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A Defense of the Existence of Emotions in Birds

M.A. Thesis

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Tartu, 2018

“When birds look into houses, what impossible worlds they see. Think. What a shedding of every knowable surface and process. She wanted to believe the bird was seeing her, a woman with a teacup in her hand, and never mind the folding back of day and night, the apparition of a space set off from time. She looked and took a careful breath. She was alert to the clarity of the moment but knew it was ending already. She felt it in the blue jay. Or maybe not. She was making it happen herself because she could not look any longer. This must be what it means to see if you've been near blind all your life. She said something to Rey, who lifted his head slightly, chasing the jay but leaving the sparrows unstartled.”

—Don Delillo, *The Body Artist*

“Every single creature is full of God and is a book about God. Every creature is a word of God. If I spend enough time with the tiniest creature, even a caterpillar, I would never have to prepare a sermon. So full of God is every creature.”

—Meister Eckhart

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Acknowledgements

This thesis is thanks to years of academic growth and support. I am very thankful to the University of Tartu for the academic and financial support and providing me with an inspiring and wonderful environment, and the Faculty of Philosophy and Semiotics, including Alexander Davies, Heidy Meriste, Siobhan Kattago, Jaanus Sooväli, and Tiina Kirss for their helpful conversations and engaging lectures. I'd especially like to thank my advisors Vivian Puusepp and Francisco Orsi for all of their work and feedback. I'd also like to thank Dr. Orsi for going above and beyond with all of his help and advice with my applications to schools for further research.

I would also like to thank my parents, sister, and my grandmother for their warmth and support. I'd especially like to thank my mother for all of her encouragement, love, and help from the very beginning, for being someone I know I can always count on, and who has valued and supported my education since I was very young. I'd also like to thank my friends and fellow students for their company and conversation during my studies here, especially Patrick Keenan, Gina Asalon, Roberto Vera, Aurimas Miksys, Mirt Kruusmaa, Mert Salkim, and Merily Salura, and give thanks for the continued presence my old friends, Kata Gomeztagle-Johann, Ben Overzet, Olympia Silve, and Jessica Glendennan.

A final and special thanks to Perry the parakeet for inspiring my love of birds and showing me how much personality they can have.

Introduction

Do birds feel emotions? The answer for many laypeople, especially those who live with birds, is an obvious 'yes'. But even if all laypeople thought (whenever they might stop to think about it) that birds had emotions, this certainly wouldn't prove the matter to be true. And there are many good reasons to doubt it. Birds have very different brains than ours. They are not capable of all the same kinds of thoughts that we are. They have different kinds of bodies than we have.

What do experts think on the matter? Often, when scientists speak of emotions in birds, they are doing so in a loose sense in the introduction or conclusion of their research, or have their own specific operant definition of an emotion for their own purposes. If the emotional terms aren't given a specific operant definition, then usually emotional terms are used with the same vague sense as in common talk. Such is the case with, for example, Darwin. While Darwin (Darwin, 1965) thought that birds had emotions, and often paid attention to birds' physiological and behavioral details, he nonetheless lacked a clear definition or understanding of what exactly an emotion *is*. This is not to his discredit, since the issue is far from resolved even in contemporary research.

And philosophers are seemingly split on the issue. A number of philosophers have thought it was quite obvious that birds experience emotions. The ancient stoic Posidonius, for example, thought that the obviousness of grief, anger, and fear in animals counted against more rationalistic theories of emotions (Nussbaum, 2003: 88-90). David Hume (2007: 212) agreed about this obviousness, writing specifically about birds:

The very port and gait of a swan, or turkey, or peacock show the high idea he has entertain'd of himself, and his contempt of all others. This is the more remarkable, that in the two last species of animals, the pride always attends the beauty, and is discover'd in the male only. The vanity and emulation of nightingales in singing have been commonly remark'd...

Nussbaum also finds it quite obvious that animals experience emotions, adjusting her account of emotions to accommodate this fact (and, in her view, thereby improving it). It's not clear to what extent the obviousness of this purported fact should be given weight, though (as Posidonius, Nussbaum, and Hume seem to suppose). Plus, this intuitive obviousness breaks

down when we ask *which* emotions birds might experience, or when we consider just what emotions really *are*.

My goal is to provide grounds for thinking that (at least some) birds can experience at least some emotions. I will first provide some general considerations about how we should reason about the attribution of emotional states to birds, largely borrowed from similar considerations regarding attributing conscious states to them. I will next provide some behavioral and physiological evidence for bird emotions. Next, I will look briefly at bird neuroanatomy and consider whether they seem neuroanatomically equipped for emotions (or whether their neuroanatomical differences from mammals should be treated as significant). Next, I'll consider the potential mental and cognitive requirements for emotions, such as the ability to possess mental content and propositional attitudes, and show how birds can meet them. Finally, I'll give some brief considerations regarding whether birds feel human-like emotions or their own brand of emotions.

One presupposition I will hold throughout most of this thesis is that birds are conscious. If I didn't make this assumption, I would have to spend most of my time arguing for bird consciousness rather than for bird emotions. For arguments and evidence of bird consciousness, see: Tye (2017), Butler and Cotterill (2006), Cabanac et al. (2009), Merker (2005), and many others.

I will not be presupposing any particular theory of emotion to be true or arguing for any particular theory of emotion. Consequently, I won't be engaging very much with philosophy of emotion except to draw from it the potential requirements for a subject to have emotions. This might seem strange, given that this is a philosophy thesis with the word "emotions" in its title. However, most discussion about emotions takes for granted that its subjects have emotions and then tries to deal with the question of what exactly these emotions are. I, however, don't have the luxury of that presupposition and intend on spending my time justifying it. More importantly, I wish to have the strongest position possible, and thus don't want the validity of my statements to rest upon the validity of a particular theory of emotions. Therefore, I will for the most part only reach out to theories of emotions in order to extract from them potential requirements for having emotions.

It might be asked (and I often have been asked) why this question matters. The question strikes me as somewhat odd. Philosophers often try to figure out what's true without

concern for the prescriptive content or practical usefulness of that truth. As it happens, I believe that if birds do turn out to have emotions, that this fact could very well be ethically important, although the question of what this ethical import might be is not something I have space to discuss.

Finally, it might be asked why I'm writing about birds in particular and not animals in general (the question of why I'm writing about birds and not, say, fish is mostly an arbitrary matter of preference: one has to start with *some* animal). As Singer (1975) notes, the category "animals" is a bit misleading and implies that there's some special relationship between a chimpanzee and an eel simply by virtue of the fact that they're both not human. "Animal" (in the sense of a non-human animal) probably describes no natural kind, and reasoning about animals in general (*contra*, e.g., Carruthers, 1989) is an intellectually dangerous business. Part of what makes birds equipped to experience emotions are the particular brains they have and the particular bodies they have. Considerations about their abilities to experience emotions are not the same as considerations regarding a shark or a dog. Considerations from some birds, moreover, might not carry over to others. However, I think that in the following chapters, I will provide good grounds to think that at least many birds have the capacity to experience some emotions.

Chapter 1: Inferential Reasoning and Attributing Phenomenological Conscious States to Animals Generally

Most pet owners and vegetarians would readily agree that animals feel emotions. The point can seem uncontroversial to many people. Imagine two friends sitting down for lunch. One is a vegetarian and one a meat eater. “Why are you depriving yourself of foie gras, one of life’s greatest pleasures?” the meat eater chides. “I believe that ducks experience a great deal of horrific suffering when raised for foie gras,” the vegetarian answers. “Oh come on, you don’t know what it’s like to be a duck,” the meat eater retorts, “you’re just anthropomorphizing.” We cannot simply disregard this accusation. It hints that different people have different intuitions about the capacity for animals to have experiences. For this very reason, we should no more anthropomorphize than groundlessly suppose that certain of our attributes and abilities are unique and not shared by other animals.

A similar problem arises when we consider the possibility of what David Chalmers (1998) has called philosophical zombies (p-zombies). These are theoretical creatures with brains and who behave as if they are conscious but actually undergo no experiences. There is not anything that it is like to be a p-zombie. How do we know that animals are not p-zombies? No amount of empirical investigation alone could answer this question. Moreover, how would we know *which* brain states are also (or give rise to) mental states, when it comes to brain states different from our own? It is not likely, after all, that all brain states are mental ones (for example, a couple of neurons firing in a comatose patient).

Thus, we should start with an agnostic standpoint and first determine how we are going to decide whether or not birds can have emotions. These considerations, in this chapter, run parallel to the way that we would determine whether (some) animals are conscious generally. In this chapter, I will focus on establishing the argument that we should, especially in light of the behavioral evidence presented in the next chapter, assume that some birds are capable of some emotions unless there is good evidence to the contrary. We will start by asking how we might determine whether or not animals have experiences (including emotional ones) and what epistemic grounds seem the most solid for supposing that they are or aren’t capable of having experiences.

Forms of Inferential Argument

There are three popular inferential¹ methods of arguing for attributing familiar kinds of mental states to animals: arguments from analogy, arguments from parsimony, and arguments from the best explanation. These arguments aren't supposed to prove that animals have emotional states with certainty. Rather, they here aim to show that it's more reasonable to assume they do than that they don't in the absence of evidence to the contrary.

Arguments from analogy, Andrews (2016) writes, usually take the form:

- “1. All animals I already know to have a mind (i.e., humans) have property x .
2. Individuals of species y have property x .
3. Therefore, individuals of species y probably have minds.”

Property x will vary depending on the argument but generally will be some sort of cognitive or linguistic ability, behavior, or aspect of brain anatomy. Bartha (2013) collects a number of generally agreed upon criteria for the strength of an argument from analogy. Although the case of animal consciousness seems to meet many of these criteria, it might be found wanting according to a few criteria. For example, “the greater the extent of our ignorance about the two domains, the weaker the analogy,” and “the weaker the conclusion, the more plausible the analogy.” Consciousness overall is a domain that we still know relatively little about, and the claim that animals are conscious seems a strong one indeed. The case of bird emotions might actually find stronger footing here. Emotions are less metaphysically mysterious than consciousness—their appearance less of the apparent miracle as the appearance of consciousness—and we seem to understand them more than we understand consciousness per se.² The argument from analogy could be tweaked for emotions rather simply:

1. All animals I already know to have emotions (i.e., humans) have property x (e.g. a certain behavior or physiological state).
2. Individuals of species y have property x .

¹ I am choosing to present an inferential rather than a perceptualist argument, in short, because inferentialism answers questions about animal experience within a framework more continuous with typical scientific epistemology as opposed to human perception and language and folk practices (see: Allen and Trestman, 2016). Moreover, perceptualism tends towards too strong a bias against the skeptic and at the very least is already quite friendly to the idea of the capacity of animals to undergo emotional states. Even if perceptualism is right, this is only going to support my thesis.

² To repeat, I'm in this thesis going to take for granted that birds are conscious if consciousness is a requisite for emotions (which it probably is). If I were not to take this fact for granted, the bulk of my thesis would then have to be spent defending the idea that birds are conscious at all, a project that has already been undertaken by other philosophers (e.g. Tye, 2017).

3. Therefore, individuals of species y probably have minds.

Evaluative criteria for analogies and the issues regarding providing a justificatory foundation for analogical reasoning are both quite complex. Let it suffice to say here that if analogical reasoning in general is justifiable (that, for example, it is simply a kind of inductive or sample-based reasoning), then this will only support the argument from analogy in regards to animal experience. More importantly, justifications for the specific analogies supporting the emotional and conscious experience of animals will often overlap with defenses of the argument from the best explanation. This overlap will include locating structural similarities and reasoning between cases with common causal properties.

An argument from the best explanation (sometimes called an abductive argument) posits that if some theory best explains the data and facts we have, the hypothesis is likely to be true. Thus, if the theory that animals have emotional states best explains their behavior, it is likely that they have emotions.³ Tye (2017), Palmer (2010), and others argue for the existence of subjective experiences in animals by way of appealing to the explanatory power gained by treating subjective states as having causal efficacy. Pain makes us avoid fire, for example, because of the unpleasantness of the pain. The feeling of pain is not a mere epiphenomenon; the phenomenological or qualitative properties of pain themselves play a causal role. For this reason, best-explanation theorists can also circumvent skeptical arguments such as the inverse-qualia hypothesis (see: Tye, 2017). This argument works well within a reductionist framework of (phenomenal) consciousness that seeks to identify phenomenal properties of consciousness with the brain or functional states that instantiate them (for an extreme example, see: Paul Churchland, 1981). Someone like Churchland who wishes to posit the ontological identity between brain states and qualitative states would reject David Chalmers' notion of a p-zombie out of hand. But we would still be left with answering the question, from our limited epistemic position, of how we know which physical or functional conditions are identical with qualitative experience. Appeals to analogy and arguments from the best explanation can still help with this. Moreover, those who are more sympathetic to Chalmers and Thomas Nagel's arguments against the reducibility of phenomenal consciousness are still left with the question of what these conscious states are for. Michael Tye (2017) focuses on the question of why we

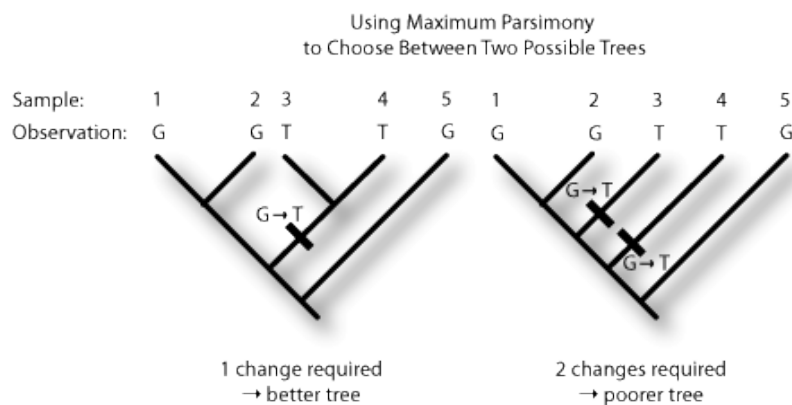
³ This is Andrews' (2016) formulation, at any rate. Tye (2017) formulates this argument differently: if theory x best explains animal behavior, it would be unreasonable to think theory x is false.

would have evolved to have phenomenal consciousness if it didn't do anything. For example, why would pain feel bad if the qualitatively bad feeling wasn't what motivated us to get away from a painful stimulus? Thus, Tye asserts that conscious and emotional states are the best explanation for the behavior of animals.

To see why it is the best explanation and not just a possible explanation, consider a potential objection to Tye's stance: it might be the case the phenomenally conscious states are merely evolutionary spandrels in people. A spandrel (a term coined by Stephen Gould, 1979) is a byproduct of the evolution of another characteristic, as opposed to being a direct product of adaptive selection. The problem here would be that the possibility of spandrels poses a threat to the idea that we wouldn't have evolved to have states of pain unless they had some causal efficacy. While some, like Dennett (2007), have criticized Gould's concept, this objection is still worth responding to.

Firstly, it's not entirely clear what these qualitative properties would be spandrels upon, i.e. what brain characteristics would give rise to them as a byproduct. All the arguments to this effect would just be arguments about consciousness' neurological correlates. The various neurological candidates that would exclude birds will be explored in the next chapter and found wanting. Secondly, the spandrel-hypothesis here carries no compensatory explanatory advantage. Lacking a plausible reason why we should suspect conscious states of being spandrels (the mere fact of their queerness is not reason enough), we have little reason to take spandrel hypothesis seriously. Finally, the spandrel theory would violate the general principle of maximum parsimony in evolutionary theory, which also happens to be the third means of justifying the ascription of subjective states to animals.

The principle of maximum parsimony, as defended by Sterelny and Griffiths (2014), holds that an evolutionary theory with the most explanatory power will assume the least amount of characteristic changes down the phylogenetic tree (see fig. 1).

*Fig. 1*

Note that the phylogeny here concerns certain behaviors that in humans we associate with particular emotional states. Let's take preening and behavioral affection for example. If we didn't take birds to experience affection, we would have to explain social preening in them by positing the emergence of a different state X (let's call it 'schmaffection') down the phylogenetic tree that explains preening behavior without reference to affection. This makes for a needlessly bulky and complex theory. Maximum parsimony, then, will support the argument that attributing emotions to birds has the greatest power in explaining their behavior (as we will see in chapter 6, however, this might not entail attributing to them the exact same emotions as human in all cases).

There is another potential problem that is sometimes brought up regarding the alleged causal efficacy of phenomenal consciousness: the case of blindsight (see: Weiskopf and Adams, 2015). Blindsighted patients are able to perform certain tasks, such as guessing colors and catching a ball, without having any phenomenal consciousness of their visual field. However, the number of tasks they are able to perform is severely limited (they are, for example, unable to spontaneously guess about the colors of objects unprompted). Tye (2017) argues that this limited range of abilities is explainable precisely by their lack of phenomenal consciousness. One could more conservatively say that this limited range of abilities is explainable in terms of the lack of brain or functional components that are identifiable with phenomenal consciousness. The case of blindsight, however limited it might be, shows that there is not a necessary connection between perception and the phenomenal experience of perception. If no such connection exists, than why do we need the phenomenal aspect at all? However, it was never really supposed that all forms of consciousness were phenomenal. Access consciousness and consciousness-of something, for example, have long been

distinguished from phenomenal consciousness (see: Ned Block, 1995). Tye (2017) adds that even in absence of a necessary connection between these kinds of consciousness, a contingent one will do, as many regularities found in biology are contingent and not necessary laws.

Like Tye, I am not here trying to get us as far as believing in experiential states in animals, including emotions. Nevertheless, I suggest that based on the presence of these arguments from analogy, best explanation, and parsimony, it is rational that we prefer the hypothesis that some non-human animals are capable of experiences to the belief that they cannot. Regarding the behavioral observations of birds in the following chapter, I will argue that it is rational to prefer the attribution of qualitative states to these birds as an explanation of their behavior than to say that these birds are acting as p-zombies. Moreover, I will argue that it is rational to prefer the hypothesis that these qualitative states are not simply feelings but emotions.

Chapter 2: Behavioral and Physiological Evidence for the Presence of Emotions in Birds (And some Preliminary Interpretations)

I'd like to briefly review some behavioral evidence for the presence of emotions in birds. I only wish to establish from these studies the *prima facie* plausibility of attributing emotions to birds. Some preliminary analysis of the observations will be offered, particularly in the first sections, in order to show what an analysis of emotions not discussed here would look like.

It is generally agreed upon that emotions “cannot reliably be discriminated on physiological grounds alone” (Sousa, 2013), and at least since the reactions against Skinnerian behaviorism (see Virués-Ortega, 2006), behavior in itself is also not an adequate basis for emotional attributions. Neurophysiology⁴ and behavior together, however, provide the beginning of a strong basis for emotional attribution and one that is often considered adequate by researchers. However, most theories of emotion in philosophy have specific theoretical requirements that need to be met (albeit it can often be demonstrated that these theoretical requirements have been met by appealing to behavioral and physiological facts).

Let us begin our investigation and preliminary analysis of some of the empirical research. Birds have been observed in a number of behavioral and physiological states that seem to indicate emotional experience. I will focus on three relatively simple ones: fear, anger, and affection. The question of whether birds undergo these emotions or bird-specific “schmemotions” will be covered in a later chapter.

Fear and Mental Content

There have been countless studies examining the development, structure, ecology, and function of the fear response in birds (see, e.g.: Suaraz and Gallup, 1983). Diaz et al (2013) measured the variation in escape behavior (via flight initiation distances) in prey birds as relative to local raptor populations. Fear in this study was given an implied functional

⁴ Neurophysiology is the branch of physiology dealing with the nervous system (including the brain).

equivalency to flight initiation distances. This intuitively makes sense, as many of us would characterize a pigeon that flies away from us at a 50-meter distance as more fearful than one that flies away at a 25-meter distance. While this behavioral understanding of fear was adequate for the study, only the staunchest Skinnerian would take escape behavior as fear itself (or proof enough thereof).

A robot could easily be trained to escape danger. Imagine this to be the robot's only function. We would probably not ascribe to the robot feelings of fear. There are numerous reasons for this. Firstly, while the input-output function of the robot is the same (*ex hypothesi*) as with a person or animal escaping danger, there are probably large structural differences between the circuit boards in the robot and a brain. Secondly, there is no correlative physiological state in the robot when it escapes. It does not sweat, its heart does not beat faster, it does not release adrenaline or cortisol, etc. More vaguely, the robot does not seem to have any interest in living and is merely responding to a program. So behavior alone doesn't indicate fear.

Birds, so far, are on much more similar footing with the person than with the robot. Cabanac and Aizawa (2000) found that handling (grabbing and holding) causes domestic cocks (*gallus domesticus*) causes an increase in body temperature and increased heart rate in the birds. Ducks in fear release corticosterone, as humans and many if not all other birds do, and calm down when injected with immediate synacthen, an ACTH (i.e. corticotropin—a hormone associated with fear and stress) agonist (Faure et al, 2003). These sorts of neurophysiological reactions are intimately similar to those of people. And this makes sense. The fear response is biologically very old and basic on the phylogenetic tree. As Nesse and Young (2000) note,

All vertebrates also make corticosteroids. Peptide sequences very similar to those of human ACTH are found not only in mammals, but also in amphibians and reptiles and even in insects, mollusks, and marine worms. Interestingly it is usually associated with immune cells, equivalent to macrophages, where it sets defensive processes in motion.

Since immune cells pretty obviously don't feel fear, however, it's clear that a more complete physiological system of fear-correlated mechanisms is needed to experience fear. Here we would look towards the presence of a sympathetic nervous system, including the adrenal glands and amygdala, which both play a key role in fear, is very zoologically widespread, old, and basic on the phylogenetic tree. On a neurophysiological level, and for obvious

evolutionary reasons, the fear system was not a recent development in humans or even mammals (see: Mobbs *et al*, 2015).

Many philosophers of emotion would argue that a key factor that distinguishes an emotion from a feeling or mood is the intentionality of emotions. In this case, then, one of the main things that distinguishes fear from a feeling such as panic or mood such as acute anxiety is its intentionality. Fear, as opposed to panic, is about something; when one is afraid, one is afraid *of* something. This is known as the intentional object of fear.

One might object that panic *can* have an object or that fear doesn't have to have an object. One might not just panic but panic about one's work meeting. Similarly, one might not just be afraid of an upcoming meeting but simply be afraid. Others might counter back that when people say that they are panicking about their work meeting, they really mean that they are afraid of (some aspect of) it. Who might be correct in this debate is not presently important. I am here using 'panic' to specifically refer to an objectless fight-or-flight response and its associated phenomenology (with the possibility that all panic is objectless). This might seem circular, and it would be if I were trying to argue for a specific definition of fear. What's important to me here, however, is simply to have names to distinguish between affective states with objects and those without objects, given that the ones with objects are typically considered better candidates for emotions. Since it's certainly the case that panic doesn't always have an object and that fear (at least) sometimes does, labeling my object-directed affective state 'fear' and objectless affective state 'panic' will do the job of making this distinction. This same point will apply to later distinctions I make, such as the distinction between 'anger' and 'rage'. It might also be the case that emotions are not intentional states after all (it might, e.g. be argued that fear doesn't have to have an object but is still an emotion). If this is so, our worries arising over intentionality-related issues and the problems they might pose for bird emotions can be disregarded.

Is it rational to believe that the fear of birds can have intentional properties? Pryke (2009) found that Gouldian finches are born with an innate fearful aversion to the color red. Is it fair to say that these birds are afraid of the color red or merely that the color red, due to innate mechanisms in the finches, triggers panic and aversion behavior? This question will involve deeper epistemological and metaphysical issues regarding the nature of mental phenomena and justifying ascriptions and explanations thereof. The question of whether to

attribute fear to a bird rather than mere panic here involves the question of whether the bird's reaction to danger involves a mental representation. A red stimulus triggers mental events in the finch. Do these mental events represent the red at all? If they do not, how could they be about the red? Part of our answer here depends on the nature of mental content. There are numerous theories of mental content, which will be related more explicitly to intentionality in a later chapter. For now, let me just show how one position, functionalism, could answer this question affirmatively. For Dennett (1998: 359)⁵, here speaking as a functionalist, "All attributions of content are founded on an appreciation of the *functional roles* of the items in question in the biological economy of the organism." The role of the finch's fear response is to protect the finch from aggressive or dominant birds, which more frequently have red feathers (Hill and Barton, 2005). The fear, then, is at least roughly about those things that it functions to protect the finch against. Fear functions to protect against a danger. Panic does not serve this function.

A detailed discussion will have to be set aside until later. All of these positions, I believe, can accommodate the assertion that it is fear of red that these finches are experiencing, as opposed to simple red-induced panic. For now, what's important to note is that behavioral evidence points towards intentionality. Barring some theoretical objection, the most straightforward reading of these finches' behavior is that they are experiencing fear. The same goes for chickens being handled and the raptor-cautious birds Diaz et al surveyed.

Further evidence for the intentionality of bird fear comes from the apparent intentionality of bird communication about predators. For example, King (2013: 234) writes, "Corvid calls are not just expressions of fear or arousal but [can] communicate specific messages about predators...". A number of species of birds' songs can both function to signify danger and safety to others (among other things), further supporting the idea birds are perceiving danger (which is an intentional mental state). That is to say, the best explanation of the fact that certain birds songs function to communicate (a) danger seems to be that such (a) danger is already included in or represented as mental content, included in their fear, since perception mediates between the danger and the warning call that the danger is (at least functionally) about.⁶

⁵ Cited in Mölder (2010: 79).

⁶ Some of this sentence is directly taken from a note by Francesco Orsi.

Anger

I used to have a parakeet, Perry, who, if I stole his toy ball, would chase me through the apartment to bite me, even if the ball had already been given back to him. Is it fair to say that Perry was mad at me for stealing his ball? As with the last section, I'm going to distinguish anger from rage in a somewhat stipulative way that will suffice for my purposes. Anger has an intentional object; rage does not. Rage is just a flood of acetylcholine and adrenaline, a state of physical arousal, an impulse to act aggressively, etc. Anger, while physiologically the same, is *about* something. In the case of birds, it is most often objects relating to the defense of one's self or territory.

Tye (2017: 127) discusses the aggressive behavior of birds defending their territory, defending the notion that they are angry rather than simply behaving according to automatic survival mechanisms. He invites us to consider our own response when fighting with someone who has been hitting on our significant other:

Perhaps the behaviors you display are simply the best way for you to survive. But this hardly seems an adequate reply... why not just walk away with your partner? ... Likewise for a bird that is hissing and slapping another bird with its wing. The bird could fly away; it could call for help; it could try to lead the second bird away to another place, to distract it from its present purpose. Why doesn't it do these things? Again, the obvious explanation is that the bird is feeling angry, and that is causing it to engage in aggressive behavior.

Tye here is defending the idea that anger, as a subjective or qualitative mental state, plays a causal role in behavior. However, he does not go far in distinguishing anger from rage. Could rage do the same explanatory job here that anger could? In this case, a territorial intruder would simply spark a physiological reaction in a bird that causes aggressive behavior and a certain phenomenological distinct feeling. What explanatory power is gained by saying that the bird is not just feeling a certain way, but feeling a certain way *about* something?

The matter seems relatively straightforward: when Perry chases me across the carpet to bite me, Perry's aggression is directed towards me. Unless we're questioning the capacity of Perry to possess affective or intentional mental states at all, it seems fairly clear that 1) Perry is in an aggressive state and 2) that Perry's aggressive state is about my intrusion into his territory (in this case, stealing the ball). This aggressive affectation with intentional directionality would typically taken to be anger so long as a few criteria are met. As with fear,

the hormonology and physiology of anger in birds is very similar to that of humans (Soma, 2006).

Secondly, we would want to know that it is not some other, quite different, emotion motivating Perry (the issue of whether it is a different but very similar emotion “quanger” will be addressed later). As Tye notes, because we know that in us, we act aggressively and not some other way when we’re angry, this particular emotion seems to be the best explanation of the bird’s behavior. It’s true that we sometimes act aggressively when frightened, but this does not apply to all cases of aggression. Perry apparently was not frightened when I stole his toy and gave it back; he did not cower or fly away. He was in no immediate need to defend himself. Rather, he was aggressively defending what was his.

Affection

Affection is typically taken to be a prototypical emotion related to social bonding (we will speak of it rather than say, attachment, which is a longer-term pattern and carries a lot of semantic crossover with object-relations theory that lead away from our discussion). I choose to write here about affection as opposed to love for a number of reasons. Firstly, love is not always taken to be an emotion but rather, for example, a certain attitude or sentiment that predisposes one to feel different emotions in different contexts (happiness, jealousy, sadness, etc.) Some philosophers, like Goldie (2000: 16), would assert that love is an emotion and that like other emotions, love is “complex, episodic, dynamic, and structured” so as to allow for other episodes (like fits of jealousy) to play a part. Whatever the case may be, love is usually conceived as involving one or another stringent requirement such as: the valuation of the beloved(s) in a non-fungible sense, the ontological unity or the creation of “plural subjects” in a relationship, the importance of a relationship for its own sake in one’s personal narrative, the importance of the beloved(s) for their own sake, and so on (Helm, 2013). Thus it would be far safer and more realistic to argue for the presence of affection in birds rather than love. However, the neurophysiology and behavioral aspects of these two phenomena will often be highly intertwined. Affection is displayed in birds to mates, children, and to other members of a social group. I will here primarily focus on affection between mates.

Physiologically, there is a lot in common between bird affection and sexual behavior and that of people. The hormone testosterone, for example, was shown to positively correlate

to the activation of sexual and display behavior in male ducks (Ball and Balthazart, 2004), similarly to the importance of testosterone in the sex drives biologically male humans (Anderson et al, 1992). A survey by Emery and Clayton (2015) suggests that birds have a dopaminergic system tied to social and sexual behavior, as well as singing and play. This might also account for the “monogamous” tendency of birds, which plays an important factor in social attachment and monogamy in humans (Curtis et al, 2006), as well as play and fun.

It’s estimated that 90% of birds form pair bonds (Ehrlich et al, 1988). These bonds can last as short as a mating season and as long as for life. As is well-known, many birds engage in complex courtship rituals that include dancing-displays, touching and preening, nest-displays, feeding, and subtle movement cues such as headshaking (Goodwin, 1956). While all animals and even plants engage in reproductive behavior, the pair bonds between birds particularly suggest the presence of affection. While it is probably the case that there are utilitarian evolutionary reasons for this mating pattern, this fact does not mean that affectionate emotions are any less present. On the contrary, philosophers like Tye (2017) would argue that it is the very emotion of affection, directed at the mate, that was evolutionarily selected and serves the utilitarian function.

It is clear that if fear and anger in birds have intentional objects, affection certainly would. Affection seems to have the most specific object, since while the same fear response may be elicited by any predator, affection responses are particular to particular mates. While the “monogamous” relationships of birds is often over-romanticized in popular literature, there is still great significance to the stability and dynamics of pair-bonding in birds. The same argument can be made in regards to many parent-child (and sometimes parent-stepchild) relationships in many birds. The affection in these relationships is revealed further by grieving lost mates and children.

To conclude this chapter, we have here found a number of empirical studies and observations, both behavioral and neurophysiological, which provide *prima facie* reasons for attributing emotions to birds (some—fear—with more certainty than others—compassion). Other emotions which were not covered here include pride, joy, surprise, grief⁷, compassion⁸,

⁷ For potential evidence of grief in birds, see: Bekoff (2007), Marzluff and Angell (2013), Pruette-Jones and Lewis (1990), and King (2013).

and disgust. However, I think that this chapter has at least shown how an investigation into whether birds have such emotions would look. Let's now look at some potential objections to attributing such emotions.

⁸ For potential evidence of compassion in birds, including evidence for mirror neurons, social capacities, and theories of mind, see: Fraser and Bugnyar (2010), Parther et al (2008), Marzluff and Angell (2013), Edgar et al (2011), Dally et al (2010); Whiten (2013); Bugnyar and Kotrschal (2002), and Rosati and Hare (2010).

Chapter 3: On Bird Brains

The limbic system is the emotional center of the brain, coordinating higher brain functions with more basic feelings, as well as having important roles in motivation, memory, and social cognition (Rajmohan and Mohandas, 2007). Birds have a well-developed limbic system that convergently evolved with the mammalian one (Colombo and Scarf, 2012), and the common ancestors of mammals and reptiles (from which birds evolved) have a primitive limbic system centered on the amygdala (Bruce and Neary, 1995). These two well established facts alone (that the limbic system is the emotional center of the brain and that birds have one) do much to suggest that birds experience emotions. However, there might be some potential problems that prevent the presence of a limbic system to be enough, neurologically speaking, for emotions.

Birds, like all other non-mammals, lack a cerebral cortex, which is (often via the neocortex and prefrontal cortex) associated with many higher cognitive functions, personality, complex planning, and the regulation of social behavior in mammals, as well as with language in humans. The lack of a neocortex has been argued by some to be a defeater for the capacity of neocortical animals to have any subjective experiences at all. Another consideration here is how the limbic system frequently interacts with different parts of the cortex in humans, and plays an important role in emotional regulation and generation in humans (Dixon et al, 2017). For these reasons, the absence of a cortex in birds should give us pause.

Although I noted in the introduction that bird consciousness will for the most part be taken for granted, this chapter will be somewhat of an exception. This is largely because I won't be arguing for any specific account of consciousness but will instead be looking at the neurological equipment birds have for emotions (which includes the equipment for subjective experiences). On this issue, Key (2015) writes that, "the evolution of the neocortex in humans has allowed us to experience our environment through subjective mental states such as pain, smell, hearing and vision." This is quite a bold claim and one that's philosophical rather than simply neurobiological. This allegedly unique function of the neocortex, Key posits, is due to the neocortex's complex subregionalisation that "allows the formation of spatial maps of the sensory world" and "multiscale processing of sensory information", its laminated structure that allows for efficient integration of information, and its functionally integrated

microcircuitry. Key purposes that “only animals possessing the above neuroanatomical features...or their functionally analogous counterparts, have the necessary morphological prerequisites for experiencing subjective inner mental states.” Although Key, as we’ll later see, thinks that such analogous parts indeed exist in birds, he is joined by even stronger supporters of the neo-cortical requirement. Such a requirement should be backed up with a specific theory of phenomenal consciousness or with compelling empirical evidence. Some researchers point towards the absence of the typical subjectively felt badness of physical pain in patients with cortical lesions as well as the claims of various medical task forces that the conscious experience of pain requires the presence of a cortex (see: Tye, 2017).

Tye (2017) calls into question the implications of the studies such claims are based upon. Tye’s method is mainly to point towards, instead of people who became decortical through a disease or accident, children who were decortical from birth and to demonstrate the plausibility that they are phenomenally conscious. In his argument, Tye sidesteps neurofunctional accounts of consciousness that specify exactly *why* a neocortex or its functional equivalent is necessary for phenomenal consciousness and relies on his own controversial account of phenomenal consciousness. If we could locate a neurofunctional equivalent of the cortical regions in birds, we could avoid having to challenge the claim that a neocortex or functional analogue is required for experiencing subjective states. This approach seems better, since meeting the requirement for a functional analogue to the neocortex will not require one to take up a controversial theory of consciousness in order to combat the cortical requirement. I will take this approach, which should at least safeguard attributions of mental states to birds if such theories of consciousness as Tye’s turn out to be wrong.⁹ More importantly for my argument, finding functional analogues to the cortex (particularly the neocortex) will help temper concerns that birds’ lack of these areas prevents them from having the emotionally generative functions that the cortex allows in humans.

Block (2015), after positing a functional account of phenomenal consciousness, concludes that the most likely neurological correlate to it is recurrent feedback activity in the sensory cortex¹⁰. Feedback activity occurs when partially processed information is sent from

⁹ Tye also touches on this second sort of reply, but certainly doesn’t rely upon it or take it too seriously given his (perhaps valid) rejection of the neocortical requirement.

¹⁰ The sensory cortex is associated with the neocortex and cerebral cortex. Sensory cortices are observed in some animals as well (as ‘low’ as reptiles), but the occurrence of this feedback activity is more closely associated with

higher to lower sensory pathways, as opposed to a unidirectional lower-to-higher sensory processing structure (Saha, 2010: 1). Butler and Cotterill (2006), performing a neuroanatomical comparison between birds and mammals with the question of consciousness in mind, work under an at least similar understanding of consciousness as arising through the functioning of parallel feedback loops associated with the sensory-motor system. They conclude, “From what has been discussed, it is clear that the circuitry required for this proposed higher-level consciousness mechanism is indeed present in both avian and mammalian brains.”

Key (2015) thinks that consciousness in mammals is due to a laminated (layered) brain structure that allows for complex subregionalisation, sensory-spatial maps, multiscale sensory processing, and efficient informational and functional integration. Güntürkün (2005), based on lengthy observations of the cognitive capacities of birds, concludes, “The avian forebrain displays no lamination that corresponds to the mammalian neocortex, hence lamination does not seem to be a requirement for higher cognitive functions.” Confronted with the evidence of the cognitive capacities of birds, it seems more reasonable to throw out the lamination requirement than to stamp one’s foot and claim that birds must not have such cognitive capacities after all. Key (2014) agrees with Güntürkün and others on this issue explains how this might be so—i.e. that the avian brain has the appropriate analogues to the mammalian cortex and concludes that, “it appears that birds possess the necessary neural machinery for phenomenal consciousness.”

Tye (2017) guesses that pre-cortical cells in birds are remnants of the cell kinds that developed into the mammalian neocortex, performing similar functions. This makes sense, given that there have been numerous studies on the striking structural and functional similarities between the mammalian prefrontal and neocortex and the avian pallium (particularly the subparts nidopallium caudolateral and hyperpallium) and dorsal ventricular ridge (DVR). These parts, like the mammalian neocortex, develop embryonically from a telencephalonic region (Butler and Cotterill, 2006) (the upper forebrain—the last region to develop embryonically and the last part to evolve in humans). The avian pallium (and sometimes the DVR), like cortical regions, allow for the presence of capacities in birds such as

higher brain functions. Sensory processing in the sensory cortex often requires utilization of these other regions (Felleman and Van, 2001).

of goal-directed behavior (Liu et al, 2017), motivation and attention modulation (Güntürkün, 2005), possession of a theory of mind and deceptive behavior, as well as executive decision making, tool-use, vocal learning, numerical reasoning, and working memory (Butler and Cotterill, 2006). Though some of these abilities may only be possessed by some birds (such as numerical reasoning in Grey parrots and theories of mind in certain corvids) many other of these abilities appear wide-ranging and appearing in ‘simpler’ birds such as pigeons and songbirds. Some researchers have even taken to referring, with quotation marks, to the avian ‘prefrontal cortex’ for simplicity’s sake (e.g. Diekamp et al, 2000).

In any case, the higher cognitive functions that these convergently evolved analogous brain areas in birds provide most likely play similar roles in their convergently evolved limbic systems that our cortical regions play in our own limbic systems. This is, of course, nothing approximating a comprehensive neurological comparison between cortical mammals and birds (but see: Butler and Cotterill, 2006). However, it serves my purposes of establishing the plausibility of the avian subjectivity on neurological grounds and more importantly, shows the implausibility of reference to the absence of neocortex as an objection to bird subjectivity. The presence of a well-developed limbic system, coupled with many important functional analogues of the neocortex puts birds in a good position for being able to experience emotions.

Chapter 4: Birds and The Cognitive Component of Emotions

So far I have established a *prima facie* plausibility for the attribution of some emotions to birds by looking at behavioral evidence and comparative neuroanatomy. Now let's turn to a discussion of the nature of emotions and, somewhat, to mental states. First, I will outline three kinds of theory of emotions. Afterwards, I will focus on the conception of emotions that is most problematic for birds and show why it shouldn't be a problem. This will, ultimately, be a conception of emotions that involves language-like thought and mental content. Addressing this conception of emotions, I go on to address the capacities of birds for language-like thought, and then address their capacities for mental content.

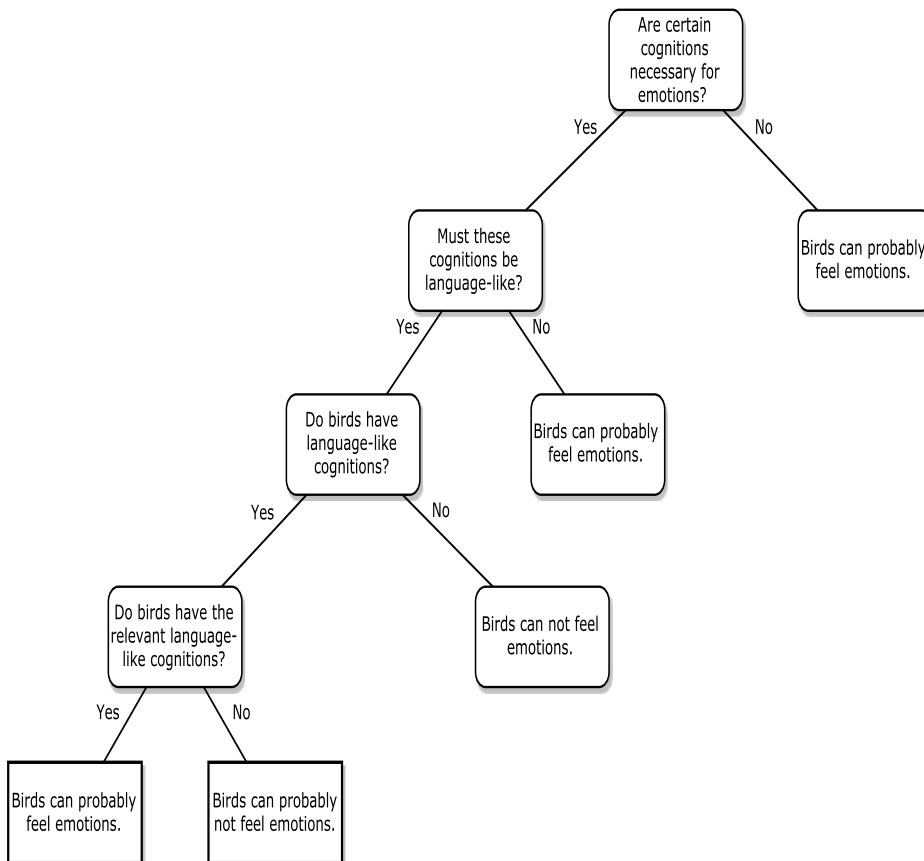
There are three basic categories for theories of emotion:

- (I) A certain cognitive state or process *x* is necessary and sufficient for feeling emotion *y* (see: Nussbaum, 2003; and Solomon, 1984).
- (II) A certain cognitive state or process *x* is necessary but not sufficient for experiencing emotion *y* (see: Ben-Ze'ev, 2010).
- (III) A certain cognitive state or process *x* is neither necessary nor sufficient for experiencing an emotion *y*. This is usually a picture of emotions as being rooted in perceptions of bodily states (see: Prinz, 2005; James, 2007).

If (III) turns out to be right, then there is already little reason to suppose that birds can't feel emotions. This is especially true given the physiological and hormonal similarities between birds and humans, as discussed in Chapter 2. (I) and (II) place potential limitations on who can experience some emotion *x* based on their cognitive capacities. Thus I will focus on these categories, since this is where the challenge lies. For my purposes, it will not be relevant to distinguish between (I) and (II); since the challenge to the capacity for birds will be whether they have the relevant and necessary cognitive states to experience emotion, it makes little difference whether these cognitive states are necessary or sufficient.

If cognitive capabilities are needed for emotions, which ones? They might either be linguistic and propositional (call these categories "language-like") or non-linguistic and non-propositional ("non-language-like") mental representations and/or causal reasoning. There is little reason to doubt that birds are capable of representing the world in some sense (especially after we take a look at theories of mental content at the end of the chapter), so the threat comes

from the possible necessity of language-like representations. This line of reasoning could be represented thusly:



So far, these considerations can be summarized as such: Probably, birds do not have emotions if and only if (1) language-like cognitive states are needed for emotions and (2) birds

do not have the relevant language-like cognitive states or birds have no language-like cognitive states. One could argue against (1) or (2).

Regarding (1), not all cognitivist theorists of emotion believe this to be so. Nussbaum (2003) doesn't believe, for example, that language-like cognitions are necessary for the kinds of evaluations involved in emotions. Solomon (2004), another cognitivist, also expresses doubts that language-like thoughts are always involved in emotional judgments. Many others have raised problems and doubts concerning the relationship between propositions (the contents of language-like thoughts) and emotions, particularly the idea that they are necessary for emotions (see: de Sousa, 2013). Not many of these philosophers would nakedly endorse claim (1), but some would endorse something like it (such as Gordon, 1990; for more on this issue, see: Deigh, 1994). Thus, it is worth mounting a defense of (2). Let us assume for now that (1) is true and focus on (2). That way, even if arguments against the necessity for language-like thoughts (which are not necessarily tied to language, but merely resemble it in important aspects) in emotions can be rebutted, skeptics still won't be able to argue against the presence of emotions in birds.

Language-like thoughts

The Language of Thought Hypothesis (LOTH) holds that thinking occurs within a mental language, "i.e., in a symbolic system physically realized in the brain of the relevant organisms" (Aydede, 2010). For (1) to work, of course, not all thought needs to be language like. But the language of thought hypothesis outlines a set of properties of language-like thought—systematicity, compositionality, intentionality and propositionality-- which will help form the criteria to see whether or not birds have it. Let's go through these properties now, saving propositionality for the next chapter. The first three are the least significant and will therefore only be given a very short discussion.

Systematicity and compositionality: a very brief discussion

What is productivity? As Aydede (2010) writes it is the reason why "there are in principle infinitely many thoughts that we are capable of entertaining," which accounts for our ability to process a feasibly infinitely large number of sentences. While this might not be the

case as a matter of actual fact, it works extremely well as an idealized explanatory model of human language (see: Chomsky, 1972), and has been extended to the explanation of thought.

Systematicity as a requirement would hold that a subject who can entertain the thought “ArB”, with “r” denoting a kind of relationship, should also be able to entertain the thought “BrA”. Evidence for this systematic interrelatedness include our ability to make inferences and the empirical fact that the ability to produce certain sentences is correlated with the ability to produce other ones (Fodor and Pylyshyn, 1988). For example, the ability to say a sentence like, “Joe loves Bob” is empirically correlated with the ability to say “Bob loves Joe” (Aydede, 2010). Moreover, if one can deduce “A” from “A^B”, one can also (we know empirically) deduce “C” from “A&B&C” (Aydede, 2010). That all thought seems to follow this trend is taken to be an argument for the hypothesis that thought is language-like, including the kinds of thoughts associated with emotions.

Thought could not be systematic if it was not compositional (if “ArB” was a totally unique thought not composed of any other kinds of parts, then it would have no relation to the thought “BrA”, and if this concept is hard to grasp, it’s just because the terms “ArB” and “BrA” are themselves compositional and so difficult to use to denote non-compositional thoughts). Likewise, thoughts would not be compositional if they were not systematic, since these components relate to each other *qua* components only through a system through which they gain their compositional role. Furthermore, if “A&B&C” were not compositional, one could not derive “C” from it. In this sense, systematicity and compositionality always go hand-in-hand.

So far, and although much of evidence for the LOTH is based on the study of human language¹¹, the systematicity and compositionality properties of LOT can also be applied to animals. This is largely because the LOTH has the rather weighty task of accounting for even perceptual states as existing within a LOT. In making the LOTH stretch to such ‘lower’ systems in humans, Fodor and Pylyshyn (1988) recognize that the same compositionality and productivity can and must be (for the LOTH theorist) be applied to the mental states of animals. As they write (with “R” standing for the relationship something stands in relation to something else),

¹¹ With the straightforward proviso that the capacity to formulate a sentence correlates to a particular mental state.

It is not...plausible that only the minds of verbal organisms are systematic. Think what it would mean for this to be the case. It would have to be quite usual to find, for example, animals capable of representing the state of affairs aRb, but incapable of representing the state of affairs bRa... (So that, though you could teach the creature to choose the picture with the square larger than the triangle, you couldn't for the life of you teach it to choose the picture with the triangle larger than the square.) (Fodor and Pylyshyn, 1988: 27)

This is in part because, with few notable exceptions, stimuli that are structurally similar are expected to elicit representations that are 'correspondingly similar'. They conclude (1988: 28) that, "That infraverbal¹² cognition is pretty generally systematic seems, in short, to be about as secure as any empirical premise in this area can be." With such a systematicity, moreover, comes compositionality since they are two aspects of the same phenomenon.¹³

In this case, then, we need not worry (for our purposes) whether or not systematicity and compositionality are required for emotional cognition since they seem, for LOT theorists like Fodor, to be present in most nonverbal animals anyway (leaving aside the issue of the ostensive verbal capacities in certain parrots and corvids). Before moving on, in the next chapter, to propositionality, we should still take a more detailed look at intentionality.

Intentionality

As Jacob (2014) writes, "Intentionality is the power of minds to be about, to represent, or to stand for, things, properties and states of affairs." Intentionality, as I assumed in chapter 2, is a requirement for emotions and one of the primary things that distinguishes them from feelings. Recall that this is not necessarily true for all theorists of emotions, however. Prinz, for whom emotions are perceptions of bodily states, could possibly evade the intentionality requirement, given the current chasm between intentionalist theories of perception and their alternatives (see: Crane and French, 2015). But since we are focused on cognitivist theories of emotion, it will be safest to assume that intentionality is a requirement for emotions. As noted before, the difference between anger and simple rage can be thought of as the difference between rage with an intentional object (anger) and without one (simple rage). So the question now becomes whether birds are capable of (a) intentional mental states and (b) the right ones. The kinds of mental states that are traditionally thought of as intentional include beliefs,

¹² Literally meaning "below verbal", one can also think of this term as simply meaning "non-verbal" if one does not wish to think of verbal cognition as somehow "higher" than non-verbal cognition.

¹³ Though I don't have space to treat the topic here, productivity is likewise seen by Fodor and Pylyshyn (1988) as a direct consequence of compositionality and systematicity and as an idealized model of thought at any rate.

desires, perceptions, imaginings, and memories. Emotions, whether perceptions of bodily states or involving such cognitive states as beliefs and desires, are most likely intentional as well. Sensory experiences and moods might not be intentional. Therefore, to establish whether birds have intentional states might be nothing more than to establish whether they have beliefs and desires. However, we also want to establish that they have beliefs and desires that are relevant to emotions. The precise cognitive states for any given emotion is still a matter of huge controversy in the philosophy of emotions. Thus, given my limited space, it should suffice here that I can demonstrate that birds have the right kinds of cognitive states relevant to emotions. These are generally taken to be judgments (or evaluations), beliefs, and desires, with specific judgments, beliefs, and desires characterizing different emotions. The plausibility of attributing propositional thoughts and attitudes such as judgments, beliefs, and desires to animals is shown in the next chapter. For now, let's simply look at their mental states and establish whether these mental states can be regarded as representational (i.e. about something and hence genuinely intentional). This will, I think, be important for getting my argument in the next chapter off the ground, since it will rely on the presence of representational states that propositional attributions can 'track' (more on this later).

It seems obvious, given how well birds navigate the world—not running into objects in their paths, finding their way home after a long migratory flight, avoiding danger, etc.—that they have some kind of mental representations of things in the world informed by sensory experience and guiding their behavior. But how is it that their thoughts and mental events get to be about these things? This is to say, why is it not just the case that when a bird sees a tree to land on and flies towards it, that the tree has simply triggered a 'landing sequence' in the bird as a kind of cognitive algorithm without any intentionality? What makes the bird's thoughts mean anything rather than simply being events triggered by sensory experience and generating a behavioral output (or is this input-output sequence sufficient for meaning?)

To answer this, let's turn to theories of mental content. Theories of intentionality don't always tell us how thoughts come to be intentional, but theories of mental content do. From Dretske and Fodor onwards, theories of content and intentionality are usually taken together. While I'm aware that theories of intentionality don't reduce to theories of content, the finer distinctions between them are not relevant to my purposes. Mental content is the most crucial aspect of intentionality here. Thoughts are intentional by virtue of (how they get) their content,

so theories of mental content will tell us how it is that thoughts can become intentional. Mental content is what is perceived, thought, believed, desired, hoped for, hated, loved, etc. That is, when I believe something, that something is the content of my belief. When I perceive something, that something is the content of my perception.

I'll be remaining agnostic about which theory of mental content is correct and show a few of the most popular theories of mental content support intentional states in birds.¹⁴ These theories can overlap and intersect. I won't have space to go with great depth into any particular theory, but will at least establish that *prima facie*, these theories can for the most part accommodate birds quite easily and that the burden of proof should be on those who wish to assert otherwise.

Let's start with the causal theory of mental content. This theory, in its simplest form, would hold that for a thought about a tree to be about a tree is for that thought to be caused by a tree. Likewise, my perception of a tree is about a tree (and is not just a tree-shaped image in my head) because it was caused by a tree (Aizawa and Adams, 2017). Under so simple a conception of this theory, birds, being in the causal nexus of the world, could quite easily have thoughts *about* and perceptions *of* things in the world. For Dretske (2005), a signal perceived by an organism that carries probabilistic information about the world allows for a naturalized account of the intentional connection between perceptual states and the world. Roughly, a system can represent things when it has the capacity of carrying and providing information about the properties of a certain domain of objects, a capacity that developed throughout the history of evolution (Dretske, 1997: 1-3). That this capacity would be present in birds is clear from phylogenetics and confirmed by a myriad of empirical evidence (e.g. Smith, 1963; Jarvis et al, 2005).

Let's now take a look at the teleological theory (which usually has some functionalist aspects). As Byrne (2018) writes, "The basic idea is to explain the intentionality of mental states in terms of their biological functions, which might in turn be given a reductive account

¹⁴ I unfortunately don't have space to address every theory of mental content. A few of the issues I don't address have space to address here include interpretivism about mental content, non-conceptual content, internalism vs. externalism about mental content, and non-conceptual content. I believe, in short, that interpretivism is generally friendly to the capacities of animals to have mental content, and that attempts to constrain interpretivist accounts according to, for example, capacities for propositional attitudes can be addressed by my considerations on attributing propositional attitudes to birds. Theories of non-conceptual content is particularly friendly to animals capacity for the possession of content, and so if these theories turn out to be right, so much the better for me.

in terms of evolutionary history.” Dennett (1998: 359)¹⁵ expressed this view, as mentioned in a previous chapter, when describing how we would make use of his ‘intentional stance’, writing, “All attributions of content are founded on an appreciation of the *functional roles* of the items in question in the biological economy of the organism.” This would quite easily extend the capacity for mental content across a wide range of organisms with the cognitive capacities for cognitive or mental states that play functional roles in mediating the organism’s relationship with itself and its environment. A chicken could be attributed a mental representation of (what is for us) a worm by our giving an evolutionary account of the role this worm-representation played in the seeking-food-and-eating behavior of the chicken. Such a representation would be about a ‘worm’ because of the evolutionary function the ‘worm’ representation plays. Teleological theories like this are generally quite zoologically liberal (see: Neander, 2012; Levin, 2013).

Let’s now move on to a functionalist conception of intentionality. As Block (1990: 138) writes, mirroring other functionalists like Fodor and Pylyshyn (1988), there is “an internal system of representation from whose meanings our intentional contents derive”. This might be seen as a narrow rather than broad conception of intentional content, focused on how intentional content arises in regards to functional states relation to other states rather than to the external world. Most functionalist accounts of content focus on propositional content, holding that, for example, to hold a belief is to, “to be in a state that has causal and counterfactual relations to other beliefs and desires that mirror certain inferential, evidential, and practical (action-directed) relations among propositions with those formal structures” (Levin, 2013). This usually requires some language of thought, but as such a language is often attributed by proponents of this account of content to animals as well as humans. Fodor and Pylyshyn (1988), for example, argue that it is very unlikely or plausible that the properties of a language of thought only exist in verbal organisms’ minds. This is largely because the LOTH has the rather weighty task of accounting for even perceptual states as existing within a LOT. In making the LOTH stretch to such ‘lower’ systems in humans, the properties of LOT become easily applied to the mental states of animals.

In Fodor’s theory, content is possessed (or which one is sensitive to) if and only if one possesses sensitivity to “any permissible, formal permutation” of the represented information

¹⁵ 359. Cited in Mölder (2010: 79).

(Tetzlaff and Rey, 2009: 73). This means, for example, that I am sensitive to some perception whose content is the equivalent of “a red square next to an orange circle” in a LOT, I should also be sensitive to formal permutations such as an “orange square next to a red circle”. This is another formulation of the systematicity requirement and one that birds and even more cognitively simple animals are much more likely to meet than not. Functionalism has an additional advantage for birds since one of the purported benefits of functionalism as a theory of mind, for its adherents, is that it so easily allows for a physically heterogeneous set of creatures (and Martians) to possess mental states (Fodor, 1994).

Now as for the question of whether these theories of mental content allow birds to have the right kind of intentional states needed for emotions, this may depend upon the role of propositions in emotions. Many functionalists, for example, take mental content to be defined in regards to a proposition that a certain mental state represents. Indeed, discussions of mental content assign the term meaning ranging “from the abstract proposition to the way of experiencing the world” (Mölder, 2010: 14). Thus, it will be wise, in arguing for the ascription of emotions to birds, to safeguard the legitimacy of ascribing propositional content to them. This will be the subject of the next chapter.

Chapter 5: Giving Birds Props—On Attributing Propositional Attitudes, Concepts, and Evaluations to Birds

So far we've been discussing the properties of language-like thought and whether or not birds can have language like thoughts. We've been doing so because if language-like thought is necessary for emotions, as a few philosophers think (e.g. Gordon, 1990), then we should take a close look at whether birds can have (I alternatively could have argued against such a theory of emotions, but I think my current line of argument leaves me in an even stronger position). This is because if one wishes to secure the argument for bird emotions on a firm foundation, one should try to do so in a way where it would work with the widest possible range of theories of emotions. One property of language-like thought—propositionality—is especially complex, and ties strongly into what has been called the “Davidson-Stich” thesis against animal thought. Davidson and Stich's arguments should not be taken as a defense of the LOTH and has its own set of concerns. However, looking at it will both let us address the issue of propositionally and address positional attitudes and judgments, which are the most important aspect of cognitivist theories of emotion (as well as the most common arguments against animal thought). I will also, for reasons that will become clear, deal more directly with the notion of concepts and attributing the possession of them to birds.

To begin, I'll outline roughly what propositions and propositional attitudes are. On a trivial level, we might say that propositions are what is included in that-clauses contained in reports or ascriptions of attitudes¹⁶. If my propositional attitude is a belief, then we might say, “I believe that X”, wherein the proposition is “X” and the attitude is “I believe that”. So if I say, “I believe that snow is white” then I have a certain propositional attitude. The proposition “snow is white” is what my belief is about, and the truth or falsity of that proposition is what will make my belief true or false. However, it is not quite that simple. Propositions are not the same things as the sentences we use to refer to them. As an English speaker, I say that “snow is white”. A Chinese speaker says “雪是白色的”. If these two sentences are correct translations of each other, they both express the same proposition. Similarly, I might have a thought that snow is white which doesn't take on the form of an English sentence, but which

¹⁶ Note from advisors.

expresses the same proposition. The typical propositional attitudes are taken to be beliefs and desires. I can believe that I picked the right lottery numbers, for example, or desire that I picked them. You can also fear that you picked the wrong numbers, but this emotion is typically broken down to involve simpler attitudes, in cognitivist theories of emotion, such as the belief that you might have picked the wrong numbers and the desire that this not be the case.

The Davidson-Stitch Hypothesis Against Propositional Attitudes in Animals

Let's start with the so-called Davidson-Stitch argument(s) against propositional attitudes in animals. The notion that animals cannot have propositional attitudes is not uncommon and has been seen by some as an argument against certain cognitivist theories of emotion (de Sousa, 2013). On the one hand, the 'Davidson-Stitch' hypothesis is a slight misnomer, since Davidson and Stich argue against animal thought in slightly different ways. However, their arguments overlap so much that it's perhaps best to consider them together, rather than one at a time.

First, consider the following case, which has become the typical case in discussions concerning the Davidson-Stitch argument (although it is about a dog, all of the arguments about it carry over seamlessly to birds-- say, the case of an owl chasing a mouse under a rock):

Suppose our dog is chasing the neighbor's cat. The latter runs full tilt toward the oak tree, but suddenly swerves at the last moment and disappears up a nearby maple. The dog doesn't see this maneuver and on arriving at the oak tree he rears up on his hind feet, paws at the trunk as if trying to scale it, and barks excitedly into the branches above. We who observe this whole episode from a window say, 'He thinks that the cat went up that oak tree'. (Malcolm, 2013).¹⁷

Davidson (1982) argues that it would be incorrect to say that the dog believes that the cat went up the oak tree. This is most importantly because for the dog to have such a belief, the dog would have to have a "world of further beliefs to give" that belief "content and identity" (1982: 321).

What does it mean to have access to a "world of further beliefs"? This is not a matter of believing all that a single belief entails. For example, it is quite possible to believe that the president has small hands without believing that the person who lost the popular vote has

¹⁷ Cited in Davidson (1982: 319).

small hands. Similarly, the dog does not need to have access to the belief “The cat ran up the oldest thing in the yard” even if the oak tree is the oldest thing in the yard. However, Davidson says, for us to say that the dog believes that the cat ran up the oak tree, we should at least be able to say that the dog believes of the tree that it is a tree. As he continues,

This would seem impossible unless we suppose the dog has many general beliefs about trees: that they are growing things, that they need soil and water, that they have leaves or needles, that they burn. There is no fixed list of things someone with the concept of a tree must believe, but without many general beliefs, there would be no reason to identify a belief as a belief about a tree, much less an oak tree.

(Davidson, 1982: 319)

Stich (1979) lays out his initial argument against animal beliefs on similar grounds¹⁸. For him, saying that (to use our example) the dog believes the cat is in the oak tree attributes concepts to the dog that it cannot have. To have a concept of an oak tree, for example, would be to know certain things about the oak tree that the dog does not know. Moreover, the dog cannot distinguish an oak tree from a fake oak tree, nor ever understand such a distinction. The same goes for its beliefs about cats, etc. Very well then, perhaps animals cannot have beliefs after all, and we’re barking up the wrong tree by trying to attribute such propositional attitudes to birds.

However, we lose more than a little if we concede this, in terms of explanatory power. If we say that the dog has no such belief as to the cat going up the oak tree, how do we explain her behavior of standing at the bottom of the oak tree and barking up it (instead of, say, the maple tree that the cat really ran up)? The reasons we have for explaining the dog’s behavior in terms of beliefs and desires are at least very similar to the reasons we have for understanding a person’s behavior in such a way, Stich (1979) notes. He adds that it would be quite remarkable if some theory could be developed to explain the behavior of (“higher”) animals in such a way that the theory could not also apply to people. Finally, as Dennett (2008) imagines, if there were a group of Martians with a Laplacian knowledge of basic natural laws that allowed them to predict all earthling’s behavior without having to appeal to folk-psychological notions like propositional attitudes, how would they nevertheless be able to account for *our* ability to predict each other’s behavior in these terms? So we might not want

¹⁸ Stich (1979) doesn’t argue directly against animal beliefs. Rather, he lays out an argument for animal beliefs and then an argument against, concluding that in a way they do have beliefs and in a way they don’t. The argument for animal beliefs, including inferential beliefs, is the explanatory power we get from explaining their behavior in such terms (as with humans). Our interest here will be in his argument against.

to throw out propositional attitudes for animals, for the same reason we wouldn't want to do so for people. How, then, should we respond to Stich and Davidson's problem?

One could say that the dog is thinking something more along the lines of "Go get it, go get it!" or "It went there!" On the face of things, these sorts of thoughts don't encounter the same problems that the oak-tree belief does; they don't seem to require the same 'world of beliefs'. But what is it that the dog thinks it has to get? "The strategy of appealing only to demonstratives" such as 'it' and 'there' "to explain the content" of the dog's intentional states, Rowlands (2012: 87) writes, assumes that we can (or should) explain the dog's relationship with its environment in an unmediated, causal manner. This, in turn, may assume that the dog does not represent its environment (or at least that we shouldn't treat it as if it does).¹⁹ This leaves us with the same puzzle of explaining the dog's behavior, since "bare causal contact with the world explains nothing" (Rowlands, 2012: 87-88). The same problems seem to emerge with only attributing a *de re* belief to the dog that the cat ran up the tree.²⁰ For example, we may say something such as "the dog believes of the tree that the cat went up it" without assuming that this is how the content appears to the dog. However, as Davidson (1982: 320) notes, this still assumes that "the *de re* description picks out an object the believer could somehow pick out." I'm not sure that Davidson is right about this. I might, for example, say of Oedipus that he believes of his mother that she is his wife. However, I have no expectation that he should be able to pick out his mother, since to his knowledge he has never met her and has no idea what she looks like. Oedipus is at least different in that he *could* with additional information pick out his mother (as he eventually does). However, I could make this propositional ascription to Oedipus even if he had no concept of a mother, no idea of what a mother even was. However, this in itself is a problem with *de re* assignments of belief; they

¹⁹ This is at least Rowland's claim. It may be objected that it's totally possible for the dog to have an internal map and somehow refer to it in terms of demonstratives. However, the presence of such an 'internal' map that includes that cat would presumably include some representation of the cat, and in this case we're assuming that the dog's mental content would come from causal contact with the world rather than an internal representation.

²⁰ *De re* means "regarding what is said" whereas *de dicto* means "regarding the thing" ("De dicto"; also see: McKay, 2010). As Rowlands describes the difference (2012: 94), a,

de dicto ascription to an individual is made by way of an embedded that-clause—Jones believes that *p*—and such attributions are crucially dependent on the way in which the individual represents the object of the belief... *De re* ascriptions of belief... are not sensitive to the way in which the object of the belief is represented. For example, Oedipus believes that Jocasta is his wife. This is a *de dicto* ascription of a belief to Oedipus. He certainly does not believe that his mother is his wife, at least not initially—that discovery came as a bit of a shock.

don't account for the *intensional* quality of intentional states, specifically "the failure of substitution of co-referential terms in intentional contexts" (Rowlands, 2012: 96).

Armstrong (1974) thinks that *de re* attributions of belief to animals are a kind of legitimate placeholder until we can discover the *de dicto* beliefs of the dog. As he writes (Stich, 1979: 22), "Our assertion about the dog makes a claim of the following sort. The dog has a belief of the form $R(a,b)$. 'a' is the canine individual concept which picks out the very same individual as our individual concept that we express by the words" that we use in our *de re* attribution of belief to the dog. For Stich, the largest problem with this is that we could never possibly know what the canine's individual *de dicto* concept really is. As Stich (1979: 20) writes, "We are comfortable in attributing to a subject a belief with a specific content only if we can assume the subject to have a broad network of related beliefs that is largely isomorphic with our own." This is quite similar to Davidson's 'world of beliefs', except that the beliefs for Stich have to be shared with the attributer. Without such a network, for Stich, we could attribute beliefs to animals but not beliefs with any content, since we would have no idea what kind of conceptual content these beliefs would have. Moreover, no amount of scientific investigation could tell us what kinds of conceptual content these beliefs would have, since they could only specify the underlying mechanisms of belief-related cognition in the animal. He thinks that we could only specify functional or psychological mechanisms in the animal, but never the particular conception of belief that has to do with propositional content. He claims that for one thing, the *de dicto* belief that Armstrong (1974) imagines to be coextensive with our *de re* propositional ascription could never be about the scientifically discovered properties underlying this belief-forming process²¹. Who, of course, would have ever supposed that they would? But then by what means are we to fill in the content of the belief?

²¹ This is an extremely odd objection on Stich's (1979: 27) part but he really does make it, saying, for example, that,

...for that is a belief we could attribute to no subject who did not have a substantial knowledge of geometry, organic chemistry, etc. So it looks like Armstrong's way out is a dead end. 'Generations of work by animal psychologists' may uncover a great deal about animal concepts. But it will be of no help in specifying the content of animal beliefs.

The Tracking Reply to Davidson-Stich

Rowlands (2012: 104) doesn't think that the project would be quite so hopeless. He speaks about a "tracking relationship" between a *de re* ascription p and the *de dicto* belief it tracks, p^* :

Proposition p tracks proposition p^* iff the truth of p guarantees the truth of p^* in virtue of the fact that there is a reliable asymmetric connection between the concepts expressed by the term occupying the subject position in p and the concept expressed by the term occupying the subject position in p^* .

For example, p^* might be that there is a 'chaseable thing' in the 'tall thing', which some p that there is a cat in the tree would track. The reliable asymmetry exists because there is always, allegedly, a chaseable thing if there's a cat, but not always a cat if there's a chaseable thing.

This might sound very similar to Armstrong's (1974) criteria of the coextensiveness of p and p^* . Armstrong, however, supposes that p and p^* have the same denotation. For Armstrong, $p \equiv p^*$, whereas for Rowlands, $p \supset p^*$. But p^* might be true even while p is false. This is, presumably, because the concept of the dog is less fine grained than that of the person. For example, if the dog thinks of the cat only as a chaseable thing (by virtue of not being able to tell chaseable things apart), then p^* involves the concept "chaseable thing", whereas p involves the concept cat. Since more things are chaseable things than they are cats, and since all cats are chaseable things, $p \supset p^*$. But are all cats chaseable things? What about a cat with broken legs? Well, in such a case, we might say that there is a statistically frequent asymmetrical relationship between "chaseable thing" and "cat" (since in the vast majority of cases, cats are chaseable things). It's worth asking here why "chaseable thing" is linked with a cat rather than with a chaseable thing. "Chaseable thing" is, of course, just a stand in for whatever concept the dog really has, which has yet to be discovered. Still, I think that my answer is better than to chalk the "cat with broken legs" problem to a mere problem with our artifice in representing the dog's representation, and to then deny a tracking relationship in such a case. Such exceptions in the asymmetries might be found for most p and p^* pairings, whatever they may be.

Still, if there is a frequent asymmetry of concepts in p^* and p (to the effect that more often than not, if p is the case than p^* is the case), this seems like a firm enough tracking relationship, even if it's not the case that $p \supset p^*$. Thus, I believe, $p \supset p^*$ is not necessary for " p tracks p^* ". But a frequent asymmetrical relationship between the concept involved in p and

one involved in p^* will entail that the truth of p usually guarantees the truth of p^* . This, I suggest, should entail the tracking relationship. I don't think that this lack of logical entailment between p and p^* should be such a big problem. We encounter the same issue in ascribing propositional attitudes (in English) to non-English speakers. I may say of a Chinese person, "He wants a girlfriend", even though his concept, "女朋友" applies to some cases in which my concept of "girlfriend" does not, and my concept of "girlfriend" applies to some cases where "女朋友" does not, so long as a case of a girlfriend is usually a case of a 女朋友 (this case is admittedly not asymmetrical but it gets the point across).

There are two aspects to Rowlands' response that make it particularly good. For one thing, it answers Davidson and Stich's requirement for a 'world of beliefs' in accounting for the necessity that animals' beliefs be context-bound—that is, rooted in concepts bound in a context of other concepts. It does this by allowing the dog's concepts to be rooted in a plausible world of concepts and beliefs of its own, without forcing it to have to have our particular world of beliefs. Davidson and Stich might object that giving an account of context-bound concepts simply begs the question against their 'world of belief' objections by (a) assuming such a thing to be possible (Davidson) or (b) ignoring the requirement that these concepts must exist in a network that overlaps with ours enough for it to be comprehensible to us in making our propositional attributions (Stich). (a) can be answered by simply turning the tables on Davidson. To simply assume that a dog cannot have a concept *like* that of a tree (something big and still with branches and leafs) because it can't have a concept of something like branches and leafs (smaller things that fall from the tree) is simply to beg the question (Schwitzgebel, 1997). As for (b), this can be taken care of by Rowlands' implicit supplement of a different kind of empirical method of investigating animal beliefs than Armstrong supplies. Rowlands (2012: 99) gives us some clear criteria for conceptual possession:

- “(1) O systematically discriminates some X's from some non-X's.
- (2) O is capable of detecting some of its own discrimination errors between X's and non-X's.
- (3) O is capable of learning to better discriminate X's from non-X's as a result of capacity (2).”

Here, contra Stich's objection to Armstrong, we are not attributing to animals mere functions or psychological processes (which do not tell us about the animal's propositional beliefs and

which obviously are not the objects of such beliefs) but conceptual content itself. This will save us from having to question Stich's presupposition that beliefs require concepts by way of arguing for nonconceptual content, as Bermúdez (2003) does (although this option is still available to us).

To strengthen Rowlands' point further, consider the idea that what we're doing in the case of animals in terms of propositional attribution is not so different from what we do in the case of people. For example, if my child is trying to eat my prescription pills, I might say, "She thinks the pills are candy," or, "She thinks the pills will be tasty," even if the child has no concept of pills. The child may have a concept of candy, or of tastiness, but she does not represent the pills as pills. My ascription and her concept are also asymmetrical in exactly the right kind of way. Recently, some philosophers have been arguing that people don't share the exact same concepts as other people at all (even members of the same linguistic community)²².

Davidson's Second Argument

Before we finally turn to the topic of judgments, there's one more objection from Davidson that should be addressed. Given my limited space and the relative weakness of the argument, I will only treat it very briefly. Davidson argues that in order to have a belief, one must have a concept of belief, which in turn requires language. He means that one must have beliefs about (some of one's) beliefs and must have beliefs about those beliefs *as* beliefs (Schwitzgebel, 1997: 36). Davidson never makes it entirely clear in his article "Rational Animals" why exactly belief about belief is required for having a belief. If one looks in Davidson's "Thought and Talk" (2001), where this second requirement for belief first emerged, one will encounter the same problem as before in finding no further justification for his requirement. Schwitzgebel (1997: 40) also recognized this, writing that Davidson's only defense of the premise "amounts merely to a restatement of [that premise] not in terms of the

²² Crane (2017) asserts that we should think of propositions as theoretical constructs and not anything that occurs 'in the head'. That is, instead of thinking of propositions as a fact that needs to be explained, we should think of them as models that are intended to explain certain phenomenon. The point of a model is to explain the behavior of a complex system by looking at a simpler system and comparing them. This strengthens Rowlands' point in suggesting that even ascription of propositional attitudes to people are only true in virtue of having a certain tracking relationship with whatever representational states they really possess. The criterion here for the accurate attribution of a propositional attitude would also be that of a tracking relationship between the idealized *p* and the human individual's actual *p**.

concept of belief in general, but rather what Davidson regards as a requirement for having that concept—the capacity to recognize that one’s beliefs might be false... This defense, in other words, is no defense at all.” Davidson’s meta-belief requirement, and in turn his linguistic requirement, seem established by little else than fiat. Moreover, it flies in the face of certain common sense ideas, such as that four year old children can have beliefs (see: Schwitzgebel, 1997). Thus only his first requirement should be of much concern to us.

Evaluative Judgments

We can now finally turn to the issue of evaluative judgments, which for some philosophers of emotion (e.g. Nussbaum, 2003) is the kind of cognition needed for emotions. We might conceive of them as kinds of thoughts (or collections and patterns of thoughts).

Let’s take the case of a sparrow who is afraid of a cat. The sparrow might simply be thinking “There is a cat there”, “the cat might kill me”, or desiring “the cat will not kill me”.

Alternatively, the sparrow might be thinking, “there is a cat there” and have some sort of evaluative thought about the cat (perhaps against some conceptual field of concern, such as the dangerousness of the cat). This evaluation might be a kind of seeing-as. The sparrow’s fear of the cat, for example, might be a case of the sparrow seeing the cat as dangerous. Rowlands (2012) suggests using the same technique we use for ascribing propositional attitudes to animals. When we ascribe to a dog the belief that the cat ran up the oak tree, it does not matter that this is a proposition with concepts that the dog cannot entertain, because the proposition tracks the dog’s own *de dicto* representational state. Similarly, it is not important that the sparrow should be able to entertain the exact judgment, “the cat is dangerous”, so long as this ascribed judgment tracks the representational state of the bird and its own conceptual set. The job of this judgment, additionally, may simply be to make sense of the emotion, rather than to constitute it. As Rowlands (2012: 120) writes,

The truth of this proposition, as we might say, makes sense of the emotion. We need not think of emotions as reducible to evaluations. Nor, crucially, does the possession of a given emotion require the entertaining of the evaluative proposition. Rather, for any emotion, there is a certain evaluative proposition that must be true in order for the emotion to not be misguided.

The same, Rowlands thinks, holds true even for norm-laden emotions such as anger (involving, potentially, the evaluation “I have been wronged”).

But it seems now that this is not the same basic technique as before, since in this case the judgment in question is there to make sense of the emotion rather than to track its content. There are, of course, additional propositional attitudes in the background (the belief “there is a cat here”) that are tracking the actual conceptual content of the bird. The emotion, in turn, doesn’t track the bird’s conceptual content, but tracks a proposition itself, since the truth of the proposition is what guarantees the appropriateness (non-misguidedness) of the emotion. For example, if it is the case that the cat is dangerous or that the bird has been wronged, the bird can be said to have the emotion of fear or anger *correctly*. The key point here is that Rowlands argues how the possessor of an emotion does not need to be able to entertain an evaluative proposition in order to be ascribed such a judgment.

Would this stand up to Davidson’s test, however? Recall that Davidson is concerned not just with what can be said about animals *de re*, but about what representational content they presumably possess. Rowlands seems to shift the tracking relationship between an emotion and a proposition rather than between a proposition and representational content. Humans presumably *are* able to possess the representational states relevant to evaluative judgments. Here I would ask the reader to consider what it exactly means to represent something as dangerous (we will save the case of anger, which is more complex, for the next chapter, when we discuss whether birds have human-like emotions or their own sort). To represent something as dangerous seems to entail an awareness of the dangerous features of something and the effects that it might have. This is the sort of associative knowledge that Stich (1979) seems ready to grant to animals. Let’s take the case of a bird that is administered an electrical shock when it presses a certain lever. It comes to fear that lever. It does so because it has come to represent the lever as being connected to the pain it feels when shocked. This seems like the sort of representational content that the proposition “this lever is dangerous” might track. Rowlands thinks that the fear itself tracks this proposition, which renders the fear appropriate or misguided. However, Rowlands is arguing for the attribution of very complex emotions to animals, much more complex than just fear. We need not go this far. We might simply say that the emotion of fear, in its correctness or misguidedness, tracks the truth of the bird’s own representation. The proposition that we ascribe the bird the ability to

entertain (“this lever is dangerous”) when we say that the bird makes an evaluation tracks the bird’s representational content. The emotion’s validity or misguidedness, meanwhile, tracks the truth of that representational content. In sum, then, I think Rowlands is at least potentially wrong about the relationship between evaluations and emotions; they may indeed constitute emotions. This entails that we would be better off using Rowlands’ original tracking relationship between evaluations and emotions, the one he used to attribute propositional content. This in turn will make it more difficult to ascribe certain kinds of emotions to birds, i.e. ones that are too conceptually complex for the birds to possess. It is this topic to which we will now turn.

Chapter 6: Emotions or Schmemotions?

In this final chapter, I'm going to consider the issue of whether birds have emotions or "schmemotions". By emotions I mean things like surprise, sadness, anger, and fear; the kinds of things that (at least) we humans experience. By "schmemotions" I refer to emotions that are like human emotions, but unique to birds. For example, if a bird experiences something very much like anger, but which is not quite the same as what we call anger, then we could say the bird is experiencing "schmanger".

I won't be able to answer this question definitively, but I can give some hints towards an answer and discuss what considerations will come into play when making this determination. I will conclude that this question needs to be answered on a case by case basis, and that the answer will sometimes depend on the particular theory of emotion you subscribe to. It seems likely that birds generally have both emotions and schmemotions, depending on the case.

The first reason that birds might only have schmemotions is that they probably have different concepts and representations than people. But should this matter? What's significant isn't the thing the emotion is about, but whether the human and bird emotions are both tokens of the same emotion type. For example, let's say that my neighbor Stacy comes into my apartment and hits my bird's cage because he's making too much noise. The bird and I both get angry. I might be angry at my neighbor Stacy, whereas the bird is angry at some vaguer object. In both these token cases, however, the same type is being embodied. Even if the bird has a very different way of perceiving and representing Stacy, anger is possible so long as the underlying conditions for anger are met. My roommate's concept or representation of Stacy might be different from mine, too, but we obviously can still both be angry at her. There seems to good reason to think that once the representation of Stacy gets too weird, anger is no longer possible.

So then, what matters is whether the conditions for anger are met. This is where different theories of emotion must come into play. If having anger is just to perceive a bodily state associated with anger (*a la* Prinz, 2005), then birds probably have anger (this would also apply to any other emotion whose physiological components humans and birds largely share). It might be objected that birds have bodies too different from ours to be sure. I'm used to

feeling an adrenaline surge and a quickened heart in my human body. But the isolated features of my bodily response constituting anger here are the same features we can isolate in an angry bird. How do we know the bird is angry? We can appeal to behavioral similarities—my angry behavior (and self-reports of anger) occur in the kind of bodily state that a bird's angry behavior does. Finally, if birds and people both evolved to have an anger response for similar reasons, what theoretical advantage is gained in calling the bird's response by some other name? It seems to needlessly complicate things.

Very well, but what if anger involves a propositional attitude such as a belief? Propositional attitudes in this kind of theory are necessary for our emotions generally. But is some particular propositional attitude *x* necessary for some emotion *y*? For example, in such a theory, the emotion of anger would involve the belief that one has been wronged (de Sousa, 2013). But can it instead involve a representation that the proposition "I have been wronged by *x*" tracks? For example, let's take the concept "wronged". The bird would have to have a concept ("schmonged") such that when it turns out to be true that the bird was wronged, it's also (usually) true that the bird was schmonged. How similar is "wronged" to "schmonged"? Recall Rowland's three criteria for conceptual possession. Let's say that the bird fails the 'wronged' test, and then we weaken the concept somewhat (to exclude, say, something like an abstractly normative component), and end up with 'schmonged'. We test the bird's possession of 'schmonged' and the bird passes the test. Here's the situation we would then be in: the bird is angry if anger can involve the concept 'schmonged' instead of wronged, and the bird is schmangry if anger cannot involve the concept 'schmonged' (while schmanger, of course, can).

This is, of course, an issue on which I don't have space to provide a final answer. However, it seems clear that if this kind of cognitive conception of emotions turns out to be true, then some emotions are more likely candidates than others. Fear involves the concept of danger, which seems a more likely concept for birds to possess than the concept of being wronged. Grief would depend upon whether one must simply have a concept of loss or a concept of irretrievable loss (in this case, the bird would only have schmief).

There's a final set of considerations we should take into account here. This has to do with the idea that emotions don't just involve propositional attitudes, but particular kinds of judgments or evaluations. For example, Nussbaum (2003) thinks that the kinds of evaluations

involved in emotions involve seeing a situation as urgent and important. Nussbaum thinks that this kind of “seeing-as” does not have to exist in a linguistically formulatable kind of way. Here, the same sorts of considerations seem to emerge as with the propositional cognitivist theories: if the particular cognitive capacities we have for evaluating a situation in such-and-such a way is necessary for some emotion *x*, and if birds don’t have this particular capacity but still exhibit the same kinds of behaviors and/or bodily reactions that we would when having emotion *x* (while having a different if related mode of seeing-as), then we could call that bird’s emotion *schmex* instead of *x*.

I’ll end with some more general considerations on the matter. I have not yet mentioned cultural relativists about emotions (those who claim that emotions like grief aren’t even universal among humans), who would most certainly say that birds’ emotions are *schmemotions* (as well as, perhaps, the emotions we attribute to people of very different cultures). So whether birds have emotions or *schmemotions* depends in part on whether these cultural relativists turn out to be right and which emotions they are relativists about.

The general advantage to conceiving of certain emotions, such as anger and fear, in a way that would allow birds to have them (as opposed to a spinoff emotion) is that, if particular emotions are natural kinds, this would allow us to tell a more parsimonious evolutionary story. Moreover, it would be theoretically simpler. However, we might have very good reasons to think that our emotions developed in such a way that while the underlying functions are similar as those of birds, they are still species unique. For one thing, even though birds can have the right kinds of thoughts for emotions, their thoughts are still probably quite different from ours. Moreover, while our legs and birds wings and flippers perform the same basic kind of function (locomotion), this shouldn’t make us want to consider our legs flippers or wings. It’s not clear whether a particular emotion like anger, if a natural kind, is more like a limb or more like a wing. If it’s more like a wing, then the parsimonious story could still be preserved by naming and accounting for the more basic ‘limb’ of which anger and *schmanger* are two variations. As noted before, this seems to be a matter that will vary on a case by case bases depending on, among other things, the basicness vs. conceptual complexity of the emotion. Fear seems more like an eye in the sense that even if birds and people have different kinds of eyes, they nonetheless both have eyes. Something like anger is more ambiguous and might turn out to be a variation on some more basic emotion that’s present in both birds and people.

It will take both conceptual analysis of emotions as well as more empirical research to discover whether birds have some of the same emotions as us or whether their emotions deserve their own names and conceptual categories.

Conclusion

I have in this thesis demonstrated that (at least some) birds can feel emotions. I've done this by first giving a methodological justification for why we should make such attributions in the first place as well as supplying behavioral and physiological evidence. I've also defended the idea that birds have the neurological and cognitive capacities for emotions, as well as the idea that we should make attributions of propositional attitudes and thoughts to them. I think that this should be of interest both to philosophers of emotion and quite possibly to ethicists. We should regard birds not just as reactive biological machines, but as creatures capable of thinking about the world. They don't simply feel, but feel certain ways *about* certain things. They represent the world and emotionally react to it. While it is not yet clear whether their emotions are the same as ours or unique to them, further research should shed light on this question.

Abstract

This thesis demonstrates that (at least some) birds can feel emotions. First, it gives a methodological justification for how one can make such attributions in the first place. Then supplies behavioral and physiological evidence for emotions such as fear, anger, and affection. It goes on to defend the idea that birds have the neurological and cognitive capacities for emotions. It next turns towards cognitive and mental considerations, including intentionality, mental content, language-like thought, and making attributions of propositional attitudes and evaluative judgments to birds. It concludes by considering whether birds have human-like emotions or bird-relative ‘schmemotions’.

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Appendix

Title in Estonian: **Lindude Emotsioonide Olemasolu Kaitseks**

Lihtlitsents lõputöö reprodutseerimiseks ja lõputöö üldsusele kättesaadavaks tegemiseks

Mina, Kyle York,
(autori nimi)

1. annan Tartu Ülikoolile tasuta loa (lihtlitsentsi) enda loodud teose

A Defence of the Existence of Emotions in Birds
(lõputöö pealkiri)

mille juhendaja on Francesco Orsi and Vivian Puusepp,
(juhendaja nimi)

- 1.1.reprodutseerimiseks säilitamise ja üldsusele kättesaadavaks tegemise eesmärgil, sealhulgas digitaalarhiivi DSpace-is lisamise eesmärgil kuni autoriõiguse kehtivuse tähtaja lõppemiseni;
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