there is less consensus about these cases (p. 229).

Play behaviour demonstrates a variety of modes of use because the same behaviour outside the context of play is often fighting, mating, or aggressive behaviour. For that reason, many nonlinguistic animals have a way to signal that the preceding or following behaviour is play behaviour. For example, most canine species signal play behaviour through a play bow and/or relaxed mouth position (Palagi et al., 2016, p. 317). I will call these types of signals modifiers because they modify the use or interpretation of the behaviour preceded by or followed by them. Modifiers demonstrate and facilitate a variety of modes of use by allowing the communicator to use behaviours typical of one type of interaction in a different context. Furthermore, they signal to the recipient that the behaviour should be interpreted within one type of context, such as play, instead of some other type of context, such as fighting. Therefore, subjects that can appropriately use modifiers demonstrate that they are capable of flexibly using behaviours in different contextual modes, and the use of that modifier, similarly to elaboration or pantomime, makes it easier for the recipient to use by narrowing the range of possible interpretation.

While dogs and other canine species signal play behaviour by play bowing and/or holding a relaxed mouth position, chimpanzees and other nonhuman primates use a play face to solicit play behaviour from conspecifics (Palagi et al., 2016, p. 318). While there is debate about the voluntariness of nonlinguistic signals, especially facial expressions and vocal signals, play solicitations can be used flexibly. For instance, Tanner and Byrne (1993) recorded 26 instances of a captive female lowland gorilla, Zura, hiding her play face or ‘wiping’ it off with her hand (p. 452). Zura would hide or inhibit her play face in order to surprise play attack her playmate Kubie or in cases when a presumably unwanted interloper would attempt to join their play session. In

the wild, statistical analysis of chimpanzee play solicitations shows that they modulate their signals based on the recipient and/or other audience members (Fröhlich et al., 2016). For instance, chimpanzees are more likely to use self-handicapping gestures the younger the recipient is and use self-handicapping gestures more frequently if the mother of the recipient is nearby or observing the interaction, increasing in use with the intensity of the play (presumably to avoid intervention by the mother). Dogs also use play signals throughout playing to ensure that a playful interaction does not turn into an aggressive one (Allen & Bekoff, 2005, p. 130). Though rarely, play signals can also be used deceptively. Studies on coyotes have shown that deceptive play signals can lead to less frequently accepted play solicitations by both the recipient of the deception and others, and in at least one case, deceptive play signals led to social ostracism (Bekoff, 1977). The flexibility in the use of play solicitation signals suggests that communicators can understand the modifying function of their signal.

That signalers want their signal and its modifying function to be properly communicated to the recipient is demonstrated by the way in which communicators are attentive to the attention of the recipient. Attention-getting gestures and signals are frequently used when soliciting play or during play bouts, and the type of gesture or signal is dependent upon what will be most effective given the recipient's current attentional state. For instance, dogs are more likely to play bow when the intended recipient is able to see them and will use more tactile or audible forms of communication if the recipient is facing away (Horowitz, 2009). This happens not only during the initial play solicitation but during bouts of play where one subject has become distracted or inattentive. Play signals not only provide social information to the potential recipient, but to other audience members, as mentioned above in the cases of interventions by chimpanzee mothers and the avoidance of deceptive coyotes. Furthermore, experimental work with dogs has

shown that they are more eager to approach participants of an interaction if play signals have been involved and more wary of approaching participants of a similarly choreographed interaction without play signals (Rooney & Bradshaw, 2006). In other words, play signals can make information/content more explicit not only to an intended recipient but to other conspecifics or community members.

While there has been less skepticism about play than previously discussed types of behaviour, there has been some philosophical skepticism about the prospect of animal play. Alexander Rosenberg (1996) argues that play involves third-order intentionality because it involves pretence. He writes:

...if we hold that animals play with one another, the intellectual powers we must accord them are at least as strong as those sufficient for language. Consider what's involved in animal *a* doing act *d* to animal *b* *playfully*, as we ordinarily understand the term: *a* does *d* with the intention of *b*'s recognizing that *a* is doing *d* not seriously but to do *d* not seriously but with other goals or aims. This is *third* order intentionality: For *a* to play with *b* requires *a* have the cognitive power to conceive of *b*'s having beliefs about *a*'s thoughts. That, on the view of some philosophers, is enough to endow an organism with language, or at least the power to produce it (p. 220).

In other words, play behaviour requires sophisticated cognitive capabilities that we only find in beings with linguistic capabilities.

Rosenberg's claim here seems less than plausible. As Allen and Bekoff (1996) point out, a consequence of this conception of play would be that prelinguistic human children do not and cannot exhibit play behaviour (p. 232). Allen and Bekoff argue that this should make us skeptical that Rosenberg's use of the term 'play' lines up with the "ordinary conception of play" (p. 232). I think the claim could be made in even stronger terms: to deny that young human children play is to deny an internal relation that constructs and constitutes the concept of PLAY. In other words, an analysis of PLAY that leads to the consequence that young human children do not and cannot

play is like an analysis of the concept DOG that leads to the consequence that dogs do not generally have four legs. Such an analysis should lead us to question if we are even using the same concepts.

However, even if one has different intuitions about PLAY than I do here, Rosenberg's critiques or other forms of skepticism about nonlinguistic animal play do not undermine the central point I am making in this section. Even if one argues that play behaviour requires sophisticated cognitive capabilities that are only available to beings with linguistic capabilities, the behaviours discussed above still show that some nonlinguistic animals are capable of using content in a variety of ways. Whether the behaviour counts as actual play or merely putative play, what matters for my argument is that the subjects use modifying signals that allow behaviour that would normally be interpreted one way (aggressive/sexual/etc.) to be interpreted another way (non-aggressive/non-sexual/etc.) Nothing more is needed to infer that at least some nonlinguistic animals are capable of using content in a variety of ways.

5. Conclusion

In this chapter, I have argued that linguistic form is neither necessary nor sufficient for making content explicit. First, I argued that linguistic form is not sufficient for identifying explicit content. Instead, both awareness and understanding are required for content to be explicit to a given subject. The addition of these two conditions pushes an account of the implicit/explicit distinction towards a two-dimensional continuum where explicitness is always explicitness-to or -for a given subject. Furthermore, this suggests that while form does play some role in explicitness (it has to be in a form that the subject can be aware of and understand), identifying subjects that are capable of making it explicit can be done by determining which subjects are capable of moving content along these dimensions. Second, I argued that linguistic form is not

necessary for explicitness because nonlinguistic demonstrative acts can function as reasons. If in order for something to be a reason it has to be explicit, then demonstrating that a reason can be in a nonlinguistic form shows that language is not necessary for explicitness. Finally, I considered the objection that linguistic abilities are contingently necessary, so while language may not be logically necessary, evolution, culture, or other developmental forces have made the categories of beings with linguistic capabilities and beings that can make content explicit coextensive. In response, I have presented a number of behavioural abilities and practices by nonlinguistic animals that provide reasons for thinking that they are capable of making content more explicit to themselves and others. While there can be legitimate debate around whether some of these abilities are sufficient for moving content from the implicit side of the continuum to the explicit side, they do show that at least some nonlinguistic animals are capable of moving content along that continuum in the direction of explicitness.

Chapter 5
Inferences in the Wild:
A Material and Externalist Account of Inference

In the two previous chapters, I have argued that at least some nonlinguistic animals are capable of grasping concepts and that they are capable of relating to content in ways that allows it to function as a reason for themselves and others. Are animals that meet these conditions also capable of making inferences? NCH, especially Brandom's inferentialist version, takes the grasp of a concept to consist of being able to make the right sorts of inferences, and most philosophers would likely argue that the concept of having a reason only makes sense in the context of reasoning. So if this question cannot be answered affirmatively, then the claims made in the previous two chapters could be seen as standing on shaky ground.

Some philosophers, such as Hilary Kornblith (2012), have argued that nonlinguistic animals are capable of making inferences; however, others, such as José Luis Bermúdez (2003) and Paul Boghossian (2018), have argued that nonlinguistic animals lack the necessary cognitive abilities to make inferences.⁵⁶ Bermúdez argues that nonlinguistic content lacks the necessary syntactic features that allow for inference and that inferences require metacognitive capabilities that are only available through language. Boghossian has argued that nonlinguistic animals are incapable of meeting the taking condition, which stipulates that in order for a mental process to

⁵⁶ As mentioned in Chapter 1, one could argue that Bermúdez does not claim that nonlinguistic animals cannot make inferences, he merely argues that they can only make protoinferences. As discussed in fn. 8, it is not always clear how one should understand the relation between protoinferences and inferences (e.g., whether protoinferences are a type of inference or something that precedes inference proper). For those who are concerned that I am interpreting Bermúdez's arguments too strongly, they are welcome to skip over my discussion of him since his arguments no longer count as an objection to my claims, or they can interpret my claim that Bermúdez denies that nonlinguistic animals can make inferences as merely saying that Bermúdez denies that nonlinguistic animals can make inferences that go above and beyond mere protoinferences. This latter option is enough to consider Bermúdez as providing an objection to my account because he seems to think that even everyday human inference requires linguistic vehicles meaning that they will be out of reach for nonlinguistic animals (2003, p. 112). Whereas the view I argue for in this chapter and the next is that at least some nonlinguistic animals can meet the requirements for inference without any need to attach a prefix to it, 'proto' or otherwise.

count as an inference, one has to take their premises to support their conclusion in the right sort of way (where the right sort of way is cashed out as having a metacognitive intentional state whose content is an inferential rule). The picture of inference that emerges from these claims is of a process that is syntactic and metacognitive.

Some normative conceptual holists, such as Sellars (1953) and Brandom (1994), have taken a different approach to inference; their understanding of inference takes semantic relations to sit at the ground level and the formal features of inference, such as logical rules, are understood as a later development.⁵⁷ This means that inferential processes cannot be dependent upon following inferential rules because the development of inferential rules is parasitic upon inferential practices already being in place. In this chapter, I argue that the modified form of NCH that I have presented and developed over the previous chapters provides an alternative framework for understanding inference. First, drawing from the work of Sellars and Brandom, I argue that material inferences are the primary mode of inference. This shows that even if nonlinguistic content lacks the syntactic features that would allow formal rules of inference to operate on it, it does not rule out the possibility of inferences that involve nonlinguistic content. Second, I argue that Boghossian's account of inference is incapable of doing either of the two tasks that motivate its adoption in the first place: explaining the normativity of inference and

⁵⁷ McDowell has argued against Brandom's claim that one can be a participant in the space of reasons without a grasp of logical concepts (1997, pp. 161–162). However, his objections rest on the idea that the space of reasons is linguistic and that in order for a practice to be recognizable as a language, it must include logical concepts. Since the aim of this project is to develop an account of the space of reasons that is not necessarily linguistic, even if McDowell is right to claim that language requires logic, it is not particularly relevant here. Additionally, McDowell argues that semantic content requires the ability to make the goodness or badness of material inferences explicit, so that some form of formal evaluation is required for even the most basic forms of semantic content (p. 162). However, as I will describe in this chapter and the next, Brandom argues that the goodness or badness of material inferences can be expressed through basic practices, such as sanctioning individuals who make commitments that are incompatible with their previous commitments. McDowell does not provide an argument for why these sorts of basic practices are insufficient, so it is not particularly clear how to evaluate this claim. I note his objections here to make clear where my Brandom influenced account begins to diverge from McDowell's.

distinguishing inferences from other types of mental transitions. Finally, I argue that Brandom's externalist account of inference as a basic move in the game of giving and asking for reasons is able to both explain the normativity of inference and distinguish inferences from other sorts of mental transitions. While this chapter argues that Bermúdez's and Boghossian's arguments against the possibility of nonlinguistic inference do not apply to Brandom's and Sellars' inferentialist approaches, I will save any attempt to argue that nonlinguistic animals are capable of meeting the demands of this alternative model for the next chapter.

1. Bermúdez on Animal Inference

In the process of working out a model of nonlinguistic rationality in *Thinking Without Words*, Bermúdez argues that the standard inferential understanding of rationality cannot be applied to nonlinguistic animals because they lack the ability to make inferences (2003, p. 111). This may come as a surprise, as it comes on the heels of his claim that nonlinguistic animals can have determinate and structured thoughts that can be understood through a form of success semantics. The problem for ascribing inferential capabilities is that philosophers usually take practical reasoning to be argument-like, in the sense that a being's beliefs and desires are the premises that lead to an action playing the role of the conclusion. Evaluating whether or not an act is rational then depends on whether it conforms to:

...the dictates of what might be termed *procedural rationality* – that is, sensitivity to certain basic principles of deductive and inductive inference... Obvious examples are the familiar deductive principles of *modus ponens*, *modus tollens*, contraposition, and so forth, together with such basic principles of probability theory as that the probability of a conjunction can never be greater than the probability of its conjuncts; that the probability of a hypothesis and the probability of its negation should add up to 1; and so on (Bermúdez, 2003, pp. 110–111).

According to Bermúdez, the formal principles of procedural rationality operate on representations in virtue of their syntactic structure. However, it is not clear how the vehicles of

nonlinguistic thought can be structured in such a way that the formal rules of inference could be applied to them, even if the content of those vehicles is semantic (p. 111).

Furthermore, Bermúdez argues that logical concepts, such as conjunction, require metacognitive abilities which are only available through language. Or as Bermúdez puts it, “intentional ascent requires semantic ascent” (2003, p. 165). Conjunction is a truth-functional propositional operator, meaning that its use relies on some understanding of “how it serves to form compound thoughts whose truth-value is a function of the truth values of their parts” (p. 178). In other words, conjunction joins propositions into a compound thought that can only be true, if both of its conjuncts are true, and is false, if either of its conjuncts are false. Using or having conjunctive thoughts would then seem to require the ability to recognize that the truth value of one part of a thought can systematically affect the truth value of the whole thought. This ability, according to Bermúdez, requires thinking about thoughts as the bearers of content, and he argues that thinking about thoughts requires language (p. 164).

Bermúdez’s argument can be summed up this way: inferential capabilities require one’s thoughts to have a syntactic structure for the formal rules of inference to operate on and one’s thoughts can only have that syntactic structure if one is capable of thinking about the ways in which the parts of a thought can contribute to the truth-value of a whole thought. This requires language because it is only when a thought is put into linguistic form, such as a sentence, that one can interrogate it in this way. However, this conclusion is a little puzzling considering that Bermúdez is also willing to attribute proto-logical capabilities to nonlinguistic animals. While much of his discussion of animal reasoning is an attempt to show that instrumental beliefs that lead directly to action do not require the attribution of any inference-like mental transitions, he does acknowledge that thought and reasoning go together, and the attribution of the former to

nonlinguistic animals will require the attribution of the latter (Bermúdez, 2003, p. 140).

Bermúdez's strategy is to identify the ways in which nonlinguistic animals can conform to the logical patterns of inference without using logical concepts.

For example, Bermúdez argues that a proto-form of reasoning from an excluded alternative can be attributed to nonlinguistic animals if it is possible to show how protonegation can play a role in their thought processes (Bermúdez, 2003, p. 142). He takes pairs of conceptual contraries, such as presence and absence, to be able to fulfill this function. Contraries operate on the predicate of a thought, instead of on the whole thought or proposition. For example, 'Socrates is wise' in contrast to 'Socrates is unwise' involve contraries; whereas, 'Socrates is wise' is in contradiction with 'It is not the case that Socrates is wise.' If two claims are contradictories, then it is a consequence of the truth of one that the other is false and vice versa (as in case of negation in standard propositional logic), whereas contraries have a weaker relation (i.e., both cannot be true, but the falseness of one does not entail the truth of the other; for example, if Socrates does not exist, then both are false) (p. 142). Using contraries, Bermúdez is then able to explain the possibility of nonlinguistic reasoning.

For example, if an animal is trying to decide whether it is safe to approach a watering hole and knows that both a lion and a gazelle will not be at the watering hole at the same time, then the reasoning can be explained using the concepts of presence and absence. Bermúdez writes:

The reasoning here can be assimilated to standard conditional reasoning by treating the central premise as a conditional – namely, the conditional that if the gazelle is at the watering-hole then the lion is not at the watering-hole. The notion of protonegation shows how this can be understood without deploying propositional negation. The conditional in question becomes "If the gazelle is present (at the watering-hole) then the lion is absent (at the watering-hole)." Grasping this thought (apart from the need, to be explored hereafter, to develop a nonlinguistic analogue of the truth-functional conditional operator) is a matter

of understanding that presence and absence are contrary concepts. Any creature that understands that presence and absence are contrary concepts will also be able...to undertake reasoning approximating to *modus tollens*. Starting with the conditional “If the gazelle is present (at the watering-hole), then the lion is absent,” such a creature will be able to protonegate the consequent by forming the thought that the lion is present and hence to arrive at the protonegation of the antecedent (namely, “The gazelle is absent”). This inference is not valid in virtue of its form in the way an instance of *modus tollens* is valid in virtue of its form – that is to say, it is not an instance of a valid argument-schema. But it is of course valid in the semantic sense – that is to say, its premises cannot be true and its conclusion false (2003, pp. 143–144).

Bermúdez goes on to argue that conditional reasoning can be approximated through nonlinguistic thought processes that track causal regularities (p. 145-147). Protonegation and protoconditional reasoning allow nonlinguistic animals to reason in ways that are analogous to limited forms of inference rules, such as *modus tollens* and *modus ponens*.

Bermúdez argues that protoinferences are not enough to attribute an inference-based conception of practical reasoning to nonlinguistic animals for two reasons. The first is that the inferential understanding of practical reason requires the ability to reflect on possible outcomes and decide between them based on their value/likelihood (Bermúdez, 2003, p. 148). Since Bermúdez has already stipulated that intentional ascent requires semantic ascent, nonlinguistic animals will lack the necessary capabilities for these types of thoughts. The second is that protoinferences are insufficiently general because unlike the inferences modeled by propositional logic, they are not valid in virtue of their form (p. 148-149). Furthermore, that form cannot serve as a reason for a nonlinguistic animal’s inference because they lack the reflective capabilities to grasp inferential rules as truth-preserving.

While these are limitations for the mental acts that Bermúdez calls protoinferences, it is not clear why they are reasons for thinking that these mental acts are not proper inferences. If it is true that in order for a mental action to be an inference it must be general and reflective about

values/likelihoods, then this would at least push in the direction of a syntactic and metacognitive approach to inference. However, Bermúdez does not provide an argument for why inferences should be understood as having these features. In fact, it is far from clear that the inferences of neurotypical adult humans are reflective and general in the ways presupposed by Bermúdez. There is a growing body of empirical literature that shows that human inferences fail to be sufficiently general/reflective in the ways one would expect if there are metacognitive logical/probabilistic inference rules operating in the background (for helpful philosophical reviews of some of this research see Dutilh Novaes, 2012, pp. 113–160; Mercier & Sperber, 2017, pp. 15–48).

For example, the Wason selection task shows human subjects four cards, such as [A], [B], [4], [7], and then tells them each card has a number on one side and a letter on the other (Dutilh Novaes, 2012, p. 116). They are then asked to turn over all and only the cards that are necessary for verifying the following conditional: ‘If a card has an even number on one side, then it has a vowel on the other side.’ If the subjects were interpreting the conditional as the material conditional from classical logic, then one would expect them to turn over all the cards with either an even number or a consonant, for example [4] and [B]. This is perhaps easiest to recognize by remembering that a conditional is truth-functionally equivalent to its contrapositive (p. 116). In this case, ‘If a card has a consonant on one side, then it has an odd number on the other side.’ However, very few subjects turn over both [4] and [B] (Stenning & van Lambalgen, 2008, p. 49). They are much more likely to turn over [4] alone, or [4] and [A].

Human subjects tend to perform significantly better at selection tasks when the conditional has semantic content that they are familiar with. For example, in a task where the cards are [Manchester], [Leeds], [train], [car], and the conditional to be verified is ‘Every time I

go to Manchester I travel by train', over 60% of subjects were able to identify the right answer compared to only 5% in the original experiments (Wason & Shapiro, 1971). Further versions of the selection task seem to demonstrate that cultural knowledge plays a role in success rates. For example, British subjects were better at a task where the conditional was derived from a rule about stamps and envelopes in the United Kingdom's postal system (Johnson-Laird et al., 1972) than American subjects were (Griggs & Cox, 1982). Whereas American subjects had high success rates with a conditional about beer and the legal drinking age (Griggs & Cox, 1982).

Catarina Dutilh Novaes (2012) has argued that the selection tasks that subjects succeed at demonstrate that they are better at evaluating deontic conditionals than descriptive ones (pp. 122-123). A conditional is deontic if it is about how things ought to be, instead of how they are. She points to results where subjects succeed at evaluating conditionals that are clearly deontic but are based on the rules of made-up societies. So, what is important about the preceding results is not necessarily cultural familiarity itself but how cultural familiarity allows them to read the structure of the conditional. The cultural knowledge in the previous experiments allows British subjects to attribute:

...a deontic reading to 'If a letter has a second class stamp, it is left unsealed'; North American participants, in contrast, lacked background knowledge and interpreted the same conditional as a descriptive conditional. So the facilitating effect is related not to the very formulation of the conditional but to how participants interpret it (p. 123).

According to this line of reasoning, familiarity with the cultural meaning of the concepts used in the conditional can change how subjects interpret what type of inference is being used which then affects how well they are able to use that conditional in their reasoning processes. In other words, a subject's ability to make proper inferences is dependent upon the normative mood of the conditional, and that mood is often identified through cultural familiarity with the semantic composition of the conditional. If a subject's ability to make inferences is supposed to be

dependent upon a general process run by valid syntactical rules, then these results are highly puzzling.

There are also reasons to be suspicious of the idea that inferences involve reflection in accordance with probabilistic rules of inference about the likelihood of outcomes since human subjects are surprisingly bad at even basic probabilistic reasoning. For example, Tversky and Kahneman (1983) provided the following questionnaire to human subjects:

Linda is 31 years old, single, outspoken and very bright. She majored in philosophy. As a student she was deeply concerned with issues of discrimination and social justice, and also participated in antinuclear demonstrations. Please rank the following statements by their probability, using 1 for the most probable and 8 for the least probable.

- (i) Linda is a teacher in an elementary school.
- (ii) Linda works in a bookstore and takes Yoga classes.
- (iii) Linda is active in the feminist movement.
- (iv) Linda is a psychiatric social worker.
- (v) Linda is a member of the League of Women Voters.
- (vi) Linda is a bank teller.
- (vii) Linda is an insurance salesperson.
- (viii) Linda is a bank teller and is active in the feminist movement (p. 297).

Almost all of the subjects rank (viii) as more likely than (vi), despite the basic rule from probability theory that a conjunctive statement can only be equal to or less probable than both of its conjuncts. If Bermúdez's claim is right that inferences are the result of reflecting on the probabilities of certain outcomes in accordance with the basic rules of probability theory, then this result is also puzzling.

To be clear, I am not proposing that either of these results are knockdown objections to Bermúdez's account of inference. One way that Bermúdez could explain them away is to argue that these sorts of results show that the reasoning processes of neurotypical adult human beings are not always inferential and that some putative inferences should be reclassified as protoinferences. I am not trying to contest that this strategy or other sorts of strategies may be

available to Bermúdez. Instead, I am trying to show that it cannot be presumed without argument that inference is general and reflective and therefore syntactic and metacognitive. Bermúdez therefore needs an argument for where he draws the line between inferences and protoinferences. One plausible way to do this would be Boghossian's taking condition which defends an account of inference with features similar to Bermúdez's approach on the grounds that inference must be understood normatively.

2. The Taking Condition

Like Bermúdez, Boghossian is critical of the idea that inferential capabilities can be attributed to nonlinguistic animals (Boghossian, 2016). Boghossian has criticized Kornblith's claim that the flexible behaviour of piping plovers demonstrates their ability to reason. Reasoning, for Kornblith, is an inferential process that requires "transitions involving the interaction among representational states on the basis of their content" (2012, p. 55).⁵⁸ For Boghossian, inference requires something more than just the causal interaction of informational states. To show that there are transitions between mental states that are content-sensitive but do not count as inferences, Boghossian uses the example of a depressed individual, let's call him Larry, whose judgment 'I am having so much fun' leads to the judgement 'But there is so much suffering in the world' (2016, p. 42). This sort of thinking process is content-sensitive, but it is merely associative. The inferential ingredient that this sort of mental transition is missing is that Larry does not transition to the judgement about the level of suffering in the world because he *takes* his initial judgement to support it. Therefore, Boghossian argues for the taking condition which states that "a transition from some acceptances to a conclusion counts as inference only if

⁵⁸ In contrast to Bermúdez, both Boghossian and Kornblith do not make a distinction between reasoning and inference. I will follow their lead in regarding these two terms to mean roughly the same thing.

the thinker *takes* her conclusion to be supported by the accepted truth of those other acceptances, and draws her conclusion *because* of that fact” (p. 43).

Boghossian thinks that the taking condition is indispensable for mental transitions that rise to the level of inference because inferences are normative (2016, p. 49). Associative, content-sensitive transitions are something that could merely *happen* to a being, whereas inferences are something that people *do*. It is appropriate to hold others responsible for their inferences, and therefore, inferences have to be something that can be normatively evaluated. Transitions that meet the taking condition are normative because one can be held responsible for the reason behind their inference (p. 51). The reason for making an inference is that one has taken the premise(s) as the basis for their inference by having an occurrent taking state whose content is the inferential rule that supports the transition from the premise(s) to the conclusion (Boghossian, 2018, p. 67). It is the presence of this taking state that distinguishes inferences from other types of mental transitions and establishes their normativity (the reason that one can be held responsible for is the inferential rule that was used to make the inference).

The type of reasoning that most clearly meets the taking condition is what Boghossian calls Inference 2.0 (2018, pp. 56–57). In these types of inferences, one takes the premises to support the conclusion because they know the inference rule that “validates moving from the premises to the conclusion” (p. 57). To avoid worries about infinite regresses, Boghossian has been careful to note that taking states should be regarded as intellectual impressions or intuitions, not beliefs (this means that no inference is required to enter into a taking state which would immediately set off a vicious regress) (p. 62). Furthermore, he argues that no inference is required from a taking state because many mental states can guide behaviour without a further inference, such as the quick decisions of a tennis player (p. 63). To avoid accusations that his

conception of inference is overly intellectualistic, Boghossian has tried to show that quick, seemingly automatic inferences (Inference 1.5) and the inferences of human children (Inference 1.25) can meet the taking condition because the taking state can function tacitly in the inferrer's reasoning process (p. 64). Tacit taking states are mental states with intentional content that guide mental actions without the reasoner being conscious of them (pp. 66-67). Boghossian takes the fact that it is appropriate to use words like 'so' and 'therefore' for reasoning that meets Inference 1.5 as evidence that they meet the taking condition (p. 66). Similarly, children seem to understand terms like 'so' and 'so what?' at a young age, so Inference 1.25 can also meet the taking condition (p. 67).

Now whether one finds the taking condition plausible or not, it provides Bermúdez with a reason for thinking that the protoinferences he ascribes to nonlinguistic animals do not count as proper inferences. Protoinferences do not meet the taking condition because meeting the taking condition requires enough of a grip on rules of inference that they can be present in one's taking states. The taking condition shows why reflection and generality are essential to demarcating inference from other forms of mental transitions because the taking condition will likely require some form of reflection, even if the reflection comes before or after the actual inference, as it may in Inference 1.5, or if the reflection is merely tacit, occurrent, metacognitive states, as it will be in Inference 1.25. Generality is accounted for because the taking state is a form of rule-following, and if one is following inferential rules that are valid in terms of their form, then one's inferential abilities are not limited by one's non-logical concepts. Therefore, if inference is essentially normative and meeting the taking condition is necessary for its normativity, then Bermúdez has reasons for thinking that the mental processes of nonlinguistic animals do not

involve inferences, even if those mental processes run in accordance with logical principles like *modus tollens*.

In the next section, I will argue that there is an NCH account that can provide a non-syntactic understanding of inference. This model is based on what Sellars and Brandom call material inferences and I will show how they can account both for inferential practices and for the development of more formal inferential rules. I will then show, in the following sections, that this semantic account of inference, along with an externalist account of normativity, is better able to accomplish the aims that motivate the adoption of the taking condition.

3. Material Inferences

As discussed in Chapter 3, both Sellars and Brandom have argued for the existence and importance of a semantic form of inference they call ‘material inference.’ The correctness of a material inference “involve[s] the conceptual contents of its premises and conclusions” (Brandom, 1994, p. 97). For example, the inferences from ‘Halifax is to the East of Montréal’ to ‘Montréal is to the West of Halifax’, and from ‘It is raining’ to ‘The streets will be wet’ are both good material inferences. Both Sellars and Brandom argue that the connections between the concepts in the premises and conclusions underwrite the correctness of these inferences, even though they are not logically valid. Brandom argues that “endorsing these inferences is part of grasping or mastering those concepts quite apart from any specifically logical competence” (1994, p. 98). One way for a formalist, such as Bermúdez, to maintain that these inferences rest on logical principles is to argue that they are actually enthymemes: logically valid arguments with suppressed premises (Sellars, 1953, p. 313). The latter inference would then be something like: ‘If it is raining, then the streets will be wet. It is raining. Therefore, the streets will be wet.’

In contrast, Sellars and Brandom argue for a semantic understanding of inference where “materially good inferences correspond to the conceptual content of nonlogical expressions, while inferences valid in virtue of their logical form alone correspond to the conceptual content of purely logical expressions” (Brandom, 1994, p. 102). For Sellars, material inferences have explanatory priority because he thinks that it is only possible to explain the use of subjunctive conditionals, which he regards as essential to scientific practice, if one already has material inferences at their disposal (1953, p. 325). Sellars argues that sentences like ‘Since every time it rains the streets are wet, if it were to rain the streets would be wet’ cannot be explained exclusively by logically valid inferential rules because any attempt to replace the sentence’s components with logically valid parts will either eliminate the subjunctive mood by replacing the subjunctive conditional with a material one, render the sentence always true (whatever the merits of the above sentence, it at least seems possible for it to be false), or implicitly rely on material inference rules (to say that rain entails wet streets is equivalent to saying that one can infer wet streets from rain) (p. 324-325).

Brandom’s argument is clearly inspired by Sellars’ but is broader in scope and focuses on the developmental relation between formal and material inferences. He argues that material inferences have explanatory priority because one can derive the notion of formally good inferences from materially good ones, but not vice versa (1994, p. 104). In brief, his argument is that with a working notion of materially good inferences one can isolate logically valid ones as a subset of materially good inferences by identifying which ones involve logical vocabulary and remain good inferences when nonlogical vocabulary is substituted for nonlogical vocabulary. So, in the inference, ‘I went to the store and I bought chips, therefore I bought chips,’ the logical vocabulary, such as ‘and,’ cannot be substituted without affecting the strength of the inference,

whereas nonlogical vocabulary, such as ‘I went to the store’ can. However, according to Brandom, other types of materially good inferences can be identified in virtue of their form by privileging other types of vocabulary as non-substitutional, such as moral or zoological vocabulary. This means that form alone is not enough to identify the set of formally valid inferences. One has to also pick out a vocabulary or a set of concepts as logical.

Brandom argues that Frege’s *Begriffsschrift* is an example of this sort of project. The *Begriffsschrift* privileges a set of vocabulary because it makes explicit the “content-constitutive commitments that were implicit in prior inferential practice” (Brandom, 1994, p. 110). In other words, vocabulary is marked as logical because it is the vocabulary that makes the norms of inferential practices explicit. One cannot move in the other direction, from formally valid inferences to materially good inferences, because the set of materially good inferences contains inferences that are not formally valid. What is lost is not necessarily an explanation of materially good inferences (because they can still potentially be explained through enthymemes), but an explanation of formally good inferences since they are no longer identified through an expressive project. Instead, they are put in a platonic position of always “already standing behind every propriety of (in this case inferential) practice” (Brandom, 1994, p. 110).

For Sellars and Brandom, material inferences provide a semantic understanding of inference that, according to them, is necessary for understanding the more formal modes of inference. The syntactic forms of inference that Bermúdez uses to rule out attributing inferential capabilities to nonlinguistic animals are a special category of material inference that was developed by Frege and others to express “the inferential role of ordinary, nonlogical concepts” (Brandom, 1994, p. 109). Logical vocabulary allows one to make explicit what is already implicit in the doing of inference. It allows us to put our inferential patterns into the form of a

reason that one can then give and ask for reasons for. Importantly, making the form of an inference explicit does not explain the ability to make inferences (p. 112). Instead, the ability to express the form only makes sense if it is “coherent to talk about inference prior to the introduction of specifically logical vocabulary, and so prior to the identification of any inferences as good in virtue of their logical form” (p. 110). In other words, from Sellars’ and Brandom’s viewpoints, the sorts of inferences that Bermúdez characterizes as protoinferences, which require one to grasp the semantic connections between concepts, are the wider category of inference, and the syntactic form of inference that Bermúdez privileges can be developed or derived from it.

Furthermore, material inferences provide an alternative reading for some of the limitations of nonlinguistic animal inferences that have been used to argue against attributing concepts to nonlinguistic animals. For example, Susan Hurley has argued that the difficulty that nonlinguistic social primates, such as chimpanzees, have with making transitive inferences about objects, despite being able to make transitive inferences about social relations with ease, demonstrates that they lack conceptual capabilities (2003, pp. 238–239). She writes that:

...a creature with conceptual capabilities can decompose, transfer and recombine the conceptualized intrapositional elements of information, and thus can recognize fine-grained inferential structures, such as that involved in transitive inferences, that are common to quite different contexts. The exercise of such recombinant conceptual abilities liberates reasons to operate across contexts; conceptual abilities underwrite inferential promiscuity (p. 239).

The picture that Hurley seems to be painting here is one where concepts provide a kind of domain-general type of knowledge or ability because they allow one to recognize that valid “inferential structures” can apply across domains. First, we have already reviewed evidence that this sort of picture of human reasoning may not be an accurate one. Transitive inferences about objects are more likely to be regarded as descriptive, whereas the concepts involved in social hierarchies are more likely to be interpreted deontically, especially if one is a part of those

hierarchies. Second, the transitive inferences involved in social practices are likely constructed out of social concepts, such as dominance and submission, or juvenile and adult. These concepts, especially ones having to do with hierarchy, can underwrite materially valid inferences without any reference to formal transitive structures. One could make a formal transitive rule explicit, but as noted earlier, such a rule should not be regarded as explanatory; instead, it expresses the inferential norms involved in the form of a reason, and its very expression relies on there already being materially valid inferential practices in place.

In this section, I have argued that there is an alternative to Bermúdez's formal understanding of inference. Material inferences construct and are constructed by the semantic connections between concepts. In other words, inferences do not require atoms with syntactic features for the formal rules of logic and probability theory to operate on. However, while this may push back against the idea that the syntactical account of inference is the only game in town, it is not immediately clear that it can account for the two reasons for adopting the taking condition. If it cannot explain the normativity of inference and distinguish inferences from other forms of mental transitions, then Boghossian could argue that what Sellars and Brandom call material inferences are just associative mental transitions that fail to be proper inferences because they fail to be guided by the logical rules of taking states. One possible way to push back against this objection would be to argue that taking states have semantic inferential rules as their intentional content. While I think that this could be a coherent strategy (though one that seems redundant considering that material rules of inference tend to just be restatements of the material inferences they are underwriting), I will instead argue that taking states are not capable of doing either task that Boghossian uses to motivate their adoption. I will then argue that an externalist account of the normativity that treats material inferences as basic moves in the game

of giving and asking for reasons is able to both account for the normativity of inference and demarcate between inferences and other forms of mental transitions. This result not only means that taking states are not needed for inferences, but it also undercuts Boghossian's reason for adopting the taking condition.

4. Identifying Inferences in the Wild

As noted earlier, Boghossian rejects Kornblith's attempt to characterize inferences as mental transitions that are sensitive to the relations between contents. Boghossian argues that Kornblith's approach fails to account for the "normative features" of reasoning (2016, p. 49). He writes that "you can be held responsible for the way you reason; and you can be blamed for having reasoned badly and praised for having reasoned well" (p. 49). Additionally, Boghossian claims that an account of inference needs to be able to demarcate between inferences and other forms of mental transitions. Here, the normativity provided by the taking state can provide the distinction between inferences and other types of mental transitions, such as Larry's transition from 'I am having so much fun' to 'But there is so much suffering in the world.' Now, I think Boghossian is right to see these two criteria as connected. In order to hold others responsible for their inferences, in other words, to make sense of the normativity of inference, we must be able to distinguish inferences from other forms of mental transitions. Otherwise, it would not be possible to know if we were appropriately holding others responsible or not. In this section, I will argue that Boghossian's account of taking states will not allow him to reliably identify inferences in the wild,⁵⁹ and therefore taking states will not be able to account for the normativity of inference.

⁵⁹ I am using the phrase 'inferences in the wild' to simply mean inferences that are not already stipulated as such by the way they are framed in a toy example. Identifying an inference in the wild is the task of considering whether an individual, whether a human or nonhuman animal, has actually made an inference instead of some other form of mental transition.

In order to identify inferences based on the taking condition, we need to be able to do two things: first, we need to be able to identify when someone has made an inference because of a taking state, and second, we need to be able to identify when someone has merely made a mental transition because they lacked a taking state. So, clearly, we need some way to identify instances of taking states that will also rule out instances where no taking state has occurred. Let's start with Boghossian's example of Larry's non-inferential mental transition from 'I am having so much fun' to 'But there is so much suffering in the world', and let's imagine that we have actually encountered this transition in the wild. What would it take to determine that Larry's mental transition is not an inference? Clearly, we need to establish that Larry lacks an occurrent taking state, whether tacit or not, when making his mental transition.

The problem is that this example is only clearly not an inference because Boghossian has stipulated that Larry is not taking his premise to support his conclusion. If one was actually trying to show that a transition like this was not an inference, they would need to show that Larry was not tacitly following some strange inferential rule. The taking state is supposed to be involved in both good and bad inferences (Boghossian, 2016, pp. 42–43), so an irrational or unusual mental transition does not necessarily indicate that the transition is not an inference. It is the content of the taking state that allows one to hold others responsible for their inferences, so it has to be possible for inferences to be made involving deviant or bad inferential rules.⁶⁰ Furthermore, in order to avoid charges of over-intellectualism, Boghossian argues that taking states can be tacit, meaning that the individual making the inference may not even be aware that he is taking the premises to support the conclusion based on such an inferential rule. The

⁶⁰ Following Susan Haack's (1996) suggestive use of the term, I am using the term 'deviant' to refer to inferential rules that are a part of or come from non-classical logics or forms of reasoning. Therefore, deviant rules, depending on one's perspective, are not necessarily bad inferential rules.

combination of these two claims, (1) that the taking state can be tacit and (2) that it can involve deviant or bad inferential rules, makes it difficult to see how one could rule out the existence of a taking state for any apparent non-inferential mental transition.

One could argue that even if Larry is following a rule, it does not count as an inferential rule because it is not sufficiently general. Even bad inferential rules, like affirming the consequent, are as general as good inferential rules. So, even if Larry is following a rule, it lacks sufficient generality to count as inferential. First, it is not clear that this is true. Larry could be following a rule as general as ‘for any x, infer “But there is so much suffering in the world.”’ One might be tempted to argue that the above rule of inference is not valid in virtue of its form and therefore cannot be an inference, but neither is affirming the consequent. Perhaps one could argue that in order to count as an inferential rule, the rule must be entirely syntactic. However, it is not clear that even this stipulation will rule out Larry’s mental transition as an inference. As anyone who has taken an Intro class in logic is aware and as early analytic philosophers were keen to stress, the logical form of a sentence cannot be straightforwardly read off its surface grammar. Translating a proposition into its logical form takes some skill and practice. Furthermore, as was mentioned earlier, one’s cultural familiarity with the semantic content of a sentence may actually change one’s interpretation of its form. So, it is entirely possible that Larry is reading off a deviant logical form that is purely syntax and then using that to infer from the premises to the conclusion using a completely general rule that is also exclusively syntax. Even if Larry says otherwise, we cannot rule out this possibility because the taking can still be entirely tacit, and so even he could be unaware of his taking state or its intentional content.

In his evaluation of Kornblith’s attribution of reasoning processes to piping plovers, Boghossian argues that “you don’t count as having reasoned well just because your conclusion

follows from your premises” (2016, p. 50). This is because Boghossian thinks that there is distinction between evaluating the argument involved in reasoning and evaluating the process of reasoning itself. The considerations above show that the reverse is true as well. You do not count as having not reasoned just because your conclusion does not follow (or does not seem to follow) from your premises because one could always be taking the conclusion to follow from the premises whether they are aware of it or not. This means that the taking condition does not provide a way to identify which mental transitions we should not hold others responsible for. Identifying which mental transitions we should hold others responsible for is equally fraught.

In order to identify inferences in the wild, we will need a way to identify which mental transitions involve taking states. So, what exactly is a taking state? Let’s start by identifying a taking state from a first-person perspective. In his model of Inference 2.0, Boghossian characterizes a taking state as “explicitly tak[ing] the premises to support the conclusion” (2018, p. 57). The taking is grounded in knowing “the properties of the premises in virtue of which they support the conclusion (know[ing] the epistemic principle that validates moving from the premises to the conclusion)” (p. 57). So, in its most explicit form (suspending any and all possible concerns about Carrollian regresses),⁶¹ a subject could recognize that they are making an inference because they take the conclusion to follow from the premises (a metacognitive evaluation of a possible mental transition), and that taking is established by their knowledge of an inferential rule, such as *modus ponens*. Let’s presume (for the meantime) that this identification of a taking state from a first-person perspective is unproblematically possible.

Now, how does one identify when others are using a taking state alongside their mental transitions? Before trying to answer this question, it is first worth noting that Boghossian creates

⁶¹ Referring to the type of regress pointed out by Lewis Carroll (1895) in his classic paper “What the Tortoise Said to Achilles.”

a number of further barriers for identifying a taking state from a third-person perspective. As mentioned already, Boghossian (2016) rules out evaluating the content-sensitive mental transitions of piping plovers as inferences because “you don't count as having reasoned well just because your conclusion follows from your premises” (p. 50). Boghossian points out that one can make a mental transition in the form of *modus ponens* merely by mistake, or the apparent reasoning could be the result of hard wiring. The reason mistaken or hard-wired mental transitions do not count as inferences is because the reasoner does not arrive at their conclusion by taking the premises to support it. In both cases, what seems to be lacking and what Boghossian takes the taking state to provide is some form of control that not only explains one's behaviour but rationalizes it. Boghossian (2018) writes that:

Inference, as I have characterized it, is mental behavior and, so, for it to make sense to hold you responsible for your inferences, inferring has to be something you do, and not just something that happens to you. It has to be a mental action of yours, something you have control over, and which you could have done differently, had you thought it desirable to do so (p. 60).

When it comes to the piping plover, “if we keep in mind that the notion of control, in the sense of its being possible for the thinker to have done otherwise, is important to our conception of mental action, then it is hard to see the non-human animals as qualifying” (p. 61). While the piping plover may seem to adjust her behavioural responses based on inferential assessments, without the ability to attribute a taking state to her, Boghossian (2016) thinks that a much more likely explanation for her behaviour is that “a complex [hardwired] algorithm...called for it to do distinct things under distinct input conditions” (p. 51).

Boghossian's emphasis on freedom and control creates further difficulties for simply using metacognitive psychological taking states as markers for inferences. Many philosophers have identified metacognitive deliberation as the capability that provides human beings with

rational control and therefore freedom. However, if metacognitive states are interpreted as psychological states, it is not entirely clear why one should regard them as any freer than first-order mental processes.^{62,63} First-order mental processes/states are often taken as lacking freedom by philosophers because, as psychological processes/states, they are causally determined; however, second-order mental processes/states, like the taking state, are also psychological states, so it is unclear why the same argument would not apply to them. Hence, if the taking state is part of a metacognitive psychological process, then it seems just as causally determined as any other sort of psychological process, including first-order psychological processes.

However, I suspect that Boghossian does not view the relation between the taking state and the inference as merely a causal relation. In his discussion of epistemic rules, he writes that “if I am following the rule Modus Ponens, then my following that rule *explains and rationalizes* my concluding q from p and ‘if p and q’...” (emphasis mine, Boghossian, 2008, p. 132). The “rationalizes” part of this explanation has led Boghossian to argue that naturalistic approaches cannot explain rule-following because rule-following is inherently normative. This helps explain

⁶² I am excluding compatibilist notions of freedom descended from Hume because Boghossian takes the taking condition to be a major challenge to naturalism (2014, p. 18), as detailed below. While Boghossian may think that the challenge comes from something other than the necessity of freedom, the turn to either a substance dualist approach or a Kantian dual-perspectives approach (which I take to be Boghossian’s possible options) would be strange bedfellows with compatibilism. Either way, there are significant challenges to using compatibilism to account for the freedom or agency of mental action, above and beyond those that face compatibilist accounts of free action (Engel, 2009). For this reason, most arguments for mental agency come (either implicitly or explicitly) from a Kantian perspective. Now, whether Kant’s own notion of freedom is a type of compatibilism is controversial, but this interpretation is at the very least rejected both by Kant, who derided compatibilist forms of freedom as providing the “freedom of the turnspit” (1788, 5:96-97), and by many interpreters of Kant (e.g., Vilhauer, 2004).

⁶³ Denying determinism does not necessarily solve the problem either. For example, a libertarian would owe us some story about how a psychological state (the taking state) can lead to another psychological process (inference) being free in a metaphysically robust sense. Many contemporary forms of libertarianism argue that the freedom must come over and above the reasons that an agent has for doing something, otherwise the reasons are determining their actions (van der Vossen, 2019). To say that the reasons are sufficient would be to drift back into a Kantian approach (see the previous footnote, as well as my discussion of Korsgaard and Kant below). So, a libertarian approach could undermine the idea that the taking state is sufficient for the freedom necessary for responsibility, meaning that the necessity of responsibility for a mental transition to count as an inference is not necessarily an argument for the taking condition from a libertarian perspective.

his claim that if taking is necessary for inference, then “reasoning poses as much of a challenge to a naturalistic worldview as does consciousness. It makes it difficult to see what naturalistic process inference could consist in” (Boghossian, 2014, p. 18).

If takings are not metacognitive psychological states that can be used in scientific explanations, then I see two possible alternatives for Boghossian. The mention of consciousness in the previous remark suggests that Boghossian could be identifying taking states as part of a scientifically inaccessible substance. This approach seems particularly unpromising; in order to avoid the types of causal interaction problems between material and immaterial substances that Princess Elisabeth (1994) pointed out to Descartes, in addition to concerns about violating the basic laws of physics, most substance dualists in contemporary philosophy of mind are epiphenomenalists (e.g., Jackson, 1982). An epiphenomenalist account of the taking state would not be able to explain inferences, where an inference is understood as a normative mental transition. Epiphenomenal states can be causally impacted but can have no causal impact themselves, so an epiphenomenal taking state would not be able to influence causal processes like mental transitions. If it has no causal influence, then it is unclear how or why one could be held responsible for a mental action on the basis of a state (the epiphenomenal taking state) that had no influence over said action. Boghossian can insist on more than just causal influence, but his account collapses if he lets go of any causal influence.

The second alternative is that taking is something that is part of our practical viewpoint on ourselves and others, involved in the reflective processes we take up as choosing agents. For example, in her interpretations of Kant, Korsgaard has argued that we are able to take both practical and theoretical perspectives on ourselves and others (1996, p. 204). The theoretical perspective is the one we take when we see ourselves and others as part of the natural order of

things that can be described using the deterministic language of science. The practical perspective is one that we take when we regard ourselves as agents that have to make choices. From the practical perspective, freedom cannot be denied because, even if we take ourselves as causally determined, we still find ourselves coming face to face with decisions that require us to make choices. In other words, the practical perspective presupposes (and burdens us with) free will. According to Korsgaard's Kantian approach, these two perspectives are mutually exclusive. One provides explanation and the other justification, and we end up in metaphysical difficulties when we inappropriately allow the two to overlap (1996, p. 204).⁶⁴

While I am more sympathetic to a Kantian approach than substance dualism, it does not solve the problem at hand. It is not clear how one can identify others as taking their premises to support their conclusions when this sort of state is only accessible from the first-person perspective of justification. Korsgaard attempts to get around this sort of problem by arguing that one must simply hold it as a practical postulate that others are rational beings (1996). The problem is that this does not provide any guidance for which beings we should hold the postulate for. Furthermore, even if we can figure out whom it is appropriate to hold this postulate for, it is only of limited help for Boghossian's aims because we are not trying to identify which beings are rational; we are trying to identify which mental processes count as inferences and which do not. The generalness of a postulate would be unhelpful here because we need to be able to sort mental transitions from inferences for beings that presumably do both. The problem for Boghossian, in

⁶⁴ Some commentators think that Korsgaard is just wrong on this front and that theoretical considerations can enter the practical perspective (e.g., Frierson, 2010). However, this result does not make it any easier to identify the taking states of others from a practical perspective. In "Kantian Animal Moral Psychology", I (forthcoming) argue that allowing this overlap means that attempts to argue that others have or lack the ability to freely choose their actions on the basis of whether they are rational or irrational will ultimately equivocate in the use of the term 'rationality.' For Kantians, establishing rationality as the grounds for freedom requires rationality to be a noumenal process free of causal influence, whereas the psychological processes that one identifies as rational when determining whether others are rational or irrational are strictly phenomenal. In that paper, I argue that this means that the possibility of nonhuman animal morality cannot be ruled out on Kantian grounds.

other words, is that he needs to be able to identify not just which individuals are responsible for their actions, but additionally which actions they are responsible for.

Now, it may seem that I have been delaying the obvious response that will clear away all of these troubles. Surely, we can identify inferences by observing linguistic behaviour and if that is not sufficient, we can ask linguistic beings whether they took the premises to support the conclusion. However, Boghossian's own arguments create major difficulties for the first suggestion. As already mentioned, making valid transitions is not sufficient for meeting the taking condition. Boghossian has suggested that the use of terms like 'so' and 'therefore' can identify when inferences are happening (2018, pp. 66–67). This is likely true (at least some of the time). However, notice that in these cases it is not the taking state that is distinguishing between inferences and other forms of mental transitions; it is the use of the terms 'so' and 'therefore'.

Benjamin Winokur has argued that there are inferences that require “nothing over and above what Christopher Peacocke calls ‘second-tier’ thought: thought that is about ‘relations of support, evidence, or consequence between contents’” (2021, p. 81). Importantly, making inferences that involve second-tier thoughts does not require the thinker to have any form of self-knowledge about their beliefs as beliefs. While Winokur's picture remains meta-propositional, its meta-ness is on the level of content. Propositional contents in inferences can have epistemic support relations built into them which can be signaled through the use of terms like 'so' and 'therefore'. I am not necessarily endorsing Winokur's conception of inference here. Instead, what I think it highlights is that while the use of 'so' and 'therefore' may help us distinguish inferences from non-inferences, there is nothing about those terms/concepts that shows that it is the taking state that is doing the work here. They identify inferences, not taking states. One can

only take them to identify taking states if one has already presupposed that inferences always involve taking states. But this would be question begging, and furthermore would undermine Boghossian's claim that inferences can be distinguished by whether or not there are occurrent taking states. If terms like 'therefore' are doing the work, it would seem that one is identifying taking states on the basis of inferences, instead of the other way around. Additionally, if Winokur is right that concepts that signal relations of epistemic support can function on a content level without an additional taking state (tacit or not), then Boghossian would be forced to classify these apparent instances of inference as mere mental transitions.

Asking an individual about their mental processes will not necessarily be helpful either. Even if someone tells us that they made a particular inference because they took the premises to support the conclusion, it seems entirely possible that they could be misreporting their own reasoning process. Experimental work has shown that people's reasons for making choices are often opaque to them and that opaqueness can also be opaque to them. For example, in experiments where subjects were asked to choose between four nylons and then give reasons for that choice, the subjects would explain the differences between the nylons as supporting their choices, even though (unbeknownst to subjects) the nylons were exactly the same (Nisbett & Wilson, 1977). Subjects were much more likely to choose the right-most stocking but would not provide the position of the product as a reason for picking it and, if pressed, would deny that its relative position was a reason for their selection. Now, I do not want to take this form of skepticism too far. It seems plausible to me that, at least some of the time, individuals can accurately report on their mental processes. However, we will still need some way to determine in which instances they have accurately reported the existence of a taking state and which instances they have not.

The problem is that, as noted earlier, it seems like a taking state is something that is only accessible from a first-person perspective, either as a part of our practical perspective on the world or as part of a non-material substance. This leaves us with no third-person way to determine the accuracy of reports on taking states. This means that there is no reliable way to determine if it is appropriate to hold someone responsible for their inferences/mental transitions, even if they tell us which ones have taking states and which ones do not.⁶⁵ To sum, taking states cannot be used to identify inferences in the wild, which makes it unclear if we can ever know if it is appropriate to hold an individual responsible for their mental transitions. Therefore, if satisfying the taking condition requires a taking state as outlined by Boghossian, then it cannot do the very tasks (accounting for the normativity of inference and distinguishing inferences from other sorts of mental transitions) that motivated its adoption in the first place.

5. An Externalist Account of the Normativity of Inference

In the face of these difficulties, I will argue that the normativity of inference and distinguishing inferences from non-inferences can be done by Brandom's inferentialist framework. This may come as a surprise to some readers, since Brandom's account is largely viewed, including by Brandom himself (1994, p. 133), as starting from the assumption that inferences are an already distinguishable practice (Valaris, 2020, p. 7). However, I argue that Brandom's externalist and phenomenalist account of normativity, combined with his identification of inference as a basic move in the space of reasons, is enough to fulfill the two tasks that Boghossian identifies as essential for theories of inference.

⁶⁵ I want to be clear about the narrowness of my skepticism here. I am not motivating anything like metaphysical behaviourism or radical skepticism about mental state reports. My skepticism is narrowly directed at our ability to assess individuals' reports about taking states given the way Boghossian has characterized them. In the case of the nylons, we have a way to assess the accuracy of a reported reason, but Boghossian's characterization of taking states and their role in inferences cuts off any ability to do something similar when it comes to reports about taking states.

For Brandom, inferences are a “certain kind of move in the game of giving and asking for reasons” (1994, p. 158). This means that inferring is “an aspect of an essentially social practice of communication” that takes place in an “interpersonal context” (p. 158). To make a move in the game of giving and asking for reasons is to make a commitment, or more specifically, it is to act in such a way that others regard one as having made a commitment or having an entitlement to make a commitment. What makes a performance a commitment is that it leads others to regard one as committed to further performances of some sort. For instance, the performance of signing a contract is a commitment because others expect one to either refrain from certain performances or be beholden to make further performances upon undertaking that commitment (p. 161). A performance is entitling, if others see one as having permission to make further performances upon receiving that entitlement. For example, all other things being equal, receiving a theatre ticket entitles one to enter the movie theatre (p. 161).

For Brandom, what makes these performances normative practices, instead of mere regularities, is that others regard them as appropriate or inappropriate based on the commitments and entitlements that one has already undertaken (1994, p. 161). Undertaking a commitment is “to do something that makes it appropriate to attribute the commitment to that individual” (p. 162). The attitudes of others (i.e., attributing and acknowledging commitments and entitlements) are what give a performance its deontic status. The responsibility that one takes on in making a commitment can be understood as “authorizing, licensing, or entitling those who attribute that commitment to sanction nonperformance” (p. 163). Sanctioning itself can be deemed appropriate or inappropriate and so sanctioning is what allows others to express their normative evaluations, but those expressions can also be normatively evaluated. Brandom writes that “normatively internal definitions of the significance of changes of deontic status, which specify the

consequences of such changes in terms of further changes of deontic status, link various statuses and attitudes into systems of interdefined practices” (p. 163). Individuals keep track of the commitments and entitlements of others and themselves and the ways in which the performances of others and themselves affect those deontic statuses. This process is called scorekeeping.

For Brandom, there is nothing more to the fact that we hold each other responsible for our inferences than the fact that we are disposed or willing to reward or sanction individuals because we deem their inferences appropriate or inappropriate, based on the commitments and entitlements we have attributed to them (1994, p. 163). This explanatory strategy is referred to as phenomenalism because normativity is explained by the attitudes we take towards each other (Loeffler, 2005, p. 33). There is no metaphysical entity/property, such as a soul, rationality, or dignity, beyond the attitudes of taking and treating others as responsible, that underlies or explains our responsibility for our commitments. Brandom thinks that semantic practices can be entirely explained from this third person perspective. To emphasize the externality of this account, he gives the example of army recruitment tactics where individuals who lacked money for their next pint could be offered a ‘queen’s shilling’ which would pay for the next round but would also commit the individual to joining the army the following morning (Brandom, 1994, p. 162). For Brandom, whether the unlucky recipient is aware of the fact that the queen’s shilling commits them to service in the army is largely irrelevant; either way, they are responsible for their commitment because others regard them as committed.⁶⁶

The two types of deontic statuses (commitment and entitlement) generate two types of normativity for inferences: committive and permissive (Brandom, 1994, p. 168). Committive

⁶⁶ Of course, the attribution of that commitment can be normatively evaluated as well, so that one should not regard an individual who did not receive the queen’s shilling as committed to army service (Brandom, 1994, p. 163).

inferential relations are commitment preserving ones. Formal deductive inferences are a type of committive relations because if one is committed to the premises, they should also be regarded as committed to the conclusion. However, many materially good inferences are also committive, such as “Thunder now, so lightening earlier” (p. 168). Permissive inferential relations are entitlement preserving ones. So inductive inferences involve permissive relations, in that if one is committed to the premises of an argument, they are entitled to the conclusion. Incompatibility relations can also be defined through the deontic statuses of commitment and entitlement. Two performances are materially incompatible if “commitment to one precludes entitlement to the other” (p. 169). Brandom spends significant further time developing his pragmatic account of the normativity of inference, and I will show how it can be applied to the social practices of nonlinguistic animals in the following chapter. However, first I will argue that this externalist account of normativity can meet Boghossian’s two motivations for adopting the taking condition.

First, Boghossian argues that an account of inference needs to show why it is appropriate to hold others responsible for the inferences they make. I have argued that an account that emphasizes an entirely internal taking state that cannot be accounted for from a third-person perspective will not be able to meet this condition. On the other hand, Brandom’s externalist model takes it to be appropriate to hold others responsible for their inferences because the commitments and entitlements that have been socially attributed to them limit and license the types of moves they can make in the game of giving and asking for reasons. If an individual makes an inference, the appropriateness or inappropriateness of that move is evaluated by others, based on the types of commitments and entitlements they have attributed to the individual, and that appropriateness or inappropriateness is expressed by a disposition or willingness to reward or sanction that individual for that move. It is appropriate to hold others responsible for their

inferences by rewarding or sanctioning them because others, sometimes including the individual receiving the reward or sanction, can evaluate the rewarding or sanctioning itself and express whether it is appropriate or inappropriate by rewarding or sanctioning the evaluator (and so on). There is no need to identify a metaphysical connection between some capacity and freedom; there is only the socially evaluative practices that generate normativity and determine what is appropriate or inappropriate by rewarding or sanctioning claims.

Second, Boghossian argued that an account of inference needs to be able to demarcate between inferences and other types of mental transitions. He claimed that it was the normativity provided by the taking state that made the distinction between inferences and other mental transitions, such as Larry's transition from 'I am having so much fun' to 'But there is so much suffering in the world.' Boghossian was right to think that the distinction between inferences and other forms of mental transitions was drawn by normativity; however, he was wrong to think that the taking state could provide this distinction. Let's stipulate with Boghossian that Larry's mental transition is not an inference. Can Brandom's account also rule out Larry's mental transition as an inference in a way that will allow for a demarcation between inferences and other types of mental transitions? The idea that inferences are basic moves in the game of giving and asking for reasons that are either committive or permissive is helpful here. The question is then: Can Larry's mental transition be understood as either giving or asking for a reason in a committive or permissive way or as the internalization of such a process?

The transition from 'I am having so much fun' to 'But there is so much suffering in the world' does not seem to be commitment preserving. The transition may be sensitive to content (in a Kornblithian way), but it is neither materially valid (restricted by the relations between the concepts) nor formally valid. To put this in a way that can show that I am not inadvertently

presuming a background taking state, if someone asked Larry for a reason for the conclusion ‘There is so much suffering in the world’, the asker would not accept ‘I am having so much fun’ as the giving of a reason that shows the preservation of a commitment between the two claims.⁶⁷ However, the case from permissive inferences is less clear. If the interlocutor asks (to put it as explicitly as possible) ‘why are you entitled to the conclusion ‘there is so much suffering in the world?’’, the response of ‘I am having so much fun’ may still seem insufficient. However, Larry could put it this way: ‘the transition from ‘I am having so much fun’ to ‘But there is so much suffering in the world’ is entitlement preserving because there is nothing about the commitment ‘I am having so much fun’ that rules out my entitlement to ‘There is so much suffering in the world.’ Therefore, the transition is an entitlement preserving inference.’

One possible way that an inferentialist may want to push back against this conclusion, is to argue that there is nothing about the content of ‘I am having so much fun’ that entitles one to ‘There is so much suffering in the world.’ While one may be entitled to ‘There is so much suffering in the world’ even if they also are committed to ‘I am having so much fun’, there is nothing about being committed to ‘I am having so much fun’ that makes one entitled to ‘There is so much suffering in the world.’ To be clear, I think the general outline of this response is right, but it is not one that Brandom’s inferentialist framework is entitled to, at least as is. The reason is that Brandom’s framework in *Making it Explicit* does not provide a way for limiting the commitments that one remains entitled to after a given commitment other than by ruling out the ones that commitment cuts off through incompatibility where a commitment “precludes

⁶⁷ One might worry that Larry could be following some deviant rule which therefore makes the transition an inferential one. However, remember that Brandom’s account is phenomenalistic and externalist; it does not matter what Larry *takes* himself to be doing. It depends on whether we, as Larry’s discursive community, regard him as making a transition (mental or otherwise) that he should be held responsible for. So the point here is just that by the standards of the community, Larry is not making a committive inference, good or bad, because it does not fit in the general parameters that we have for judging committive inferences (materially or formally valid inferences).

entitlement” to another (1994, p. 160). So, while the concepts in the premise can limit some entitlements if those entitlements are materially precluded by the concepts in that premise, they do not prescribe or even suggest a conclusion from the remaining open entitlements in any way.

While I think Brandom’s framework lacks the ability to make this kind of response as is, this likely comes from his focus on committive inferences that are made explicit through deductive rules of inference, instead of permissive inferences that are made explicit through inductive rules of inference. However, Javier González de Prado Salas et al.’s (2021) expansion of Brandom’s framework to account for inductive inferences and other forms of scientific reasoning provides a way to make the above response work within an inferentialist framework and rule out Larry’s mental transition as a genuine inference. González de Prado Salas et al. point out that Brandom’s distinction between deductive inferences as commitment preserving and inductive inferences as entitlement preserving is too simplistic because both deductive and inductive inferences are entitlement preserving (p. S913). If an inference is commitment preserving, then it will also be entitlement preserving because the committive relationship will mean that one is entitled to the conclusion.

Since both inductive and deductive inferences are entitlement preserving, it would be more accurate to distinguish inductive inferences as entitlement preserving but not commitment preserving (González de Prado Salas et al., 2021, p. S913). However, this leads directly to the problem I characterized above, but even more starkly if this formula is meant to capture scientific reasoning. It does not seem that there is any way to make sense of the way in which inductive inferences lead to or constrain what a good conclusion is if they are merely permissive. To use a classic example, I am entitled to infer that the sun will rise tomorrow from my commitment to the claim that the sun has risen everyday of my life so far, but from Brandom’s

permissive account it seems like this would be just as good of an inductive inference as ‘the sun has risen everyday of my life so far, therefore most chocolate mousse recipes include eggs.’

González de Prado Salas et al.’s answer is to take both deductive and inductive inferences as both commitment preserving and entitlement preserving. What distinguishes inductive inferences from deductive ones is that inductive inferences only preserve partial commitments (p. S917).

Brandom presents commitments as being an all or nothing affair, but González de Prado Salas et al. (2021) argue that one can have a degree of commitment (p. S918). They argue that a commitment is a partial one if it “leaves open (rather than discard[s]) certain possibilities” (p. S920). So, if a commitment limits the sorts of claims one is entitled to make, then a partial commitment will leave some of those entitlements open. This idea can be translated into Brandom’s framework by taking a commitment to be partial if it meets two conditions. First, an agent with a partial commitment is “precluded from having entitlement to a (full) commitment to incompatible propositions” (p. S920). Second, an agent with a partial commitment will also be committed to leaving open (having partial commitments to) other possibilities that inferentially follow from the partial commitment. This means that being committed to the premises of an inductive inference constrains what sort of conclusion is appropriate based on what claims preserve partial commitments.

González de Prado Salas et al. (2021) have a third condition that “if one is partially committed to the premises of a good committive inference, one will become partially committed to its conclusion to the same degree” (p. S920). However, this condition seems false. It seems that there can be cases where I have a stronger commitment to the premises than the conclusion, and yet the inference remains a good one. For example, if I have good reason to think that the next person to walk by my window will be a woman, and I also have good reason to think that if

the next person to walk by my window is a woman, then she will be pregnant, then it seems appropriate (if I am very confident in the premises) to infer that the next person to walk by my window will be a pregnant woman. But given that the product of two probabilities is always reduced, I should be less confident in that claim than in either of the premises.

This condition cannot be completely dropped, though, because it is this condition that constrains the prospective inference beyond just all the possible claims that one remains entitled to, given a prior claim. So I propose adjusting the condition to be: “if one is partially committed to the premises of a good committive inference, one will become partially committed to its conclusion” (p. S920) to an equal or lesser degree, where the equal or lesser degree is still sufficiently strong that one is willing to act on the resulting claim most of the time. Furthermore, at this point, I think it is important to emphasize that, since inductive inferences are now committive inferences (even if they only involve partial commitments), the standard for a good committive inference applies to them. In other words, they must preserve a commitment, even if the commitment is only partial. This means that like for deductive inferences, we can now talk about the material connections between concepts constraining what inferences are appropriate. Just as in deductive inferences, it is the material connections that enforce the level of commitment that one should have to the conclusion given the premise.⁶⁸

In the example used earlier, the agent who makes the inference ‘the sun has risen everyday of my life so far, so it will rise tomorrow,’ cannot have full commitment to an incompatible claim, such as ‘the sun has only risen every second day of the agent’s life’ or that ‘the sun will not rise tomorrow.’ However, the agent must leave open the possibility, and hence have a partial commitment to the claim, that ‘the sun will not rise tomorrow.’ Notice that on the

⁶⁸ If this sounds oddly informal, remember that the idea is that formally valid inferences are a subsection of materially valid inferences. Concepts such as TRUTH, DISJUNCTION, THEREFORE, etc. also involve material connections.

basis of this analysis, a transition from ‘the sun has risen every day of my life so far’ to ‘the sun will not rise tomorrow’ is not a good committive inference in the deductive sense because there will be a drop in the level of commitment between the premise and the conclusion. Finally, the inference from ‘the sun has risen every day of my life so far’ to ‘the sun will rise today’ preserves the partial commitment because one should be as committed to the conclusion as they are to the premise, or only slightly less committed based on the material connection between the premise and the conclusion. Whereas in the inference ‘the sun has risen every day of my life so far, therefore most chocolate mousse recipes include eggs,’ there is nothing about the conceptual content of the premise that should lead others to regard someone who is committed to it to also be committed to the conclusion, even if the commitments to the claims involved are only partial. In other words, the premise cannot be appropriately offered as a reason for accepting partial commitment to the conclusion.

There are two possible ways to identify partial commitments. First, agents with partial commitments will be fully committed to statements that include a partial commitment combined with modal language like ‘might’ or ‘probably’ (González de Prado Salas et al., 2021, p. S920). So, if the agent has a strong partial commitment to the claim that ‘the sun will rise tomorrow,’ then they will have a full commitment to the claim that ‘the sun will probably rise tomorrow.’ Second, one can identify partial commitments by an agent’s willingness to act on them, where that willingness is less than every possible time (and this willingness can be expressed through a further commitment) (p. S921). For example, one can imagine a hiker who generally decides to head back to the car if he sees dark clouds on the horizon because he infers from the dark clouds

that it will rain soon. However, there will likely be cases where he decides to risk it despite the possible storm clouds because dark clouds on the horizon do not always signal rain.⁶⁹

So, González de Prado Salas et al.'s (2021) characterization of inductive inferences as involving partial commitments provides a way to distinguish them from deductive inferences. While inductive and deductive inferences both preserve entitlements and commitments, deductive inferences preserve full commitments, whereas inductive inferences preserve partial commitments. Placing this idea back into the framework of giving and asking for reasons, inductive inferences are modelled after the basic moves where one gives and asks for reasons that are partial commitments. What this gives us is an inferentialist account of inference that can make sense of inductive inferences, so we can now ask if it can fulfill Boghossian's requirement of being able to rule out noninferential mental transitions.

Bringing it back to our test case, does this characterization of inductive inferences allow us to rule out Larry's mental transition? One way would be to argue that while the transition may be entitlement preserving in the overly open way stipulated earlier, it does not seem to be partial commitment preserving. The commitments that Larry is making seem to be better modeled as full commitments. So, in order for the transition to be an inference, the commitments would need to have the sort of full commitment preserving abilities that the transition was argued to lack. However, what if one stipulates that Larry's commitments are partial commitments? It does, at least seem possible, to not be fully committed to either of the propositions. It is perfectly

⁶⁹ The idea of willingness to act can help wave away some of González de Prado Salas et al.'s (2021) talk of agents being partially committed when they assign degrees to their levels of commitment (p. S290). I think it better fits Brandom's framework to make this claim in the opposite direction where willingness to act can be expressed explicitly by assigning degrees of commitment. Degrees of commitment are then part of the logical expressivist's toolbox, but not necessary for having a partial commitment in the first place.

coherent to say ‘I think I am having fun’ where the ‘I think’ signals a kind of uncertainty, and one could be fairly certain that the world has a lot of suffering in it without being entirely sure.

However, having partial commitments to both claims in the mental transition is not sufficient to show that the transition is partial commitment preserving. Larry may still be entitled to the latter claim given the former because the former does not rule out entitlement to the latter, but there is nothing about the conceptual content of the former that constrains one into making a partial commitment to the latter to an equal or lesser, but still sufficiently high, level of commitment. In other words, there are no material connections between the two claims that demonstrate the preservation of a partial commitment. This would show that, at best, Larry’s transition is a bad inference.

However, I think we can go further and say that it is not an inference at all. It seems that Larry would be unlikely to offer ‘I am having so much fun’ as a reason for his belief that ‘There is so much suffering in the world’ even if he noticed that there had been a transition from the initial thought to the latter. It seems more likely that he would point to facts about the world, such as famines, wars, and pandemics. Now, even if Larry did try to offer the former claim as a reason for the latter, it is not the sort of transition that others would be disposed to reward or sanction based on whether it is commitment preserving or not. If Larry were to offer the former claim as a reason for the latter, we would be unlikely to regard him as offering a bad reason. Instead, it seems that one should take him as misunderstanding the question or changing the topic. In other words, if we were to sanction Larry, it would not be because he made a bad inference, but because he had failed to make an inference. So, even if Larry did try to offer the former claim as a reason for the latter claim, an interlocutor is unlikely to accept a partial commitment to the premise as a reason to partially accept the conclusion. And furthermore, the

scorekeeper is unlikely to regard such a transition as appropriate or inappropriate in terms of dispositions or willingness to reward or sanction such a mental transition. “Do you understand what I am asking you for?” would be a more appropriate response to Larry than “that’s a bad reason to accept your conclusion.”

Now, it is of course logically possible that a community could be set up in such a way that scorekeepers punished individuals who failed to transition from ‘I am having so much fun’ to ‘But there’s so much suffering in the world.’ But even here there are ways to push against the idea that this would make this transition an inference. Our current community has expressive tools, such as Bayes’ theorem, which could be used to show that the first fact represented by Larry’s thought has no bearing on the likelihood of the second fact. This does not mean that anything like Bayes’ theorem explains the ability to make inductive inferences, but it does mean that Bayes’ theorem (or some other theory of probability) is able to express the norms involved in inductive inferences. In this way, we can make claims about whether it is appropriate to hold individuals accountable for a given mental transition and indirectly whether it is appropriate to regard a given mental transition as normative (and therefore an inference), independently of whether some possible community does or not.

This does not mean that we are automatically right, but it does provide us with tools for giving reasons about what is or is not an inference when faced with communities that make classifications different than ours, though we will have to ask for their reasons as well. We can then either challenge their reasons, or if we have a sense that their concept of INFERENCE does not share the same internal relations as ours, then we may just have to recognize that they are playing a different language game from ours. Therefore, from the viewpoint of an enriched version of Brandom’s inferentialism, Larry’s mental transition should not be regarded as an

inference because it cannot be modelled as a basic move in the game of giving and asking for reasons. In this way, Boghossian is right that normativity is what distinguishes inferences from other forms of mental transitions; he just misidentifies where that normativity comes from.⁷⁰

Having met these two conditions for Boghossian's example of Larry's mental transition, we can ask how an inferentialist account holds up when identifying inferences in the wild. Does it face the same difficulties that Boghossian's account did? It will not. By making the identification of inferences an external process, the externalist account classifies inferences merely as those processes that we appropriately label inferences. To appropriately label a process as an inference just is to normatively evaluate it in ways that can be modelled on the game of giving and asking for reasons, and in ways that others deem as an appropriate evaluation. There is no need to try to identify some metaphysically inaccessible state to explain the normativity of inference or distinguish inferences from other forms of mental transitions. Instead, one only needs to look at the committive and permissive practices involved in the game of giving and asking for reasons.

6. Conclusion

In this chapter, I have argued that two objections to attributing inferences to nonlinguistic animals do not apply to an NCH account of inference that takes material inferences as basic and explains normativity through the deontic attitudes we take towards each other. Bermúdez argued

⁷⁰ It may still be possible to argue that while the above account is able to accomplish these tasks without reference to a reasoner's taking state, it still involves an element of taking, specifically that of taking others to be inferring. In other words, while Boghossian's formulation of the taking condition is wrong to emphasize internalist conditions for taking, Brandom's account motivates an externalist version of the taking condition. I would like to leave this open as a possibility; however, my own attempts to formulate an externalist account of the taking condition all seem to lead to an internalization of elements of Brandom's framework or an over-intellectualization of it. Given that, if my arguments above work, none of this is needed to accomplish the tasks that motivate the adoption of the taking condition, I see no reason for adopting these extra elements just so that one can formulate a taking condition. I cannot argue that a proper formulation is impossible, but since the tasks have already been accomplished, I see little reason to pursue such a formulation.

that inference relies on the syntactic features of content that are not available to nonlinguistic reasoners. In response, I argued that semantic connections between concepts can also explain inferences and that an account that takes these types of inferences as basic is in a better position to explain the development and role of formal inferences. Additionally, Boghossian argued that the normativity of inference and the ability to distinguish between inferences and other forms of mental transitions can only be explained if we attribute taking states to inferrers. He claimed that these sorts of states are beyond the cognitive abilities of nonlinguistic animals and therefore nonlinguistic animals are incapable of making inferences. In response, I argued that taking states are not able to distinguish between inferences and other types of mental transitions, except for cases where a taking state or the lack of a taking state has been stipulated from the outset by the theorist. Without the ability to distinguish inferences from other forms of mental transitions, it is not possible for us to tell when we should hold others responsible for their mental transitions, and therefore, the taking state is also unable to account for the normativity of inference.

In contrast, I argued that Brandom's externalist and phenomenalist account of normativity can be used to explain the normativity of inference and distinguish inferences from other sorts of mental transitions. For Brandom, individuals are responsible for their inferences because we hold them responsible for their commitments and entitlements. These deontic statuses allow for committive and permissive relations that can be used to distinguish between deductive and inductive inferences. I argued that permissive relations are not sufficient for accounting for inductive inferences, and following González de Prado Salas et al.'s additions to Brandom's inferentialist framework, I argued that inductive inferences should be understood as involving relations between partial commitments. Using this framework, not every mental

transition will be identified as an inference because not every mental transition will be commitment or partial commitment preserving.

While I have shown that two major objections to attributing inferential capabilities to nonlinguistic animals do not apply to the NCH account of inference that I extract from Sellars and Brandom, it is not immediately obvious that nonlinguistic animals will count as making inferences in this framework either. In the following chapter, I turn to Brandom's arguments that inference is an inherently linguistic phenomenon because it is not possible to make sense of inference without assertion. While I have already provided reasons for thinking that inferences can function without linguistic assertions in the previous chapter, I want to show that it is possible to make sense of assertions without language in the following chapter. This will provide the opportunity to show the ways in which nonlinguistic animals can be appropriately interpreted as making non-derivative inferences and assertions from the perspective of NCH.

Chapter 6

Chimpanzees in the Space of Reasons: A Semantic Analysis of Chimpanzee Behaviour

So far in this dissertation, I have argued that nonlinguistic animals are capable of meeting many of the requirements necessary for conceptual capabilities from the perspective of NCH. I have done this mostly by pointing to examples from animal behavioural science where nonlinguistic animals succeed at tasks or behave in ways that seem to require conceptual capabilities, or by showing that the merit of the objections against attributing these capabilities to nonlinguistic animals has been overestimated. However, all of this could be for naught if it can be argued that nonlinguistic animals cannot partake in normative social practices. Without such an argument, normative conceptual holists can argue that all of the above behaviours have been misidentified as conceptual and that however one explains the seemingly sophisticated behaviours of nonlinguistic animals, the explanation must not help itself to conceptual capabilities. For NCH, only behaviour that exists within the space of reasons counts as normative and the space of reasons explains how it is possible for behaviour to be normative. So, a demonstration of nonlinguistic conceptual capabilities will only work if some nonlinguistic behaviour can be appropriately categorized as falling within the boundaries of giving and asking for reasons.

Brandom has argued that nonlinguistic animals are incapable of giving and asking for reasons because giving and asking for a reason is only possible if one can make assertions. For Brandom (1994), in order for something to count as an assertion it has to be able to license further inferences and assertions, and it has to be something that the asserter can be held responsible for (p. 173). These two requirements mean that assertions for Brandom are normative acts that can only emerge from social and linguistic communities. In this chapter, I argue that chimpanzee pant grunts can license further inferences and undertake a responsibility.

Pant grunts are vocalizations that signal submission to higher-ranking chimpanzees (Stanford, 2018, p. 54). I argue that when a chimpanzee pant grunts or chooses not to pant grunt, they are making a social commitment, or more specifically, they are making their recognition of their place in the social hierarchy explicit to other chimpanzees.⁷¹

This meets the first criterion for assertions because other chimpanzees that are either involved in or observing the interaction can and do use this information to make further inferences when navigating current and future social interactions. It also meets the second criterion because if a lower-ranking male fails to pant grunt when crossing the path of a higher-ranking male, the dominant chimpanzee can challenge the lower-ranking chimpanzee's assertion of social standing by making a threatening display of dominance. Even if not immediately challenged, lower-ranking chimpanzees that fail to pant grunt can face consequences, such as limited access to food and sex, and/or face violence that, in rare cases, can be fatal (Stanford, 2018, p. 53). In other words, they can be held responsible for their assertion of non-submission. Since pant grunts fit Brandom's criteria for assertions, chimpanzees should be understood as inhabiting a part of the space of reasons.

However, the standing of this argument requires several initial steps where I argue that it is possible for some nonlinguistic animals to participate in the social practice of scorekeeping, make inferences, and to reward and sanction each other. In order to show that it is possible for nonlinguistic animals to participate in the sorts of social practices from which original

⁷¹ The claim I am making here includes an implicit 'in the right context and from the right individual.' Just like in human cases, it is possible for one to make a claim and for others to not regard it as a social commitment, even if it would normally be regarded as a social commitment in another context or from another person's mouth. For example, the things that actors say on a stage are not usually taken as making social commitments. Likewise, young human children can say things without it being regarded as a social commitment, even if we would take such an utterance as a very serious social commitment if said by an adult human in the right context. So, both context and who is making or not making the utterance matter for whether an utterance/non-utterance is regarded as a social commitment for linguistic humans, and the same can be said for chimpanzees (even if they do not stage productions of *Hamlet*).

intentionality can emerge, I argue that it is possible for nonlinguistic animals to both acknowledge and attribute commitments and entitlements. I use the elaborative behaviours discussed in Chapter 4 to argue for acknowledgement, and I discuss experiments with Eurasian jays, which purport to show that they can attribute desires to food-sharing partners as evidence for the ability to attribute commitments and entitlements. In order to show that it is possible for nonlinguistic animals to make inferences, I apply the externalist conception of inference from the previous chapter to experiments on the inferential abilities of nonlinguistic animals and argue that the criterion of rewarding/sanctioning commitments based on prior commitments can plausibly be found in at least some nonlinguistic animal communities. These arguments show that it is possible for nonlinguistic behaviour to be normative. The aforementioned analysis of chimpanzee pant grunts then provides an existence proof for normative behaviour among nonlinguistic animal communities.

Finally, I consider the objection that while the dissertation has successfully established that each of the relevant capabilities can be found in some nonlinguistic animals, I have not established with sufficient certainty that there is any one nonlinguistic animal with all of the relevant capabilities. In response, I first argue that since NCH is holistic not only about concepts but also about the capabilities that underlie and constitute conceptual capabilities, this sort of objection cannot be coherently made within the NCH framework. Second, I argue that for those who are moved by this objection, the dissertation as a whole can be read as making a weaker but still significant argument. Instead of arguing for the claim that at least some nonlinguistic animals have conceptual capabilities, the alternative argument says that because there are examples of nonlinguistic animals meeting each required capability, nonlinguistic conceptual capabilities are possible because every ability that constitutes conceptual capabilities is

nonlinguistically possible. This conclusion leaves it as an open possibility that nonlinguistic animals have conceptual capabilities but leaves any possible confirmation of that claim open until further empirical developments. I think this result is only truly forced on us if one's epistemic standards are unreasonably high, but for those who insist on such standards, the argument still results in a significant conclusion. Linguistic capabilities are not necessary for conceptual capabilities, even if one thinks that there is currently not sufficient evidence for attributing them to any of the nonlinguistic beings that we currently have scientific evidence for. Furthermore, since arguments in philosophy against attributing conceptual capabilities to nonlinguistic animals are usually based on the claim that attributing conceptual capabilities to a nonlinguistic being is impossible, this weaker conclusion is only steps away from the stronger conclusion.

1. The Space of Reasons

Brandom (1994) argues that to make an assertion is to undertake a social commitment. As discussed in the previous chapter, commitments and entitlements are social normative statuses. A performance is a commitment or entitlement if others regard that performance as a commitment or entitlement. As Brandom puts it, social statuses are "instituted by individuals attributing such statuses to each other, [and] recognizing or acknowledging these statuses" (p. 161). In other words, to undertake a commitment "is to do something that makes it appropriate to attribute the commitment to the individual" (p. 162). Making a commitment entitles or licenses others to certain expectations of the individual who made it. For example, signing a lease entitles others to expect payments on the first of every month.

In an earlier mentioned quote, Brandom (1994) uses the concepts of commitment and entitlement to define what a social practice is:

A social practice is a ‘game’ “in which each participant exhibits various deontic statuses – that is, commitments and entitlements – and each practically significant performance alters those statuses in some way. [...] Practitioners take or treat themselves and others as having various commitments and entitlements. They keep score on deontic statuses by attributing those statuses to others and undertaking them themselves. The significance of a performance is the difference it makes in the deontic score – that is the way in which it changes what commitments and entitlements the practitioners, including the performer, attribute to each other and acquire, acknowledge, or undertake themselves (p. 166).

These social practices confer and fix the intentional content of performances. While social practices can exist outside of linguistic practices, Brandom thinks that only linguistic social practices have these special features. Assertions are both what explains this fact and what delineates linguistic practices from other types of practices. According to Brandom, a social practice can be regarded as linguistic if some performances are “accorded the significance of assertions” (p. 172).

A performance counts as an assertion if: (1) it licenses audience members to make further assertions – in other words, it can be offered as a reason; and (2), in making the performance, one undertakes a “responsibility to show that” one is “entitled to the commitment expressed by their assertions, should that entitlement be brought into question” (p. 173) – in other words, it can stand in need of a reason. One way to understand these two conditions is that the first is about giving reasons and the second allows others to ask for reasons. In other words, assertions are what construct the space of reasons. For Brandom and other normative conceptual holists, for something to count as normative, it must fit within this space.

So, in order to prove that nonlinguistic animals can meet the requirements for normativity set out by Brandom’s inferentialist framework, I need to show several things: that without linguistic capabilities (a) it is possible to attribute and undertake commitments and entitlements, (b) it is possible to make inferences, and (c) it is possible to hold others responsible for their

commitments/entitlements and their inferences to and from commitments/entitlements. In other words, is it possible for nonlinguistic beings to engage in normative social practices? I would like to note my use of the modal term ‘possible’ in my set up here for the following sections. My aim in these following sections is to show that it is possible to have each of these abilities without having linguistic capabilities. I will defend each of these claims by offering existence proofs: some nonlinguistic animal has capability x, therefore it must be possible to have capability x without having linguistic capabilities. Only after I have argued for each of these possibility claims will I argue in the third section that there is sufficient empirical evidence from the social practices of chimpanzees to conclude that there is at least one nonlinguistic animal species where many of its members have all of the necessary capabilities to count as living in the types of social normative practices that establish and constitute conceptual capabilities.

2. Scorekeeping

Is it possible for nonlinguistic animals to undertake and attribute commitments and entitlements? To undertake a commitment, according to Brandom (1994), “is to do something that makes it appropriate to *attribute* the commitment to the individual” (p. 162), and that undertaking entitles or licenses others to have certain expectations of the individual who made it. However, arguing that nonlinguistic animals can undertake commitments insofar as one can ascribe propositional contents to them in order to explain their behaviour is not something that Brandom denies – with one major caveat. He argues that any commitments/entitlements ascribed to nonlinguistic animals are derivative and dependent upon the ascription of commitments/entitlements to them by linguistic beings that exist within the space of reasons (p. 152).

His justification for this move depends on his distinction between original and derivative intentionality. Original intentionality is something that emerges from the normative practices of a linguistic community, so that the intentionality of an individual practitioner derives from the original intentionality of the community itself (Brandom, 1994, p. 61). Brandom takes his communal and linguistic understanding of intentionality to show that the intentionality of nonlinguistic animals is “doubly derivative”, meaning it is twice removed from the original intentionality of linguistic communities (p. 630). The intentional states of nonlinguistic animals are derivative of the already derivative intentionality of the individual linguistic practitioners who ascribe intentional states to them.

However, he does not consider the possibility that nonlinguistic animals may have their own types of communities or normative social practices from which their own original intentionality may arise. He takes nonlinguistic animals to lack the ability to not only undertake commitments (in a non-doubly-derivative sense), but also the ability to acknowledge and attribute them. The latter part is crucial here because in order for a community’s intentional grip on the world to be original and normative, not only must it be composed of actors, but those actors must be interpreters as well. So, to demonstrate that it is possible for the intentionality of nonlinguistic animals to be original in their own sense, in this section, I will start by showing that it is possible for nonlinguistic animals to participate in the normative practices of acknowledging and attributing commitments, starting with the former.

2.1 Acknowledging Commitments

Brandom (1994) takes acknowledgement to be crucial for being part of an intentional practice because by acknowledging commitments one is not just being interpreted but is also partaking in interpretive practices (p. 35). Now, this is a tricky position for Brandom since he

characterizes interpretative communities as operating entirely from a third-person standpoint (Satne, 2017; Wanderer, 2021). So, to undertake a commitment is just to be regarded as undertaking commitment, and likewise, a performance counts as an acknowledgement if the performance leads interpreters to attribute the deontic attitude of acknowledgement to the performer. So the question then is: what sorts of nonlinguistic performances could signal acknowledgement of a commitment instead of a merely (doubly) derivative undertaking? Or put slightly differently, what sorts of behaviours would lead one to be interpreted as interpreting?

I take communicative behaviours to be the most obvious place to start looking for the possibility of acknowledgement, especially those communicative behaviours where part of the performance is centred on making sure the receiver is properly grasping the content being communicated. In Brandom's queen's shilling example, discussed in the previous chapter, it was noted that one could undertake a commitment to join the army by using the queen's shilling to buy the next round without necessarily realizing that they have undertaken such a commitment (1994, p. 162). However, if one demonstrated awareness of what they were committing themselves to, then the commitment is not only undertaken but acknowledged. One way to demonstrate this sort of awareness would be to take the queen's shilling while loudly saying "Looks like I am going to be joining the army tomorrow morning!" In other words, acknowledgement can be demonstrated by making an implicit commitment explicit. Why would one feel the need to say such a thing out loud? Perhaps one's drinking buddies fail to show much of a reaction to the taking of the queen's shilling. In other words, one recognizes that those around oneself are not recognizing the commitment being undertaken and in response tries to make the undertaken commitment more explicit. In doing so, one's performance plays a double

role: it makes the commitment being undertaken explicit and in making the undertaken commitment explicit, it demonstrates acknowledgement of the commitment.

If it is right to regard this sort of performance as an acknowledgement and acknowledgement as being prompted by these sorts of reasons, then much of Chapter 4 should be regarded as an argument for the acknowledgement of commitments by nonlinguistic animals. In Chapter 4, I argued that nonlinguistic animals are able to make content explicit by making it easier to use and using it for a variety of modes of use. I also argued that these two empirical markers connect to awareness and understanding and in moving content along the implicit/explicit continuum, nonlinguistic animal subjects are not only helping facilitate the awareness of receivers to the content of their own performances but demonstrate that the subjects are also aware of the content of their own performances. For example, there is evidence that some nonlinguistic primates are capable of elaborating in response to communicatory failure (Byrne et al., 2017). Chimpanzees can use a number of gestures with meanings that relate to and overlap with their initial signal if they fail to get the desired response. The types of communicatory signals used in elaboration are flexible and responsive to the attentional or epistemic state of the recipient. In addition, orangutans are more likely to narrow the range of signals, repeating already used gestures, if partial comprehension has been reached, but they are more likely to widen the range of symbols, and not repeat previously used gestures, if the recipient completely lacks understanding (Cartmill & Byrne, 2007).

These scenarios do not seem all that different from the explicit acknowledgement of the commitment in taking the queen's shilling. The failure of others to grasp an undertaken commitment leads the communicator to make the commitment more explicit, and in doing so

acknowledges the commitment being undertaken.⁷² Elaboration in response to communicatory failure is not only about making the recipient aware of what the communicator is trying to communicate but demonstrates that the communicator has an awareness of what they are trying to communicate. Such an awareness is necessary for the communicator to register that their initial strategy has failed and to be able to make decisions about how to modify their communicatory strategy in response to failure. It is unclear to me whether explicitness will always line up with acknowledgement, but if it does, then the other behaviours discussed in Chapter 4 also count as acknowledgements. Furthermore, this alignment would have the nice result of putting acknowledgement on a continuum with undertaking. It seems entirely possible that one can be dimly aware of the commitment they are undertaking or be fully aware of the commitment they are undertaking, and the explicitness of the performance would be one way track the degree of acknowledgement.

2.2 Attributing Commitments

However, acknowledgement is only one part of being in an interpretative practice. The other part is the attribution of commitments and entitlements to others. One of the likely reasons for skepticism about the ability of nonlinguistic animals to attribute commitments and entitlements to others is that it might be presumed that attributing commitments and entitlements is a process that involves attributing beliefs and desires. The attribution of beliefs and desires to others is widely understood as involving metacognitive processes which many philosophers still regard as only available to creatures with linguistic capabilities.⁷³ Brandom would likely agree that belief/desire talk is dependent upon metacognitive capabilities only available through

⁷² This may sound odd given that we usually regard acknowledgement as a first-person practice, but for Brandom, acknowledgements, like undertakings, are third-personal. So, as discussed above, acknowledgement is a deontic status attributed to one by others.

⁷³ See Andrews (2020b) for an overview of this debate.

language. However, he takes the use of folk psychological terms to be dependent upon the mastery of normative vocabulary that is used to make the attribution and undertaking of commitments explicit.⁷⁴ This means that belief/desire talk is dependent upon the already existing practices of attributing and undertaking commitments (Strijbos & de Bruin, 2012, p. 154). So, it is important not to take the attribution of commitments to others as necessarily a form of belief/desire attribution because the attribution and undertaking of commitments precedes belief/desire talk. This means that, unless they can be generalized to attributions in general, arguments against the ability of nonlinguistic animals to attribute beliefs and desires to each other are irrelevant for whether they can attribute commitments and entitlements to each other.

What does it take to attribute commitments and entitlements to others? First, one must be capable of distinguishing other subjects from the other types of objects that inhabit their environment. Otherwise, one will not be able to identify which sorts of beings one should attribute commitments and entitlements to. In developmental psychology, current evidence suggests that this ability develops before language acquisition and many of the experimental results that have led to these conclusions have also been replicated in work with nonlinguistic animals (Andrews, 2020a, p. 42). For example, both chimpanzees and human children tend to look more at goal directed behaviour than novel, non-goal directed behaviour (Uller, 2004). This result supports the idea that nonlinguistic subjects can distinguish other subjects from non-subjects, given that subjects can have goals whereas mere objects cannot. Furthermore, at least some nonhuman primates seem to be sensitive to underlying goals and motivations. Subjects have more patience with individuals who try to feed them but are unable to than with individuals who can feed them but refuse to, are able to discriminate between intentional and accidental

⁷⁴ This seems to have the consequence that folk psychological terms in Brandom's inferentialist framework are logical terms (for example, see Brandom (2009a, p. 89)).

actions, help others to complete their goals, and finish the partially completed tasks of others (Krupenye & Call, 2019). I take these results and many others like them to suggest that it is possible for nonlinguistic animals to distinguish other subjects from the other sorts of objects that inhabit their environments.⁷⁵

Now we can ask: can nonlinguistic animals attribute commitments to one of the groups of objects in their environment that we would classify as other subjects? Many philosophers (and at least some scientists) would likely support a negative answer to this question by pointing to evidence that nonlinguistic animals often fail at tasks that require them to attribute beliefs to others, such as the false belief task (e.g., Call & Tomasello, 1999).⁷⁶ In “Making Folk Psychology Explicit”, Derek Strijbos and Leon de Bruin (2012) argue that Brandom’s deontic scorekeeping model can provide an alternative to standard theory of mind accounts of what we are doing when we interpret each other’s behaviour as following from reasons. They contrast their approach to the standard account of interpretation where interpreters are engaged in metacognitive ascriptions of beliefs and desires. To be very clear about what they are doing here: they are arguing that the ability to attribute reasons through the attribution of commitments and entitlements to each other is prior to the ability to attribute beliefs and desires to each other. If their approach works, then the standard objections to attributing beliefs and desires to

⁷⁵ See Krupenye and Call (2019) for a helpful overview. One may argue that many of these results could be explained by mere behaviour reading. I do not think this matters for the claim that I am trying to make here. My claim is that it is possible for nonlinguistic animals to distinguish subjects from non-subjects, not that it is possible for nonlinguistic animals to distinguish subjects from non-subjects on the basis that they have minds. I have left the mechanism for distinguishing subjects from non-subjects open, so it does not matter if the distinction is made based entirely on behaviour. All that matters is that nonlinguistic animals are able to sort the objects in their world into groups and then (as I will argue further below) attribute commitments to one of those groups of objects. Since the attribution of a commitment is not necessarily the attribution of a belief nor even a mental state (commitments can be attributed entirely on the basis of behaviour; for example, consider the case of queen’s shilling discussed over the last several chapters), the mechanism still sits open at this later point in the argument.

⁷⁶ Though see Buttleman et al. (2017) for potential evidence to the contrary.

nonlinguistic animals will not apply to the claim that I am trying to make, that it is possible for at least some nonlinguistic animals to attribute commitments and entitlements to each other.

Following Brandom, Strijbos and de Bruin (2012) distinguish between theoretical and practical reasons. Theoretical reasons are “reasons for claims made rather than actions performed” (p. 147). When a subject makes a claim, they are “undertaking a ‘doxastic’ commitment...and normally also acknowledg[ing] the commitment undertaken” (p. 147). However, whether the subject acknowledges the commitment or not, the recipient of the claim attributes the undertaken commitment to the speaker. Undertaking and acknowledging most obviously come apart when a subject makes a claim that has a committive connection to some other claim recognized by the recipient but not the claiming subject. In such cases, the claiming subject has undertaken the commitment that follows from their initial claim, even if they do not recognize that fact by acknowledging it. If the recipient attributes a commitment to the claiming subject but withholds entitlement to such a commitment, then the recipient can be regarded as asking for reasons. In contrast, practical reasons are “reasons for action” (p. 148). So, if one withholds entitlement for a particular action, the acting subject can attempt to “vindicate entitlement to this commitment by giving a practical reason that permits (and perhaps commits her to) the action to be performed” (p. 148). Being a participant in the space of reasons is then a matter of scorekeeping: keeping track of the commitments and entitlements of others as well as one’s own commitments and entitlements.

Strijbos and de Bruin (2012) demonstrate the differences between Brandom’s scorekeeping approach and belief/desire ascriptions by considering a simple conversation:

A: “Why did you get up so early?”

B: “Got an early shift this morning.”

A: “Oh, right, of course” (p. 148).

They describe the initial question as withholding entitlement to “B’s practical commitment to getting up early” (p. 148). B’s response provides a practical reason (an additional commitment) for their commitment to getting up early. A’s response indicates that they regard B’s practical reason as vindicating their entitlement to getting up early. Notice that at no point is it necessary to interpret A or B as attributing mental states in order to regard this interaction as an exchange of reasons.⁷⁷ The relation between B’s getting up early and B’s early shift is a material inferential connection.⁷⁸ One commitment supports or explains the other. Strijbos and de Bruin write that in accepting B’s reason, A is endorsing this material inference as “a proper one, a permitted move on the part of the agent in this game of giving and asking for reasons” (pp. 149-150).

Importantly, the standing of this material inference does not rely on the beliefs and desires of B;⁷⁹ the inference is in good standing on the basis of its content which Strijbos and de Bruin (2012) claim can be understood as “some pattern in the world that reflects the inferential relation endorsed” (p. 150). The pattern in this example is a social one – if one has an early morning shift, then that is a good reason to get up early. While these reasons are B’s reasons,

⁷⁷ Andrew Fenton (personal communication) suggests that A’s response to B implies that they are either attributing knowledge, or warranted or rational belief, and either possibility involves the attribution of a belief. Such an interpretation of this interaction is certainly possible, something that Strijbos and de Bruin (2012) are not denying, but it is unclear to me why such an interpretation is necessary, especially since they are pointing out that an alternative interpretation along the lines of commitments and entitlements is possible. Maybe it is necessary, but this would require some argument, and given all the problems that have been pointed out for folk psychology (e.g., Churchland, 1981), it is odd to argue that this is the only possible interpretation of a simple human dialogue, even if one comes out thinking that folk psychology is the correct interpretation in end.

⁷⁸ One could of course be mistaken and the existence of a material connection does not mean that the inference is deductively valid (as discussed the prior chapter).

⁷⁹ One may want to argue that the scenario requires an attribution of knowledge to B and therefore requires the attribution of mental states, such as beliefs, to B. If the former claim is true, at least for Brandom, that does not mean that we have to accept the latter claim. For Brandom (1995), knowledge is a type of commitment that can be attributed from a third-person perspective and knowledge is attributed to knowers when one is entitled to the commitment and the commitment is attributed as being undertaken by the knower (pp. 903-904). This process could involve mental states on the part of the knower, but for Brandom, that is not necessarily the case because the process of attributing and undertaking commitments precedes the internalization of such a process.

they are interpersonally robust, meaning that if A had an early morning shift, that would also be a good reason for A to get up early.⁸⁰

Strijbos and de Bruin (2012) admit that there are certainly occasions where others do attribute beliefs and desires to others. Their quibble is instead with the claim that this is the default strategy. They argue that:

People can start off on the simple assumption that they *share* much of the inferential web of commitments and entitlements that form the background of their conversations about their reasons for action. The material inferences that are constructed and endorsed throughout everyday conversations suggest they do...these inferences often reflect patterns in people's practical lives, not patterns in people's mental states (p. 152).

Importantly, the merit of the scorekeeping model does not depend on the individuals within the practice being aware of the nature and structure of scorekeeping. Strijbos and de Bruin explain that the central question such a model is supposed to answer is: "what is it that people do when they interpret each other in terms of reasons for action?" (p. 152). The question is about what they are doing, not what they take themselves to be doing.

Brandom's scorekeeping model not only provides ways to account for interactions in the space of reasons without relying on sophisticated forms of metacognition, such as folk psychological ascriptions, but also provides the means for explaining how such ascriptions emerge from the more basic scorekeeping practices. To show this, Strijbos and de Bruin (2012) consider an example from Gordon (1992) where two friends are hiking along a mountain trail when one of them stops and exclaims "Go back!" and "then turns and walks quietly and quickly

⁸⁰ Andrew Fenton (personal communication) worries that this account does not allow for the possibility that one could merely think that one has an early morning shift. Notice though that this account does not say anything about whether A or B have thoughts or beliefs, it only says that they need not *attribute* thoughts and beliefs in order to interpret each other's behaviour. If one got up early because one believed that they had an early morning shift when they actually did not, then this would require the more particular vocabulary of folk psychology to explain/understand their behaviour, as is discussed below. Maybe one could insist that the attribution of background knowledge is required, but as discussed in the prior footnote, even if we grant the truth of this claim, it does not undermine Strijbos and de Bruin's argument.

back down the trail” (Gordon, 1992, p. 13). The other friend is initially puzzled and looks around the bushes of the upcoming trail, “particularly for menacing, frightening things” until they spot a large grizzly bear (p. 14). In listening to her friend’s warning and following her back down the trail, the interpreter is committing herself “to going back and thereby instantaneously attributes entitlement to the agent’s commitment” (Strijbos & de Bruin, 2012, p. 153). Strijbos and de Bruin argue that the practical material inference “should be expressed in the first-person plural: ‘there is something frightening and menacing up the trail, so *we* should go back!’” (p. 153).⁸¹ This inference is part of a wider shared counterfactual inferential pattern (i.e., if the bear was spotted behind them, they would both respond by heading further up the trail).

Strijbos and de Bruin (2012) take Brandom as proposing that normative vocabulary, “such as ‘should’, ‘supposed to’, or ‘ought’ [is] an expression of the fact that such patterns have import for more than one person in particular” (p. 153). In other words, the merit of the practical material inference does not depend on the peculiarities of any one particular agent, instead it is a good practical material inference for many or even most agents. If instead the interpreter had looked up the trail and seen a racoon instead of a bear, then something more particular would need to be said about the patterns of inference endorsed by her particular friend that the interpreter need not endorse herself. Perhaps her friend has phobia of racoons or mistook the racoon for a bear. It is this sort of situation where ascribing beliefs and desires becomes necessary instead of just ascribing the undertaking and acknowledgement of commitments. Conative vocabulary should “be treated as a species of normative vocabulary that serves to

⁸¹ Andrew Fenton (personal communication) has pointed out that this is mental state language (e.g., ‘frightening’). It is not clear to me that recognizing that someone is experiencing fear requires belief/desire attribution which is what the discussion is about here. If one thinks that a term like ‘frightening’ is sneaking in the attribution of illicit mental states, then it seems entirely possible to reinterpret these claims without the emotional terms (‘something dangerous is ahead on the trail, so we should go back’).

articulate practical inferential patterns that are agent-specific” (p. 154). In other words, ascribing a belief or desire is a matter of “particularizing or individualizing the reason of the agent” (p. 154). So, from an inferentialist perspective, we should expect the ability to attribute commitments and entitlements to precede the ability to attribute beliefs and desires. Subjects can interpret other subjects as acting for reasons before they have developed the ability to particularize or individualize those reasons to a particular subject.

Andrew Fenton (personal communication) worries that this framework looks like it only works for other animals when they are correct. My use of this framework is meant to show that nonlinguistic animals are able to attribute commitments to each other even if they do not have the concepts of BELIEF and DESIRE. It does not say anything about whether nonlinguistic animals can have true or false beliefs, it says that they do not need to be able to attribute a belief to another animal in order to interpret their behaviour as making a commitment. As discussed in Chapter 4, a performance can be regarded as failing to make a commitment if the performer lacks entitlement to make that commitment. For example, if a vervet monkey continually makes eagle calls when there is no eagle around, then the individual may be regarded as no longer entitled to make that type of commitment. If the scenario called for a more sophisticated understanding of the situation, perhaps the other monkeys needed to explain the miscalling monkey’s behaviour, then they could explain the behaviour by recognizing that the miscalling monkey was acting on the basis of a false commitment. Such an attribution is the sort of attribution that Strijbos and de Bruin (2012) would regard as requiring the attribution of a belief. This result lines up well with ideas in the Theory of Mind literature that takes the ability to attribute a belief to only be proven if one can pass the false belief task (Buttelmann et al., 2017). So, the framework does not only work when nonlinguistic animals are right. A nonlinguistic

animal can withhold entitlement to make a certain type of commitment, and then in some cases, may even recognize that another nonlinguistic animal is getting something wrong because they hold a false belief.

Now, one could argue that showing that the concepts of BELIEF and DESIRE are not necessary is not theoretically sufficient to show that it would be possible for nonlinguistic animals to attribute and acknowledge commitments and entitlements because attributing and acknowledging commitments still requires a theory of mind. I am not convinced that this objection has much force. As we have already discussed over the last several chapters, it is possible to have a commitment attributed to one without one even being aware of or attributing awareness of said commitment, such as in the example of the Queen's shilling. If one can make a commitment by taking a coin, then behaviour reading seems like a completely appropriate means for ascribing commitments. Likewise, given that acknowledgement is something ascribed from a third-person perspective, it is not even clear that acknowledgement of a commitment will necessarily involve the attribution of a psychological state. I have argued that explicit content requires awareness and understanding, and that acknowledgement lines up with explicitness, but it is not clear to me that such a claim means that in order to attribute acknowledgement, one has to attribute awareness and understanding. While undertaking or acknowledging a commitment can correspond to psychological states/processes, we should be careful not to presume that the attribution of a commitment is the attribution of a psychological state/process.

However, let's presume that one can make the argument that only creatures that have a theory of mind can attribute and acknowledge commitments. Maybe this argument could be made on the lines that at least some of the commitments have to involve the attribution of psychological states/processes in order for the framework to work as a whole. I am not sure what

this argument would look like, but let's grant it for the moment. Would this argument show that it is not even worth checking the empirical evidence to see if nonlinguistic animals can undertake and acknowledge commitments? It would not because there are compelling reasons to think that at least some nonlinguistic animals have a basic theory of mind.

Cameron Buckner (2022) has recently argued that experimental work with ravens is able to distinguish between behaviour reading and a basic theory of mind. In their study, Bugnyar et al. (2016) were able to rule out the use of line-of-gaze cues in adjustments to food caching behaviour based on the presence of a conspecific. Ravens cache food as part of normal foraging behaviour and when in the presence of potential pilferers, they have been observed making false caches (Buckner, 2022, p. 393). Buckner writes that:

...this experiment provided evidence that ravens trained to use peepholes to pilfer another's caches can later infer that when they cache in the presence of an open peephole—even if they had no prior experience caching in the presence of peepholes—that unseen competitors might be able to watch them through the peephole, too. As a result, they later guard their own caches against observation in the presence of the peephole, even if they cannot see any competitors (or their gaze cues) at the time. A plausible explanation of this result is that they are highly attentive to their own pilfering opportunities, and were (pleasantly) surprised by the discovery that the peephole afforded them the ability to pilfer the experimenter's caches.

Line-of-gaze behaviour reading cues cannot be used to explain the behaviour because the subjects partake in fake caching behaviour even if the subject cannot see the potential conspecific behind the peephole. The existence of a peephole cannot be associated with a particular behaviour read because the behaviour is observed even if the subject has never seen another conspecific use the peep-hole, so there is no behaviour read to associate with the peephole. Instead, the subject must make an inference from their own use of the hole to the possibility that there could be a potential pilferer behind the hole when the subject is making caches. Bugnyar et al. (2016) therefore conclude that the ravens are able to represent the mental

state of seeing. Similar results have been found in experiments with chimpanzees (Karg et al., 2016). While I suspect that no experiment is able to rule out all possible interpretations that do not involve a theory of mind, these results do, at the very least, suggest that it is possible for nonlinguistic animals have basic theories of mind. However, I will still press that I am not convinced that the attribution of commitments and entitlements requires a theory of mind. From an inferentialist perspective, it seems more likely that a theory of mind, like folk psychology, develops out of the ability to attribute commitments and entitlements instead of the other way around.

2.3 Nonlinguistic Commitment Attribution

To see the framework in action, I now turn to a series of experimental results that *purport* to demonstrate that Eurasian jays can attribute desires to conspecifics, and I will then argue that these results *can alternatively be interpreted* as the attribution of commitments to conspecifics instead of desires. In other words, unlike the experimenters, *I do not* take these experiments to show that Eurasian jays are capable of attributing desires to each other (for the purposes of this section, I will remain agnostic on that claim); instead, I take them to show that they can attribute commitments to each other. My aim here is not necessarily to argue that the inferentialist interpretation is superior. Instead, I merely aim to show that these behaviours can meet inferentialist conditions for commitment attribution and therefore that the birds should be interpreted as engaged in social practices. Even if this interpretation is wrong and the birds are attributing desire-states to each other, Brandom's claim that desire talk is parasitic on more basic social practices means that the central claim of this section will still follow.

Ostojić et al. (2013) ran a series of experiments to see if male Eurasian jays were capable of taking the desires of female partners into account when provisioning them with food during

mating season. The researchers first established that “desires can be manipulated through specific satiety—that jays could be sated on one food, reducing their desire for that food, while still being hungry for other foods” (Krupenye & Call, 2019, p. 5). Males and females were prefed on one of two types of larvae (A or B) and then allowed access to both types. Subjects who had prefed on A showed a shift from their baseline preferences towards eating more of B and vice versa. When it came to examining whether the subjects could take this shift of preferences into account when sharing food, a male subject would watch a female subject prefeed on one of the two types of larvae while the male subject prefed on both types of larvae. The experiments showed that male subjects took the female subject’s prefeeding into account and gave her the larvae that she had not already been satiated by (Ostojić et al., 2013). In order to make sure that the male was not making this decision based on behavioural cues alone, Ostojić et al. (2013) also ran a control where the male did not see the female prefeeding. In these trials, the type of larvae shared did not line up with the results from the test conditions. In other words, in the control trials, the male did not take their feeding partner’s preferences into account. If the male had been merely behaviour reading, then the male not seeing what the female prefeeds on should have had no effect on what type of larvae was shared because he would have been getting that information from her behaviour in the food sharing context.⁸²

⁸² As Ostojić et al. (2013) write:

It is possible that the females indicated their food preference behaviorally during the test phase and that these cues influenced the males’ sharing behavior. For example, at the moment when the male was making his choices of what food to share with his mate, the female could have been begging more intensely for one of the foods. Alternatively, immediately after a sharing bout, the female’s behavior could have indicated either acceptance or rejection of the food that had just been given to her by the male. Many previous studies have failed to adequately control for this “stimulus-bound behavior reading” (26). To test this possibility, we included a condition in which the males could not see the females and what they ate during the prefeeding phase, such that the only cue available to them on which to base their decision of what to share was the females’ behavior during the test phase. The procedure was identical to the seen condition in all other respects. To ensure that females experienced specific satiety in both the seen and unseen conditions, we compared the amount eaten during the prefeeding phase in these conditions and the specific satiety experiment... We can therefore be confident that the females’ behaviors (as affected by how

Ostojić et al. (2014) also ran a set of experiments where they considered whether male Eurasian jays could take a female's preferences into account if they mismatched with their own. In these experiments, males shared in line with their partner's preference if their desires matched, but in cases where their desires mismatched they did less so, but their sharing behaviour still lined up more than the results obtained in baseline control conditions, "suggesting that their sharing behavior was biased by their own desire but that they still took their partner's desire into account" (Krupenye & Call, 2019, p. 5). While these results are exciting, from an inferentialist perspective they do not show that the subjects have the ability to attribute desires to conspecifics. However, I take them to establish something potentially even more important: it is possible for beings without linguistic capabilities to attribute the types of commitments that are necessary for being part of a normative social practice.

In the experiments, the subject had the opportunity to watch another subject satiate themselves on one of two types of food, and then make decisions about food sharing based on those observations. Importantly, the subjects doing the sharing also showed similar preferences. If they had already satiated themselves on one of the two types of food, and were then given a choice, they preferred the other type. In other words, nothing outside the norm is happening here; there is no reason that needs to be particularized or individualized as a desire in order to make decisions about what type of food should be shared. While the reason is the prefed subject's reason, it is interpersonally robust. If the food sharing subject had been prefed on one type of food, they

much they had eaten of a particular food) did not differ between the seen and the unseen conditions. However, a comparison between the seen and unseen conditions revealed a difference in the males' sharing behavior... Therefore, the effect of decreasing sharing of the prefed food by the males in the seen condition cannot be explained by stimulus-bound behavior reading (26). In short, the males needed to observe what the female had eaten during the prefeeding phase; simply observing her behavior during the test phase did not provide them with sufficient information to ascertain which food she desired most (pp. 4124-4125).

would also now prefer the other. The case is similar to the conversation about the early morning shift, in that both have interpersonally robust material connections. While the interpreter did not have an early morning shift and therefore did not have a reason to get up early, if he did have an early morning shift, then he would likewise have a reason to get up early. Therefore, instead of taking the experiments to show the attribution of a desire, from an inferentialist perspective they demonstrate that the jays are able to attribute commitments to others. That is not to say that birds do not have desires, only that these experimental results (from an inferentialist perspective) do not show that they attribute desires to each other. Instead, they participate in one of the types of social practices necessary for normativity: the attribution of commitments and entitlements.

In this section, I have argued that it is possible for nonlinguistic animals to both acknowledge and attribute commitments. This means that it is possible for some nonlinguistic animals to partake in both “social flavors of deontic attitude” (Brandom, 1994, p. 630) and therefore their social practices should be regarded as possible sites for original intentionality and normativity. However, this can only be part of the story because from an inferentialist perspective, in order for the commitments to be rightly regarded as commitments, they need to be involved in inferential practices and such practices need to be normative. In the next section, I will argue that it is possible for nonlinguistic animals to meet both of these criteria.

3. Inference and Normativity

The definition of inference that emerges from the previous chapter is that an inference is a transition from one commitment to another that one can be held responsible for. One can hold another responsible for their transition by rewarding or sanctioning the performance (or non-performance). A transition does not count as an inference if others are normally not disposed to reward or sanction the performance. However, we need to be careful here in not being too strict

about the directness of this relation. Humans often do not sanction the commitments or inferences of other humans for a number of reasons, even if they are disposed to sanction those commitments and/or inferences in the right situation. For example, an inference or commitment may not be publicly shared (such as when someone makes a mental inference or undertakes a commitment but does not share it with others), or in cases where rewarding or sanctioning does not seem worth the effort (such as when the inference or commitment is frivolous or inconsequential, or when rewarding/sanctioning would come with costs that out-weigh the benefits of rewarding/sanctioning the behaviour). The absence of direct sanctions in these human cases would not stop us from calling them inferences or commitments.

I do not take this to be an objection to the externalist account of the normativity of inference that I argued for in the previous chapter. Brandom's externalist account of inference is not meant to rule out the possibility of mental inferences or require that every bad inference is sanctioned. Instead, it claims that the normativity of inference is only available to individuals who can participate in normative social practices, where the normativity of the social practices is defined by practices of sanctioning and rewarding. Private inferences or commitments are the result of internalizing the external practices and responsibilities, so that the normativity of individual mental inferences is parasitic upon social normative practices. Additionally, just because someone does not sanction because they are restrained from doing so should not lead us to regard that individual as lacking normative capacities. One can generally be disposed to partake in a type of social practice but decide to ignore or override their social disposition. In some ways, these overrides actually can provide further proof that an individual is capable of acting normatively and partaking in social practices because such an evaluation would involve a recognition that there are not sufficiently strong reasons to make a commitment to sanctioning

the performance in the given instance. In other words, overriding a disposition to sanction still partakes in the normative social practice – though maybe not openly.

Finally, it seems entirely possible that rewards/sanctions can be indirect. In the simplest cases, one might raise more questions in response to future commitments, or one could reward/sanction the kin or allies of the individual instead of the individual themselves. These can be regarded as a form of indirect sanctioning because in the former case, one is being sanctioned by being regarded as less entitled to their commitments than they would be otherwise, and in the latter case, sanctioning one's kin or allies can affect one's own position in a social hierarchy or can even just lead to aversive feelings from watching harm come to those one cares about.⁸³ The conceptual space is likely even broader than conceived of here, but the point I am making is that what is important for a performance to count as an inference or commitment is not necessarily that it is directly rewarded/sanctioned. Instead, what is important is that it is made by someone who is a participant in a social system that rewards/sanctions at least some performances, that the individual making the performance and at least some of the audience members are capable of partaking in those rewarding/sanctioning practices, the performing individual and at least some members of the audience are disposed to reward or sanction this type of performance, and all other things being equal, the individual and at least some members of the audience would reward or sanction the performance.

Two essential criteria can be extracted from this analysis. The first criterion for showing that it is possible for nonlinguistic beings to make inferences is that they must be able to make

⁸³ A great example of the potential effectiveness of this form of indirect sanction can be seen in narrative fiction where an antagonist is able to manipulate a protagonist more effectively by threatening their friends or family than by directly threatening them. While this is an example from fiction, if one remains unconvinced because of the source of this example, I would challenge them to consider how they would feel if they found themselves in a similar situation.

the types of transitions that we normally count as inferences, such as mental transitions. The second criterion is that that they must be able to hold each other responsible for their commitments. It might seem like we need a stronger second criterion given the definition of inference; it might seem like we need to say that they are capable of holding each other responsible for their *transitions* between commitments. In some ways this claim is right, but I will argue that given Brandom's inferentialist framework, meeting the former version of the second criterion implicitly meets the latter version. I will argue that Brandom's logical expressivism shows that implicitly meeting the former version is all we need, or we will be forced to say that humans have not been capable of making inferences for much of recorded history. To show that nonlinguistic animals can meet the first criterion, I discuss some behavioural experiments that focus on inference. To show that they can meet the second, I argue that nonlinguistic animals are capable of sanctioning each other for their commitments, including more subtle versions of sanctioning, such as internal sanctions.

Behavioural experiments on nonlinguistic animal inference usually ask the subject to solve some type of puzzle that involves inferring from what is observable to a non-observable solution (Völter & Call, 2017). For example, Völter and Call (2014) studied causal inference by presenting apes with two opaque cups and then, depending on whether the trial was testing either the arbitrary condition or the causal condition, in one of the cups, they would put "either a banana pellet (arbitrary condition) or a smaller cup with a hole on the bottom filled with yogurt (causal condition)", and in both conditions, leave the other cup empty (Call, 2022, p. 355). The experimenter then dragged the cups towards the subject's location. In the causal condition, dragging the baited cup left behind a trail of yogurt. Whereas in the arbitrary condition, after dragging the cups, the experimenter then took a spoonful of yogurt and created a trail behind the

cup with the reward in it. The subjects were then given the opportunity to choose one of the cups. In the causal condition, they chose the cup with the reward above chance but not in the arbitrary condition. Call (2022) writes that “even though both trails were equally deterministic (they both led to a baited cup), subjects only used it if it was causally consistent” (p. 355).

In this experiment, and others like it (see Völter and Call (2017) for an overview), the experiments are set up in this way to motivate the subject to make a transition from a perceptual commitment to a commitment about which cup is more likely to contain the reward. This shows that nonlinguistic animals are able to make the sorts of mental transitions that we would normally call ‘inferences’ in human cases. However, as noted in the previous chapter, not all mental transitions count as inferences and only those transitions that one can be held responsible for do. So, in addition to showing that nonlinguistic animals can make mental transitions, I also need to show that they are capable of holding each other responsible for their commitments. This means stepping away from the experiments that purport to show animal inference because if anyone is holding the animal subjects responsible in these experiments, it is not other nonlinguistic animals but human researchers.

Now, it might seem like I will need to show that nonlinguistic animals are able to hold each other responsible for their transitions between commitments and not just their commitments. However, I only need to show that they can do the former task implicitly by doing the latter task as long as some individuals are being held responsible for their commitments on the basis of prior commitments. This is partly a result of Brandom’s (1994) argument that giving and asking for reasons for inferences themselves requires logical vocabulary. Brandom’s argument for this claim comes from his interpretation of Frege’s early work as developing an expressivist approach to logic which introduced “vocabulary that will let one say (explicitly)

what otherwise one can only do (implicitly)” (p. 108). Brandom states that it is only after the introduction of the conditional that:

...one can say, as part of the content of a claim, that a certain inference is acceptable...If there is a disagreement about the goodness of an inference, it is possible to say what the dispute is about and to offer reasons one way or the other. The conditional is the paradigm of a locution that permits one to make inferential commitments explicit as the contents of judgments (pp. 108-109).

In other words, it is only after the introduction of logical vocabulary that allows one to express the form of an inference that the form of an inference can count as a reason and reasons can be demanded or offered for it.

Before the introduction of logical vocabulary, one can only hold others responsible for their inferences by holding them responsible for the commitments they can infer or cannot infer on the basis of prior commitments. So, one is held responsible for their inferences by being held responsible for the commitments that they are entitled or not entitled to, and it is these content conferring relations that logical vocabulary makes explicit by expressing them in a form that one can further be committed or entitled to. Since nonlinguistic animals lack a *Begriffsschrift*, they do not have the necessary vocabulary to make the form of their inferences something that they can be explicitly held responsible for. But as Brandom (1994) notes, the project only makes sense if inference is something that one already does prior to emergence of logical vocabulary (p. 110). So, if it is possible to show that nonlinguistic animals can hold each other responsible for commitments, especially if that responsibility is the result of their entitlement or non-entitlement to a given commitment based on prior commitments, then that is sufficient to show that

nonlinguistic animals are capable of holding each other responsible for their inferential transitions, even if it is only implicitly.⁸⁴

If we are going to be able to identify if and when nonlinguistic animals are holding others responsible for their commitments, we will first need to develop a better sense of what sorts of behaviours would count as sanctioning or rewarding. In his discussion of sanctioning, Brandom argues that in order for a performance to count as a sanction, it does not have to involve “external sanctions” (1994, 180). Brandom writes that:

One can coherently interpret a community as engaging in practices in which performances are treated as having the significance of promises (or of the more primitive sort of nonlinguistic undertaking of task-responsibility, of which taking the queen’s shilling is an example) even if the only sanction for failing to perform as one has committed oneself to do is to disqualify oneself from counting in the future as eligible to undertake such commitments. Something like this is what happened to the boy who cried “Wolf.” Having several times committed himself to the claim a wolf was present (thereby licensing and indeed obliging others to draw various conclusions, both practical and theoretical) under circumstances in which he was not entitled by the evident presence of a wolf to undertake such a commitment and to exercise such authority, the boy was punished – his conduct practically acknowledged as inappropriate – by withdrawal of his franchise to have his performances treated as normatively significant (p. 180).

So, while direct external sanctions are certainly sanctions (Brandom’s example is beating someone with sticks (p. 43)), sanctioning can come in less physically dramatic ways, such as regarding another as no longer entitled to undertake commitments.

⁸⁴ While it may sound like I am lightening the normative load for nonlinguistic animals compared to linguistic humans here, I think it is worth noting that we likely see the same phenomenon in linguistic humans who are not logically trained. In my experience teaching logic and critical thinking classes, I have found that it takes some training before students can identify where an inference is in a passage, even if they can see that one is only entitled to make a certain claim if certain other claims are true, or that one is not entitled to a certain claim given the limitations of the other claims one has made. I acknowledge that this evidence is merely anecdotal, but I suspect that it will ring true for others who have found themselves teaching similar courses. If this evaluation of my students is correct, then a stricter criterion would have to say that these students are not capable of holding others responsible for their transitions between commitments, and as a result, these students are not capable of making inferences. This seems like an absurd result.

The boy who cried “wolf” is being sanctioned for a commitment on the basis of prior commitments because the boy who cried “wolf” is no longer regarded as entitled to make a commitment to there being a wolf in the vicinity on the basis of his prior reports of that commitment. So, the removal of the entitlement to make a type of commitment is a type of sanction. Furthermore, while the connection between these commitments may not initially seem inferential, if we plug it into the framework from the prior chapter, we can see that it actually is. If we think of the report of “Wolf” as commitment in the game of giving and asking for reasons, and the sanction is the removal of entitlement to be regarded as making that type of commitment or be regarded as accurately making that type of commitment, then the basis on which the entitlement is removed seems to be that the boy is not making the commitment for the right sort of reasons. A perceptual commitment that there is a wolf at the edge of the treeline could lead to the commitment ‘there is a wolf near the sheep’, but if one cries “wolf” when there turns out to be no wolf nearby, then one must be making that report for some other sort of reason. We do not need to necessarily know what those other sorts of reasons are because whatever they are, they are not the appropriate reason to make a commitment to there being a wolf near the flock. This counts as inferential because one is being sanctioned because they made an inappropriate transition from one commitment to another and sanctioning is directed at the failure of a current commitment on the basis of prior commitments.

I will reserve my discussion of external sanctions within nonlinguistic animal communities until the following section, but there is also nonlinguistic animal behaviour that can fit this internal form of sanctioning. For example, male chickens will make food calls when they come across food. Experiments done by Evans and Evans (2002) showed that hens will stop responding to individuals who make deceptive food calls. In addition, as discussed in Chapter 3,

vervet monkeys keep track of the reliability of the alarm calls that others make and are selective in how they respond to the calls of those others. For example, recipients are less likely to respond to the alarm calls of juveniles, and callers who have made unreliable calls in the past are less likely to get a reaction to that particular type of call (Cheney & Seyfarth, 1988). So, recipients might not respond to the eagle call of an individual if the individual has a history of making unreliable eagle calls, but are still likely to respond to the individual's leopard call. In the case of the boy who cried wolf, Brandom (1994) writes that the case is unlike the case of the liar or the irresponsible promiser who ceases to be believed altogether. The removal of the entitlement to make commitments about the presence of wolves has to do with the "the significance assigned to that very performance" and leaves open the possibility of entitlement to other types of commitments (p. 180). This description fits the vervet performances described above well.⁸⁵ In these examples, nonlinguistic animals are holding other nonlinguistic animals responsible for their commitments, and at least some of those instances are based on their entitlement to a given commitment based on prior commitments they have made. So, it seems like nonlinguistic animals are capable of holding each other responsible for their commitments which entails that they are capable of holding others responsible for inferential transitions, even if only implicitly. In the following section, I will discuss the ways in which we can see this type of holding responsible in the social practices of free-living chimpanzees.

In this section, I argued that experiments meant to demonstrate the inferential capabilities of nonlinguistic animals establish that it is possible for some nonlinguistic animals to make mental transitions. An inference is a transition between commitments (mental or otherwise) that one is held responsible for. I then argued that nonlinguistic animals are capable of holding each

⁸⁵ However, I am not aware of any experimental results considering whether hens will still trust the alarm calls of individuals that are deceptive about food.

other responsible for their commitments, including what commitments one is entitled to, given prior commitments. These practices demonstrate that nonlinguistic animals are capable of implicitly holding each other responsible for their mental transitions. In the prior section, I argued that it is possible for nonlinguistic animals to attribute commitments to others and acknowledge their own commitments. The claims in these two sections were made about several different species because my aim was to show that it is possible to meet each of these conditions without linguistic capabilities. I will now argue that it is possible for some nonlinguistic animals to have all of these capabilities by arguing that the social practices of chimpanzee communities demonstrate that they can meet each of these conditions.

4. Chimpanzee Normativity

Chimpanzees live in strictly enforced social hierarchies (Stanford, 2018, p. 43). One of the ways in which that hierarchy is established and maintained is through demonstrations of submission and dominance. When a lower-ranking male chimpanzee crosses the path of a higher-ranking male chimpanzee, the lower-ranking chimpanzee will typically pant grunt and show submissive body language. A pant grunt is a vocal utterance that signals submission (p. 54). If the lower-ranking male chimpanzee generally fails to show these signs of deference, then the higher-ranking chimpanzee will often make a display of dominance. For example, they may charge at the lower-ranking chimpanzee or grab and shake branches around them, presumably to demonstrate their size and strength (p. 54). In the face of such a demonstration, the lower-ranking chimpanzee can decide to show his deference by pant grunting/showing submissive body language, but they can also continue to challenge the established social hierarchy by ignoring the demonstration or by attempting to convince their allies to join the altercation.

Not pant grunting to other male chimpanzees that are dominant is one of the ways in which juvenile males can start to challenge existing social orders and can often precipitate their own rise in the social hierarchy (Stanford, 2018, p. 54). However, there can be severe consequences for male chimpanzees that fail to pant grunt when crossing the path of their social superiors. For example, the alpha male may decide to limit their access to meat, grooming, and/or sex with female chimpanzees, and in some cases, male chimpanzees higher in social hierarchy may decide to reinforce that hierarchy through violence that can, in rare cases, be fatal (Stanford, 2018, p. 70). However, attempts to reinforce the social hierarchy can also have consequences for dominant males that have failed to sufficiently shore up allies by allowing access to meat (Nishida et al., 1992), grooming (Stanford, 2018, pp. 44–46), and/or sex with female chimpanzees (Duffy et al., 2007). If an alpha male has overestimated the strength of their social standing and then attempts to reinforce their dominance, it can lead to a fall in the social hierarchy and/or violence, which in rare cases, can also be fatal (Furuichi, 2019, p. 67). While pant grunting practices are more ritualized and enforced between male chimpanzees, female chimpanzees also pant grunt, though mostly towards male chimpanzees instead of other female chimpanzees (Laporte & Zuberbühler, 2010).

In this section, I will argue that both pant grunting and failing to pant grunt should be regarded as assertions, and in order to do that I will argue that they meet both of Brandom's criteria for what makes a particular performance an assertion. The first criterion for Brandom is that the performance has to be able to license inferences that can lead to further assertions. In other words, the performance is given as a reason. I have already argued in the prior sections that it is possible for nonlinguistic beings to scorekeep and make inferences, so now the question is: do the practices around pant grunting involve inferences and scorekeeping in the sorts of ways

that should convince us that pant grunting licenses further inferences. Pant grunts meet this criterion because other chimpanzees in the social group generally pay attention to these types of interactions and use the information gathered from them to navigate their social space (Dunphy-Lelii & Mitani, 2019). For example, pant grunting or a failure to pant grunt can either help affirm the existing social hierarchy or can play a role in upsetting the existing social hierarchy. Change or lack of change in the social hierarchy has consequences for the chimpanzees in the audience, including by having a bearing on who gets or receives future pant grunts.

There is empirical evidence from both laboratory and field studies that nonhuman primates, including chimpanzees, keep track of this social information on a number of dimensions (Ostner, 2018). Nonhuman primates have been shown to keep track of factors such as dominance ranking, bond strength, kinship, and fighting ability. For example, studies have shown that yellow baboons and Barbary macaques will consider both social rank and fighting ability when recruiting for coalitions “to gain access to a receptive female” (Ostner, 2018, p. 102). However, in cases where there is no “immediate payoff” and “there is a threat of retaliation by the target, as it is in rank-changing coalitions,” then recruitment selection often switches to being determined by “social bond strength and loyalty” (pp. 102-103). Julia Ostner (2018) writes that studies on coalition building among Barbary macaque males show that they are capable of “categorizing group members by more than one trait, i.e., dominance and bond strength, and show that male macaques flexibly use this cognitive ability by implementing one of two selection criteria when selecting a supporter in different coalitionary contexts” (p. 103).

That chimpanzees keep track of this type of information, including third-party relationships, can be shown by their use of it in agonistic situations. For instance, “when attacked, chimpanzees use screams to solicit support from bystanders and modify the acoustic

structure of their screams as a function of the severity of the aggression, thereby providing the bystanders with detailed information about the nature of the conflict” (Ostner, 2018, p. 103). However, chimpanzees are not always honest about the nature of the attack and can exaggerate its severity since this can increase the likelihood of an intervention. However, the attacked chimpanzee will only exaggerate the severity of the attack if the audience includes “at least one bystander that matched or exceeded the attacker in rank” (p. 103). This strongly suggests that the attacked chimpanzee is keeping track not only of the dominance ranking of the attacker but of their relation to the dominance ranking of others and makes decisions based on those relations.

Dominance is a relation, and this comparison involves a relation between relations. In other words, given the arguments offered in Chapter 3, it involves conceptual capabilities because it is not possible for the task to be performed through first-order mappings.⁸⁶ The tracking of relations between others is not limited to existing relations, but also includes the possible formation of further relations. For example, both chimpanzees and white-faced capuchins (in addition to corvids) use “‘separating interventions’ to break up friendly interactions among subordinates” (Ostner, 2018, p. 103). The existence of these separating interventions suggests that dominant subjects are limiting the ability of rivals to form competing coalitions.

So, chimpanzees, like other nonhuman primates, keep track of social status. One of the ways in which they are able to keep track of social status is by keeping track of commitments to or against the current social hierarchy made explicit by those who pant grunt when expected to and those who do not. This, on its own, is not quite enough to meet Brandom’s condition yet. We

⁸⁶ It seems like it should be possible to set up relational matching-to-sample tasks where the relevant relations are social relations relevant to the subject’s species and/or community. Success at such a task would help confirm the claim I am making here.

need to show not only that there is updating, but that at least some of that updating is inferential. The use of transitive inferences is one of the ways in which ethologists have explained how subjects are able to keep track of social information without becoming cognitively overloaded (Ostner, 2018, p. 106). Social hierarchies among nonhuman primates, including chimpanzees, are often linear, transitive, and relatively stable. This opens up the possibility of making inferences about the relative dominance relation between subject A and C, even if the observer has only ever seen A be dominant to individual B and B be dominant over C. Studies have shown that some nonhuman primates, such as baboons, are capable of making these types of inferences (Cheney & Seyfarth, 1990), and other studies suggest that corvids can use transitive inferences to determine where unknown individuals fit within the social hierarchy (Paz-y-Miño C et al., 2004). Unfortunately, while evidence discussed in the prior section showed that chimpanzees are capable of making mental transitions that in the human case we would normally call inferences, I am not aware of any such observational studies on chimpanzees in the wild regarding transitive inferences about social hierarchy. However, captive studies have shown that chimpanzees are capable of solving tasks that seem to require transitive inferences (Gillan, 1981).⁸⁷

In addition, there is empirical evidence that does show that chimpanzees are aware that other chimpanzees can form further commitments on the basis of prior commitments. In other words, chimpanzees seem to have some understanding of committive relations. Schmelz et al.

⁸⁷ It does not particularly matter here how much weight we give debunking arguments that explain away transitive inferences through associative forms of cognition because all we need for this initial claim is some form of transition between commitments that feeds into a normative social system. In other words, whether the transition is being made on an associative basis or on the basis of a transitive inference rule does not affect the force of the claim. As long as some transition is being made by a nonlinguistic animal that lives in a normative social community where normativity means that at least some commitments are rewarded or sanctioned, including on the basis of prior commitments, then the transitions count as inferential.

(2011) studied the ability of chimpanzees to attribute inferences to other chimpanzees through competitive games between two chimpanzees: a subject and a competitor. The experimental set up was inspired by Kaminski et al.'s (2008) use of similar types of games for testing the behavioural abilities of chimpanzees. In those games, a chimpanzee subject and a chimpanzee competitor would watch the experimenter hide a piece of food in one of three buckets. In this case, both chimpanzees knew where the food was hidden and knew that the other chimpanzee had the same information. Then, an additional piece of food was hidden in another bucket, but only the subject chimpanzee would see where this piece of food had been hidden. The chimpanzees were then given the option to choose one of the buckets.

... [if] the competitor was given the first choice, behind an occluder so that the subject could not see his choice, then when it was the subject's turn, she preferentially chose the bucket containing the food the competitor had not seen hidden. This strategy was presumably based on the knowledge that the competitor would choose the bucket where she had seen food hidden, so only the food in the other bucket was left (Schmelz et al., 2011, p. 3077).

Schmelz et al. (2011) modified this type of game to focus on inference attribution instead of knowledge attribution.

In Schmelz et al. (2011), they had two chimpanzees play a similar competitive game where in the test conditions, the subject watched the researcher hide a piece of food underneath one opaque board and also in a secret hole in the table underneath another opaque board. In the first case, the food would make the first board rest on a slant, but the hole in the table allowed the second board to lie flat. The competitor could not see either piece of food hidden, and the subject could not see the competitor. The competitor was then given a chance to look underneath one of the boards in private, before the subject was then also given a chance look underneath one of the boards. If the subject presumed that the competitor would look under the slanted board based on the inference that the food reward would prop the board up, then the subject should choose to

look underneath the board that lay flat. Schmelz et al. (2011) found that if the subject chose first, they would choose the slanted board above chance, but if the competitor chose first (out of sight of the subject), then the subject chose the slanted board in only around half the trials. Schmelz et al. (2011) take this result to show that the chimpanzee subjects are able to attribute inferences where an inference is defined as “going beyond the information given in perception”, meaning that the subjects are not only able to go beyond perceptual information themselves, but are able to recognize that others are able to as well when “thinking about thinking” (p. 3078).

Now, given the prior analysis of inference, we cannot conclude with Schmelz et al. (2011) that the chimpanzee subjects are attributing an inference to the competitor (because we do not know if the subject would be disposed to reward or sanction such a performance). However, what we can draw from this experimental result is that the chimpanzee subject is able to recognize that the competitor is able to form further commitments based on prior commitments. In other words, they are able to recognize that the competitor is likely to form a commitment about where the food is likely hidden based on the perceptual judgment (commitment) that one of the boards is slanted. One might think that this reading is too quick, given that the chimpanzee subject does not choose the non-slanted board every time they choose second, but this fits the idea of partial commitments well (discussed in the previous chapter). If one attributes a partial commitment, one should not expect the individual with the partial commitment to be willing to act on it every time. Therefore, I think it is fair to interpret the results as demonstrating an appreciation of committive transitions where the commitments are partial. In other words, the chimpanzee subject is able to recognize that the competitor is able to form partial commitments on the basis of prior commitments that have a material relation to the partial commitment and

where the degree of the commitment is understood as the level of willingness to act on the basis of the said commitment.

Given these results (the importance of keeping track of shifts in social hierarchies and allegiances among chimpanzees, the ability of some other nonlinguistic animals to make transitive inferences about social hierarchies, the ability of captive chimpanzees to solve tasks that require transitive inferences, and the ability of chimpanzees to attribute committive transitions to other chimpanzees), it can plausibly be suggested that chimpanzees can meet Brandom's first criterion for assertions. Pant grunts provide social information that licenses inferences about the current stability or lack thereof of the current social hierarchy and this information can be used to licence further inferences about everything from when to exaggerate the severity of an attack to when to break up social interactions that could lead to disadvantageous allegiances. Now, one could respond by arguing that even if chimpanzees are capable of making mental transitions about social hierarchies, it is not clear that these mental transitions meet the externalist criteria for the normativity of inference. The mental transitions and performances of chimpanzees can only count as inferences and commitments if the chimpanzees can be held responsible for those mental transitions and performances. Precipitously, this pushes us directly into considering Brandom's second criterion for a performance to count as an assertion.

The second criterion for making an assertion is that one is undertaking a responsibility to demonstrate their entitlement to that commitment if entitlement to it is challenged. Once again, in the prior sections of this chapter, I argued that it is possible for nonlinguistic beings to hold each other responsible for their commitments through rewards and sanctions. Now, we can ask: can the social practices around pant grunting meet the criteria for making a commitment and can

one be rewarded or sanctioned for making that commitment? It is perhaps easiest to consider this question in cases where subordinate males do not pant grunt. As discussed above, when a lower-ranking male does not pant grunt for a higher-ranking male, this can be a challenge to the dominance of the higher-ranking male. Importantly, given the social context and the above discussion of the first criterion for assertions, the challenge is not only a challenge to the higher-ranking chimpanzee's dominance over the challenging male, but also their status within the wider hierarchy.⁸⁸ As Brandom (1994) states:

...putting a sentence forward in the public arena *as* true is something *one* interlocutor can do to make that sentence available for *others* to use in making further assertions. Acknowledging the undertaking of an assertional commitment has the *social* consequence of licensing or entitling others to *attribute* that commitment (p. 170).

Given their use in updating relative social status beyond the confines of the immediate interaction, I propose that pant grunting or failing to pant grunt is a way of making explicit one's partial commitment to occupying or not occupying a space in the social hierarchy.

One might object to the idea of a chimpanzee being capable of putting something forward *as true*; however, for Brandom, to put something forward as true is simply to undertake a commitment in a way that takes it as "appropriate for others to *take* true, that is to endorse themselves" (p. 170). This is just how claims about one's status in social hierarchies usually work given their relational status – one is not only making a claim about one's own sense of their status within the hierarchy, but also how one expects others to treat them given their status, and how that status affects the relative status of others in the hierarchy. It counts as making something explicit because it makes that status available to others and given the first criterion for assertions, that status can be used in a variety of different situations. One can use that

⁸⁸ The consequences for falling within the social hierarchy can be serious and sometimes even lethal (Pruetz et al., 2017).

information to change how they react to the individual who has pant grunted/not pant grunted, the dominant male, or the status of other non-involved parties whose social status may be either stable or changed based on the interaction. Furthermore, not only can a chimpanzee use that information in their dealings with a variety of individuals and/or groups, but they can also use it in a variety of social contexts, whether they are navigating grooming or sexual contexts, sharing meat, or deciding whether they should exaggerate the severity of an attack. Like in Chapter 4, inferential promiscuity and variety of modes of use come together.

If this interpretation is correct, then pant grunting can be regarded as undertaking a partial commitment to occupying a lower rank in the social hierarchy and confirming the higher-ranking chimpanzee's entitlement to his dominant status. Failing to pant grunt can also undertake a partial commitment because it is incompatible with the higher-ranking male's entitlement to their dominant status. Brandom (1994) states that "two commitments are incompatible with each other if commitment to one precludes entitlement to the other" (p. 160). Since failing to signal submission by pant grunting is incompatible with the higher-ranking male's entitlement to his place in the hierarchy, if unchallenged, it has the potential to take away his entitlement to that dominant status.⁸⁹ So, if the higher-ranking male wants to maintain his entitlement to his status, he will need to challenge assertions incompatible with his status by undermining the subordinate chimpanzee's entitlement to that claim. As discussed earlier, higher-ranking chimpanzees respond in a variety of ways to a lower-ranking male's failure to pant grunt, including threats, violence, and/or limited access to meat, grooming, and/or sex. This, I want to contend, is a type of holding responsible.

⁸⁹ Given the right social context and the right individual. For example, the failure of a juvenile male to pant grunt need not be incompatible with the alpha male's status.

Male chimpanzees that undertake a partial commitment against the existing social hierarchy have their entitlement to that commitment challenged through sanctions, while chimpanzees that confirm their partial commitment to the existing social hierarchy by pant grunting may be likewise rewarded through access to meat, grooming, and/or sex. The role of reasons here is easier to see if we consider the default/challenge structure that Brandom takes the space of reasons to have. Brandom (1994) argues that one has default entitlement to a commitment unless one's entitlement to it is challenged (p. 176). So, the urgency to challenging any commitment that undermines a higher-ranking male's entitlement to their status can be seen here. If left unchallenged, it has default entitlement and is licensed for use not only for the individuals directly involved in the interaction, but for audience members as well.

To challenge one's entitlement to a commitment is a form of asking for reasons. Not pant grunting, when one is expected to, can be seen as asking for a reason to undertake a commitment to the existing social structure, and then in challenging that commitment, the higher-ranking male can be seen as asking for a reason for the challenger's commitment to withhold entitlement to that social structure. In other words, a threatening charge is a way of challenging entitlement to a commitment, and likewise can be understood as a way of asking for a reason for a commitment. The challenger or the higher-ranking chimpanzee can vindicate their commitment by demonstrating a pattern in the world that reflects the material inferential relation endorsed (Strijbos & de Bruin, 2012, p. 150). For example, having a large number of allies or fighting ability is likely part of the internal material inferential connections that constitute DOMINANCE, so demonstrating the existence of those patterns in the world (by demonstrating that one has enough allies) is a way of vindicating one's entitlement to their commitment to one's dominant social status.

I think we should be careful not to state these commitments too strongly, which is why I have labeled these commitments as partial commitments where the level of commitment is determined by a willingness to act on the commitment that is less than every time. If it was not partial, then the higher-ranking chimpanzee would be obligated to sanction every non-instance of pant grunting. We can also further explain performances that are not sanctioned by considering some of the intervening factors discussed in the prior section. For example, if the lower-ranking chimpanzee does not pant grunt, the higher-ranking chimpanzee may not sanction it if they do not have a sufficient number of allies in the area or if they are intimidated by the fighting ability of the lower-ranking chimpanzee (among other possible intervening factors), even if they would normally be disposed to sanction such a performance.

A more significant worry that I expect others to have is that physical threats and violence are normally taken to be fundamentally different than the sorts of epistemic reasons that Brandom is concerned with. Brandom's 'reasons' are reasons to believe one thing or another, whereas threatening charges are what we might call '*ad baculum* reasons.' For example, if I ask why I should believe that there is a lake ahead, a good epistemic reason would be that you can see the water through the trees or by pointing to where it is on the map. An *ad baculum* reason is an appeal to force: "you should believe that there is a lake ahead because otherwise I will beat you with a stick." Appeals to force can be powerful motivators for action but are generally regarded as failing to provide epistemic support for beliefs or claims.

However, when it comes to navigating chimpanzee social hierarchies, *ad baculum* reasons can also be epistemic reasons. For example, if we take the semantic content of failing to pant grunt to be something akin to "I don't believe that you are bigger and badder than me," then demonstrating how much bigger and badder one is, is a perfectly respectable epistemic response.

In fact, this sort of response is demonstrative in the same way that the shoe-tying example in Chapter 4 was demonstrative. In that case, a demonstration of shoe-tying ability provided a reason for the claim that one could tie their shoes. Since dominance and submission are (at least partly) claims constructed and maintained through force, a demonstration of force can be a perfectly respectable (at least epistemically speaking) reason.

Or if the semantic content is something like “I don’t believe that you have social standing over me”, then rallying one’s allies can also be a perfectly good demonstrative reason for challenging the claim. Obviously, we should be careful when assigning semantic content to the communicative actions of nonlinguistic animals, but I am using these examples, not to convince the reader that they are the right semantic content to assign to a given chimpanzee’s actions and more to show that, given this type of social context, *ad baculum* reasons can function as epistemic reasons. If we want to be stricter, we can put these interactions back into Brandom’s vocabulary: if the challenge is to one’s entitlement to their dominant place in the social hierarchy, then demonstrations of the things that have a material inferential connection to dominance (especially if the inferential connection is internal), whether it is fighting ability, strength, or coalition building, are all perfectly good ways to demonstrate the epistemic standing of that entitlement. The fact that they can also function as *ad baculum* reasons is far from a threat to their epistemic status. Instead, it helps undergird Brandom’s claim that the space of reasons emerges from a system of social sanctions and rewards for the basic moves within social practices.

In this section, I argued that chimpanzee pant grunts meet both of Brandom’s conditions for making an assertion. First, they license inferences by making a partial commitment to one’s relative status within the social hierarchy explicit in front of an audience that can then use that

information to make decisions about how to navigate social contexts (including when and who to pant grunt towards in the future). Second, one can be held responsible for pant grunting or not pant grunting through rewards or sanctions for affirming the existing social hierarchy or failing to affirm it. In addition, I have argued that while these types of interactions may seem to involve *ad baculum* instead of epistemic reasons, I have argued that within the sort of social hierarchy that chimpanzees live in, *ad baculum* reasons can be epistemic reasons.

Now, I think the case I have made here is a compelling one, but I could understand why someone may find it incomplete or wanting. While most of the evidence in this section comes from studies on wild chimpanzees, gaps in that empirical literature mean that I have had to shore up some my claims with empirical evidence from laboratories or empirical results from other nonhuman primates. So, I think a fair objection at this point would be to argue that while this section, or even this dissertation as a whole, is able to demonstrate that the abilities that constitute conceptual capabilities can be identified throughout the nonlinguistic animal kingdom, my dissertation has failed to show that any one nonlinguistic animal has all of the required capabilities. Therefore, the inference from the aforementioned evidence to the claim that some nonlinguistic animals have conceptual capabilities is weak.

While I think this sort of objection can be made, it is a difficult one for normative conceptual holists to make. As we have seen, NCH takes the abilities that are necessary for conceptual capabilities to either come as a complete package or not at all, so it is not possible for a normative conceptual holist to make this objection without undermining their own framework (at least in its current form). Perhaps a normative conceptual holist could argue that each of the attributions is a misattribution because one can only attribute one type of capability if one can attribute them all. However, the same sort of move can be made against objections by normative

conceptual holists: because the capabilities come as a package, all it should take is the identification of one capability to justify the attribution of all the capabilities. Unsurprisingly, I think the latter claim has stronger standing given that over the course of this dissertation, I have argued that it is possible to have each of these capabilities without linguistic capabilities. Unless a normative conceptual holist can come up with positive and specific reasons for not attributing each one of these abilities to nonlinguistic animals, then if even one of my arguments works, the conclusion still follows. Furthermore, I suspect that current limitations on attributing all the capabilities to any one nonlinguistic animal speaks to the need for more empirical research than anything else.

This objection has better standing outside of NCH, where it is possible to argue that one can have one of these capabilities and not the others. However, I think that a non-NCH version of the objection may still be demanding too high of an epistemic standard. Doing good behavioural research will likely require claims and results from both laboratory and field studies, and comparative claims between species. Furthermore, one can never be entirely confident about the claims of empirical science given their basis in inductive methods. So, I suspect that any weakness in the claims is an artifact of doing philosophy that takes science seriously, and skeptics will need to have reasons for thinking that philosophy can get along just fine without taking science seriously.

However, if one insists that such a high epistemic standard is required, there is still a slightly weaker claim that can be drawn from this dissertation. The claim is that linguistic capabilities are not necessary for conceptual capabilities because the capabilities that constitute conceptual capabilities are all possible without language. So, while one may insist on the epistemically conservative stance that we cannot yet attribute conceptual capabilities to any

existing nonlinguistic animal that we know of, this move does not allow the skeptic to deny that it is possible for a nonlinguistic being to have conceptual capabilities. Given the number of identity claims between language and conceptual capabilities that have been surveyed throughout this dissertation, this is still a significant result.

Furthermore, as we have seen, a lot of the arguments against attributing nonconceptual capabilities to nonlinguistic animals rest on denying that without language having these capabilities is not even possible. For example, arguments about inference considered in the previous chapter, claimed that it is not possible to make inferences without language. Often these possibility claims are then used to deny something that scientists are already claiming or that we would even just ordinarily take as common sense. For example, the argument that it is not possible for nonlinguistic animals to exhibit play behaviour because play behaviour requires third-order intentionality would mean that the common usage of the term ‘play’ to refer to the behaviour of animals like dogs or lion cubs must be mistaken or at best metaphorical. So, if I am correct in taking this dissertation as providing an argument for the possibility of nonlinguistic conceptual capabilities and many of the associated cognitive capabilities, then the road from the weaker version of my thesis to the stronger one is already being paved.

5. Conclusion

In this chapter, I have argued that it is possible for nonlinguistic animals to meet Brandom’s criteria for a performance to count as an assertion. In order to show that, I first argued that it is possible for nonlinguistic animals to undertake and acknowledge commitments by pointing out that making content explicit through acts such as elaboration involves the acknowledgement of a commitment. When elaborating in response to communicatory failure, one must not only recognize the content of the commitment that one is trying to undertake but

also recognize that the audience has failed to recognize the content of that performance. In other words, elaboration in response to communicatory failure requires an awareness of the actual content of a commitment because otherwise it is not clear how one could make decisions about what additional signs would lead to communicatory success.

Second, I argued that it is possible for nonlinguistic animals to attribute commitments and entitlements to other subjects without necessarily requiring sophisticated metacognitive abilities linked to belief and desire talk. I supported this theoretical move with experiments that *purported* to show that Eurasian jays are capable of taking the desires of partners into account in food sharing contexts. I argued that *instead* of taking these results to show that the Eurasian jays were attributing desires to their partners, these results could be explained through the inferentialist framework where choices about food sharing demonstrate commitment and entitlement attribution. These two arguments establish that it is possible for nonlinguistic animals to partake in social practices that involve deontic scorekeeping. This shows that the sorts of communities formed by nonlinguistic animals need to be considered as possible sites for original intentionality and normativity.

Third, I argued that experimental results from animal behavioural science that purport to show that nonlinguistic animals are capable of making inferences demonstrate that nonlinguistic animals are capable of making the types of mental transitions we would normally call inferences if one can be held responsible for them. The externalist conception of inference outlined in Chapter 5 is that an inference is a transition from one commitment to another that others in one's community are disposed to sanction or reward. I argued that this condition can be met by identifying behaviours that involve sanctioning or rewarding inferential transitions indirectly and implicitly by sanctioning or rewarding commitments given one's entitlement to them based on

prior commitments that one has made. I argued that we do see these sorts of practices within at least some nonlinguistic animal communities, such as when a chicken who makes alarm calls deceptively is no longer treated as entitled to make that commitment. These three arguments show that at the very least, it should be considered possible for nonlinguistic animals to have the sorts of capabilities that will allow them to be a part of a normative social community where practitioners scorekeep and make inferences.

Given this possibility, I turned to analyze the practice of pant grunting within chimpanzee communities and argue that pant grunting or not pant grunting in contexts where it is expected can be regarded as assertions within Brandom's inferentialist framework. Therefore, there is at least one type of nonlinguistic animal community that counts as normative from an NCH perspective. Brandom's two criteria for a performance to count as an assertion are that first, the performance must license further inferences and that second, the performance must be one that the performer can be held responsible for. The first criterion is met by the ways in which other chimpanzees keep track of their status and the status of others in the social hierarchy based (in part) on interactions that involve pant grunting or the lack of pant grunting. I then argued that the ways in which pant grunting has social consequences and the ways in which higher-ranking chimpanzees inflict those consequences on lower-ranking chimpanzees that fail to pant grunt shows that the practice meets the second criterion. Therefore, I argued that pant grunting or not pant grunting when it is expected should be considered an assertional performance, and that chimpanzee communities should be regarded as normative ones.

Finally, I considered an objection that considers my prior account of chimpanzee social practices as insufficient for establishing that there is any one nonlinguistic animal species that has all of the necessary capabilities for conceptual capabilities. This objection claims that while

the arguments I have made over the course of this dissertation have established that each one of the capabilities can be found in some species, I have not provided a strong enough case to establish that there is any one species that has them all of the necessary capabilities. In response, I first pointed out that this objection would have to come from outside NCH because normative conceptual holists do not think that one can have any one of these capabilities on their own without having all the others. Furthermore, since normative conceptual holists take these capabilities to come as a package, then a sufficiently strong argument for any one of them should be regarded as evidence that the nonlinguistic animal that has that capability must also have the rest of them. Second, I considered how the objection could be made from outside the NCH framework. I argued that even if we grant the truth of the objection, this dissertation can still be seen as making the significant claim that nonlinguistic conceptual capabilities are possible. Since many of the arguments against attributing conceptual capabilities to nonlinguistic animals are modal arguments that claim that conceptual capabilities are impossible without linguistic capabilities, the weaker conclusion actually goes a long way towards proving my stronger conclusion that there are nonlinguistic animals that have conceptual capabilities.

Chapter 7

Conclusion

In this dissertation, I have argued that at least some nonlinguistic animals have conceptual capabilities. I have motivated this conclusion by staging an interaction between ideas and theories from NCH and empirical work from the animal behavioural sciences. The conclusion that emerges from this interaction is that if grasping a concept is a matter of situating oneself in a space defined by normative and holistic relations, then at least some animals have conceptual capabilities. For those who remain unconvinced by the entire picture and take my conclusion to overstep the empirical results I have presented, a more modest conclusion can be derived that it is possible to have conceptual capabilities without linguistic capabilities. Since most of the philosophical arguments against the former and stronger conclusion come from denying the latter and weaker conclusion, I take there to be a decent to strong inference from the latter to the former anyway. In this concluding chapter, I will provide a brief summary of my main findings, and then discuss the chapters from a slightly different perspective that highlights the theoretical payoffs of the dissertation beyond just those that are relevant to the philosophy of animal minds.

As mentioned above, the central argument of this dissertation is that at least some nonlinguistic animals have conceptual capabilities. I argued that the central motivations from NCH for denying the possibility of nonlinguistic conceptual capabilities can also be used to derive the absurd conclusion that no human has conceptual capabilities. This absurd conclusion can be avoided if normative conceptual holists give up the claim that acquiring conceptual capabilities (or at least the initial concepts) requires epistemically efficacious content. However, dropping this claim also eliminates much of the motivation for thinking that acquiring conceptual capabilities will require linguistic capabilities. This creates space for considering whether

nonlinguistic animals can have conceptual capabilities. I then argued from the later Sellars' psychological nominalism that succeeding at relational matching-to-sample (RMTS) tasks requires conceptual capabilities. This form of psychological nominalism states that awareness of abstract entities requires conceptual capabilities. I argued that success at RMTS tasks requires awareness of abstract relations, therefore nonlinguistic animals that are able to succeed at RMTS, such as crows, amazons, and chimpanzees, have conceptual capabilities.

The rest of the dissertation can be understood as taking on a series of objections that try to reject the claim that nonlinguistic animals could have a normative capabilities like conceptual capabilities. The first objection asserted that being a part of the space of reasons requires the ability to have and present reasons. Content in the form of a reason is explicit, and explicitness is a type of linguistic form. I responded to this objection by arguing that linguistic form is neither necessary nor sufficient for explicitness and that animals are capable of demonstrating the empirical markers for making and having explicit content. The second objection claimed that content can only be coherently regarded as a reason if it can play a role in inferences and since inference requires thought with syntax and metacognitive capabilities, that only creatures with linguistic capabilities will be able to have reasons. I responded to this objection by arguing that this picture of inference and inferential capabilities does not even seem to line up with the sorts of inferences that linguistic humans make. In addition, I argued for an externalist account of responsibility that alleviated the need for metacognitive processes in inferential practices. The final objection claimed that the ability to make inferences requires the ability to make assertions and the ability to make assertions requires linguistic capabilities. My response to this objection used empirical results from laboratory and field work with chimpanzees and other nonlinguistic animals to show that they are capable of making assertions. I argued that chimpanzee pant grunts

should be regarded as assertions because they can license further inferences and one can be held responsible for them. Therefore, the claim that conceptual capabilities are normative does not exclude nonlinguistic animals from potentially having these types of capabilities.

Now, I want to conclude by briefly taking a slightly different perspective on the sorts of lessons that can be drawn from these chapters. When I took “Critical Animal Studies” with Andrew Fenton in the very first semester of my PhD, he said something along the lines of: thinking philosophically about other animals should not only change the way you view other animals but will also change the way you view philosophy.⁹⁰ I took Fenton to be claiming that thinking with and through nonhuman animals has the potential to not just make us rethink our understanding of animals, but to cascade and make us rethink a lot of our other philosophical ideas and positions, many of which on the surface may seem to have little to do with animals. Since I initially heard that claim, I continue to be astounded at just how often philosophers mention nonlinguistic animals in their work. They pop up way more than one would expect, including from philosophers who insist that they have little interest in animals outside their own species. They are often used as a contrast case, a kind of empty vessel that one can fill up with all of the things they cannot do which then allows us to better understand ourselves and the things we can do. However, one of the main points of pressure that I hope this dissertation has created is that many of the claims thrown into that empty vessel seem straightforwardly false. The armchair reflections that fill up this container do not withstand empirical scrutiny. However, given that all of these claims about what nonhuman animals cannot do were supposed to shed light on things that humans can do, their falsity has consequences not just for how we view nonhuman animals, but how we view ourselves.

⁹⁰ Since I heard him make this claim around seven years ago now, I cannot claim that this paraphrase is entirely accurate.

So, while I want to emphasize that this dissertation is focused on nonlinguistic animals and nonlinguistic animal minds for their own sake,⁹¹ I think it is also worth briefly reexamining the chapters with an eye to how bringing nonlinguistic animals into our philosophical conversations can reshape our understanding of ourselves and our world. This will also allow me to speculate on some of the ways in which this project can be expanded into future work. In Chapter 2, I argued that the current set up of NCH means not only that it is unable to explain concept acquisition, but that it is unable to explain how concept acquisition is possible. Furthermore, I argued that the way out of this dilemma shows that what leads to the emergence of conceptual capabilities are the causal abilities of being able to reliably classify objects in the world and being able to make mental (or otherwise) transitions from and to those classifications. Since conceptual capabilities emerge from these causal capabilities, there is an opportunity to reconsider whether NCH is compatible with some form of abstractionism or nativism. In that chapter, I argued that as long as abstractionism and/or nativism do not call a capability conceptual until holistic and normative structures have emerged, there is no reason not to think that some version of one of them could potentially fill the acquisition sized hole in NCH.

In Chapter 3, I argued that Sellars' psychological nominalism and his account of picturing provide a way to distinguish between which tasks require conceptual capabilities and which can be solved through nonconceptual means. This provides a potential standard for figuring out whether sophisticated AI systems, such as large language models, can be regarded as having conceptual capabilities. For Sellars, all languages involve a picturing component, and

⁹¹ I want to stress this because sometimes other philosophers have presumed that my interest (and that the only reasons one could have an interest) in nonhuman animal minds is driven by the thought that understanding nonhuman minds will lead to a better understanding of human minds. It may be the case that thinking about nonhuman animal minds will lead to such payoffs, but that is not my point of emphasis or my reason for thinking about nonhuman animal minds. Nonhuman animals and their minds are interesting in their own right, whether or not they provide any insight into humans and human minds.

sophisticated linguistic capabilities can be developed before conceptual capabilities emerge (deVries, 2005, p. 53), so the mere linguistic sophistication of these models will not be sufficient for justifying the attribution of conceptual capabilities. Instead, they will need to solve the sorts of tasks that require awareness of abstract entities, something that, to my knowledge, they still tend to struggle with (Ricci et al., 2021).

In Chapter 4, I argued that linguistic form is neither necessary nor sufficient for explicitness, and as a consequence, linguistic capabilities are not necessary for having and providing reasons. The resulting picture of explicitness was a two-dimensional continuum with awareness on one dimension and understanding on the other. I argued that ease of use and variety of modes of use were empirical markers for these dimensions. The large swath of results from the animal behavioural sciences that seemed to demonstrate that nonlinguistic animals are capable of moving content along both of these dimensions all involved some form of communication. That suggests that what is relevant for demarcating reasons from ‘free-floating rationales’ is social communication, not linguistic capabilities. This would help explain why we thought there was a tight connection between explicitness and language since language facilitates and aids communication. In some ways this helps vindicate the value of language for making content explicit, but here we get the bonus of an actual explanation for why language is able to so successfully play that role.

In Chapter 5, I argued for an alternative to Boghossian’s taking condition. Boghossian (2014) argues that the only way to distinguish inferences from other sorts of mental transitions and the only way to explain the normativity of inference is to posit an occurrent taking state whose intentional content is an inferential rule. I argued that the taking state is not able to fulfill either of the roles that motivate its adoption and that Brandom’s (1994) externalist account of

responsibility can provide an alternative way to distinguish inferences from other mental transitions while providing an account of the normativity of inference. As Boghossian (2016) pointed out, accounts of inference by externalists tend to simply ignore the role of responsibility for differentiating inferences from other types of mental transitions. So an externalist account of responsibility allows one to both avoid the attribution of implausible internalist taking states and also meet the normative conditions that internalists rightfully emphasize as important for making a mental transition count as an inference. Furthermore, this account helps undergird the foundations of inferentialism by providing an inferentialist means of distinguishing inferences from non-inferences – a distinction that Brandom and others seem to have concluded had to be assumed by the inferentialist framework (e.g., Valaris, 2020, p. 7).

Finally, in Chapter 6, I used Brandom’s inferentialist framework to analyze the social practices of free-living chimpanzees. While there have been prior applications of Brandom’s framework to social phenomena (e.g., Tirrell, 2012), there are fewer than one may expect, given some of the sophisticated theoretical tools developed in *Making It Explicit*. My hope is that the analysis in this chapter provides a useful example for how some of these tools can be applied to social practices, human or nonhuman. The way in which the recognition of social hierarchy can be made explicit through practices like pant grunting provides a useful means for thinking about social phenomena as distinct as the use of titles, salutes, and the tracking of third-party relations by various members of the corvid species (Massen et al., 2014).

Even for those who remain ultimately unconvinced by the case I have made in this dissertation, there is still the significant pay off that rejecting the claims I have made will require actually engaging with the exciting results emerging from the animal behavioural sciences. Being accurate about the sorts of claims that we are making about nonlinguistic animals has the

potential to both enrich our understanding of those animals and more accurately shape our image of ourselves. I think that NCH has a lot to offer when it comes to understanding animal behaviour, but even if normative conceptual holists ultimately reject this claim, an encounter with nonlinguistic animals outside of the armchair has the potential to reshape what we think it means to be creatures with conceptual capabilities.

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