



Chimpanzee normativity: evidence and objections

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Abstract

This paper considers the question of whether chimpanzees possess at least a primitive sense of normativity: i.e., some ability to internalize and enforce social norms—rules governing appropriate and inappropriate behaviour—within their social groups, and to make evaluations of others' behaviour in light of such norms. A number of scientists and philosophers have argued that such a sense of normativity does exist in chimpanzees and in several other non-human primate and mammalian species. However, the dominant view in the scientific and philosophical literature is that psychological capacities for social norms evolved uniquely in the human lineage, after our last common ancestor with chimpanzees and bonobos. After reviewing some of the existing evidence for normative capacity in chimpanzees, I defend the thesis of chimpanzee normativity against three key theoretical objections that have been presented in the literature, each of which have played a part in motivating the dominant sceptical position. I argue that, while we still have much to learn about the nature and extent of the normative capacities of other animals, there is strong *prima facie* evidence for social norms and normative evaluation in chimpanzees and the main theoretical objections to chimpanzee normativity are not at all compelling.

Keywords Animal cognition · Social norms · Moral psychology · Evolution of morality · Cultural evolution

Introduction

This paper considers the question of whether chimpanzees possess at least a primitive sense of normativity, by which I mean some ability to internalize and enforce *social norms*—rules governing appropriate and inappropriate behaviour—within their social groups, and to make evaluations of others' behaviour in light of such norms. A number of scientists and philosophers have argued that a sense of

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normativity does exist in chimpanzees and in several other non-human primate and mammalian species (e.g., Bekoff and Pierce 2009; Andrews 2009, 2013, 2020; Musschenga 2013; de Waal 2014; Burkart et al. 2018; Vincent et al. 2019; Monsó and Andrews, forthcoming). However, there remains in many circles considerable scepticism about the idea of there being *any* kind of normative reasoning in non-human animals, even our closest living relatives, the dominant view being that psychological capacities for social norms, normative evaluation and motivation evolved uniquely in the human lineage, after our last common ancestor with chimpanzees and bonobos (e.g., Kitcher 2011; Henrich 2015; Tomasello 2016; Schmidt and Rakoczy 2019).

My goal in this paper is to defend the thesis of chimpanzee¹ normativity (as I propose to call it) against three key objections that have been presented in the scientific and philosophical literature, each of which have played a part in motivating the current scepticism. After some preliminary clarifications about the notion of normativity that is at stake, I will briefly review the evidence for social norms and normative attitudes in chimpanzees. I will then describe and rebut each of the three objections. The first objection concerns whether chimpanzees can be said to have any understanding of the norms that supposedly describe their behaviour, with sceptics arguing that there is no evidence that they are able to conceptualize the contents of the relevant norms and thus that their behaviour is actually normatively motivated. The second objection is the widely held view that shared intentionality is a cognitive prerequisite for normativity and that skills and motivations for shared intentionality are absent in other apes. The third objection holds that the current lack of direct experimental evidence for third-party punishment in chimpanzees is a good reason to deny them normative capacities, given the apparent importance of third-party punishment for stabilizing and maintaining social norms in human communities and as an indicator of genuinely normative, as opposed to purely self-interested, motivation.

In response to the first two objections, I will present a model of chimpanzee norm psychology, which: (i). allows that chimpanzee mental representations of social norms can be *implicit*, yet still play a genuine causal role in their behaviour, such that it is normatively motivated; and (ii). doesn't require shared intentionality, so even *if* shared intentionality does turn out to be uniquely human (I'll highlight some reasons to be sceptical about the alleged evidence for this), that wouldn't preclude chimpanzees from being normative creatures. This model is inspired by accounts of human social norms and norm psychology that fall into what Kelly and Davis (2018) call the "cognitive-evolutionary" approach to norms (e.g., Boyd and Richerson 2005; Sripada and Stich 2006; Chudek and Henrich 2011; Stich 2014; Kelly and Davis 2018). Though advocates of this approach typically emphasize the uniqueness of human culture and normative psychology (e.g., Henrich 2015), I will argue that

¹ I focus on chimpanzees not because I think that they are the only non-human species likely to possess normative capacities. Such capacities are, in my view, probably quite widely shared in the animal kingdom. However, chimpanzees (and bonobos) are plausible candidates, given their evolutionary proximity to human beings. Chimpanzees are also the most intensely studied of all non-human animals when it comes to social cognition, so it is here that we find the most extensive existing evidence for normative capacity.

it provides useful resources for understanding what a non-human norm psychology might look like, and, in particular, how social norms might initially emerge and be socially transmitted in communities of non-human animals. In response to the third objection, I will point to some reasons to resist sceptical conclusions about third-party punishment in chimpanzees and reasons to be more optimistic about their abilities to maintain social norms in their communities. The overall message of the paper is that while we have much to learn about the nature and extent of the normative capacities of non-human animals, chimpanzee normativity is, contrary to its critics, both tenable and empirically plausible.

Normativity: some preliminary clarifications

The notion of normativity at stake in this paper, which is concerned with the ability to internalize and enforce social norms, needs to be carefully distinguished from another one that has been of primary interest to philosophers.

Much work in meta-ethics is concerned with what is sometimes referred to as *the problem of normativity*: the metaphysical problem of explaining from where genuinely normative reasons or obligations originate, and how and why it is that things like morality can exert normative force on us.² A key question in philosophical moral psychology is thus how it is that particular psychological states, such as beliefs, desires, and emotions—those states that play a role in practical reasoning and motivation—can gain what Rowlands (2012) calls “normative grip”: provide normative reasons for action. How one answers this question will depend on how one answers all sorts of metaphysical questions about the nature of normative/moral properties (if there are such things) and our relationship to them as normative/moral agents.

Philosophers like Korsgaard (2006) and Rowlands (2012) have considered whether this kind of normativity exists in non-human animals—in particular, whether some non-humans can be viewed as acting for moral reasons. Korsgaard thinks not, based on a Kantian constructivist account of (moral) normativity. The answer to the problem of normativity is a Kantian account of *autonomy*, according to which genuinely normative reasons for action derive from a particular type of reflective self-consciousness that, Korsgaard argues, is uniquely human. Rowlands, however, rejects Kantian notions of normativity in favour of an externalist consequentialist account. Rowlands is thus able to argue that some non-human emotional states—such as distress caused by the pain of others, which has been claimed to motivate altruistic helping behaviours in many social animals—constitute normative reasons for action, in so far as they can be regarded as tracking “morally salient features of the situation”. Hence, animals can act for moral reasons, and some of their

² A similar problem also arises in relation to the normative force of epistemic values and principles (e.g., rules of deductive inference), and rules of meaning (e.g., rules governing the usage of linguistic expressions).

mental states can be regarded as having normative grip, even if they lack sophisticated reflective capacities.

My concern is not with this metaphysical notion of normativity. It is with a purely *psychological* notion of normativity. The question I want to consider is whether chimpanzees have psychological mechanisms that enable them to: (i). acquire and mentally represent social norms prevailing in their groups, (ii). be motivated to comply with these represented norms, (iii). mentally represent the extent to which the behaviour of other group members conforms to, or violates, represented norms (i.e., evaluate others' behaviour *vis-à-vis* these norms), and (iv). sometimes behave punitively towards perceived norm violators.

As just put, the question of chimpanzee normativity might, of course, have important bearing on whether chimpanzees can be understood as normative creatures in the metaphysical sense—for instance, whether they can be seen as acting for metaphysically moral reasons, or as somehow living within the world of values. Empirical investigation of normativity *qua* psychological capacity, including its distribution in the animal kingdom, should inform meta-ethical theorizing about the nature of metaphysical normativity (e.g., Gibbard 1991; Kitcher 2011). However, this psychological question is nonetheless importantly distinct from corresponding meta-ethical questions, and would make sense even if it turned out that there was no such thing as normativity in the metaphysical sense—if there were no genuinely normative reasons or normative/moral properties, for instance. It is thus no objection to chimpanzee normativity to hold that this isn't *really* “normativity” in some more philosophically demanding sense of the term. Unfortunately, this point has often been lost in recent debates amongst scientists and philosophers over normative and moral cognition in non-human animals, where these psychological and meta-ethical questions have been routinely conflated (see Fitzpatrick 2017a).

As the previous remarks suggest, the sense of (psychological) normativity at stake here is a *social* one, anchored in the capacity to internalize and enforce social norms. However, normative reasoning clearly isn't exclusive to interpersonal relations. For instance, human beings make normative evaluations when they engage in all sorts of non-social practical reasoning and decision-making: “*should* I buy this bicycle?”; “*ought* I not eat that dessert?”. The question of whether non-human animals are normative creatures thus shouldn't just be restricted to the social context, since it is conceivable that some species may make similar evaluative assessments as part of their purely individual decision-making processes, and it is possible that some animals may engage in normative reasoning *only* in non-social cognition. My focus here, though, is exclusively with whether chimpanzees deploy normative reasoning in social cognition; whether their normative capacities extend into non-social cognition, I will leave as an open question.

Evidence

It is only recently that comparative psychologists have begun to take seriously the possibility of normative cognition in non-human animals. In comparison with capacities like mindreading (theory of mind), causal reasoning, communication, and

so forth, there has been little systematic empirical work in this area, especially work that attempts to tease apart behaviours that indicate some kind of norm psychology from those that do not. Nonetheless, several chimpanzee and other great ape behaviours have been claimed to provide at least strongly suggestive evidence of the presence of social norms and capacities for normative evaluation. Here, I will briefly review some of the relevant work (for other reviews, see de Waal 2014; Burkart et al. 2018; Vincent et al. 2019; Andrews 2020).³

It is well known that wild chimpanzees engage in group hunting of monkeys. Although controversial (see “[Shared intentionality](#)” section for further discussion), Boesch and colleagues’ observations of such hunts by populations in the Tai Forest (Côte d’Ivoire) indicate a complex and coordinated division of labour, with some individuals driving monkeys in the direction of groupmates waiting to ambush. Boesch and colleagues report that the spoils are typically distributed in proportion to each individual’s level of participation in the hunt, rather than (as one might otherwise expect) status in the dominance hierarchy, proximity to the kill, or ability to control the carcass. The result is that even a high-ranking male may receive less meat than a lower-ranked one who played a more active role (Boesch 2002, 2012). This suggests that these populations have developed specific norms of cooperation to ensure that each individual’s contribution to the hunt is appropriately rewarded and to deter free-riding. Such claims are supported by studies of captive chimpanzees, which have suggested that they are sensitive to whether others receive more than they do for the same work—for instance, receiving a more desirable reward for completing the same effortful task (Brosnan et al. 2005).

As de Waal (2014) has argued, the dominance hierarchy in chimpanzees (and other primates) is plausibly associated with various norms about what counts as appropriate or inappropriate behaviour, such as who gets to mate with whom, how subordinates should treat those higher in rank, and so forth—norms that young chimpanzees need to learn if they are to avoid punishment. One illustration of this is Nishida et al.’s (1995) description of a striking instance of ostracism of a young adult male from a group in Mahale National Park (Tanzania) for (apparently) failing to pant-grunt (a sign of submission) to higher-ranking males. This male left the group after suffering a violent coordinated attack, not just from higher-ranking males, but also females in the group.

Social play, which is an important part of the lives of juvenile and adolescent chimpanzees, presents another interesting case. Typical chimpanzee play behaviours

³ Andrews (2020) has perhaps gone the furthest in arguing for normative capacities in chimpanzees and other apes, on the back of an account of human and non-human social cognition referred to as “naïve normativity”. According to this account, predicting the future behaviour of others is itself frequently a normative exercise, since it often requires us to reason about what agents *should* or *should not* do in the relevant situation, given prevailing social norms (“should” here isn’t simply being used in the sense of the “should” of prediction or regularity, such as in “it *should* snow tomorrow”). Hence, attributing normative capacities to chimpanzees is, according to Andrews, part of the best explanation for their facility at predicting the behaviour of their groupmates. Sultanescu and Andrews (2013) also argue that ape gestural communication is best explained on an account of intentional content, derived from Ginsborg (2011), that equates concept possession with having a primitive notion of appropriateness.

include acrobatics, wrestling, hitting, biting, and slapping. Since these can easily be mistaken for acts of aggression, and play bouts can become quite intense, they are normally accompanied by characteristic play signals—facial expressions, body postures, and other cues—that indicate to play partners, “this is only play” (Palagi 2007).⁴ Studies of chimpanzee play have also reported self-handicapping on the part of older partners playing with younger ones, and adult chimpanzees, especially mothers, intervening to stop play bouts that have become too rough (Goodall 1986; Flack et al. 2004). The complexity of the social dynamics surrounding play bouts makes plausible the idea that such interactions may be governed by norms—rules about what is and is not appropriate behaviour in that social context—that are enforced both by play partners and by third parties. In one study, Flack et al. (2004) found that older chimpanzees tended to match their play intensity to that of the younger partner. They also found a strong correlation between the frequency of signalling behaviours by older chimpanzees and the proximity of the younger partner’s mother. Such an increase in signalling, either on the part of the older or younger partner, was not associated with the proximity of the older partner’s mother. This suggests a norm about how older players are to treat younger ones, with which older chimpanzees are keen to signal their compliance in the presence of potential third-party enforcers.

The special place reserved for infants in chimpanzee communities also suggests normative capacities. Infants tend to enjoy very high levels of tolerance, including from adult males. Observational studies of wild and captive populations (reviewed by Rudolf von Rohr et al. 2011) have reported instances of intra-group aggression toward infants being met with loud protests by third parties, including “*waa*” barking, a vocalization often used by victims of aggression. Direct interventions by third parties, seemingly to prevent infanticide, and violent responses towards perpetrators of infanticide, have also been reported (e.g., Townsend et al. 2007). Rudolf von Rohr et al. (2015) found that captive chimpanzees looked longer at video clips of incidents of infanticide than at other clips that featured violent conflict between adults, or other striking and usual scenes of violence or frenetic movement (including some in which infants were featured). Importantly, such a measure of looking time has been used to measure social expectations in pre-verbal human infants, with several studies reporting that infants look longer at events that violate expectations about, for instance, equitable division of resources (e.g., Schmidt and Sommerville 2011; Sloane et al. 2012). This suggests that the subjects may have looked longer at the infanticide clip because the observed behaviour violated a norm prohibiting violence against infants.⁵

⁴ Dog owners will be familiar with the “play bow” that domestic dogs will perform before initiating play behaviours and immediately after performing behaviours (such as biting) that might be construed by partners as aggressive. Functionally analogous play initiation and maintenance signals are found in a great many species (Bekoff 2004).

⁵ Rudolf von Rohr et al. did not find that subjects were more aroused by the infanticide clip, though only a behavioural (not a physiological) measure was used. They explain this by noting that the clips featured unfamiliar chimpanzees, and that chimpanzees (like humans) have a strong in-group bias, which made them less aroused than they might have been had the clip featured familiar individuals.

Objections

It should be emphasized that work in this area is still very much in its infancy. One should clearly try to avoid concluding too much from what little has been done to date. Sceptical readers will no doubt be able to conjure up alternative explanations for the relevant behaviour, though these readers should remember that merely being able to *offer* a sceptical alternative isn't sufficient grounds to deny chimpanzee normativity. We should therefore *also* try to avoid the unfortunate armchair denialism (Fitzpatrick 2017b) that has often afflicted debates about animal minds, and the tendency of diehard human exceptionalists to hold attributions of cognitive capacities to non-humans to impossibly high evidential standards they wouldn't accept for human beings.

With this in mind, I claim that there is at least *prima facie* empirical support for the thesis of chimpanzee normativity. In at least some chimpanzee communities, there do *appear* to be norms determining appropriate and inappropriate behaviour with respect to a variety of social interactions: hunting, navigating relations of rank, play, treatment of infants, and so on. Chimpanzees appear to be sensitive to these norms as third parties, evaluating others' behaviour in light of them, and some are disposed to act as norm enforcers, intervening to stop norm-violating behaviour and/or to punish norm violators. If correct, this would, of course, imply that chimpanzees possess psychological mechanisms necessary to acquire and mentally represent group norms, evaluate others' behaviour according to such norms, and motivate relevant compliance and enforcement behaviours.

There are, however, several objections to chimpanzee normativity that have been proposed in literature, which present various theoretical barriers to accepting such claims. In responding to them, I will say more about the kind of norm psychology that seems to be present in chimpanzees and pinpoint some important open questions that remain about the nature and extent of this norm psychology.

Norm following

Adapting a point made famously by Wittgenstein, Schlingloff and Moore (2017) note that it is one thing for an individual's behaviour to *conform* to a rule and another thing for the individual to act *on the basis* of a rule. The mere fact that a sequence of behaviour is consistent with a given rule, doesn't establish that the rule is actually part of a correct causal explanation for the behaviour. Hence, they argue that it is insufficient to demonstrate the existence of social norms in a particular species to show that the relevant behaviour can be *described* in terms of particular norms. Rather, they assert that one can only claim to have genuine evidence for social norms, if one has reason to think that supposed normatively guided behaviour is in fact action, "according to a conception of a rule, and not merely in accordance with it" (2017, p382). Referring to studies that have demonstrated immigrant female chimpanzees abandoning the dominant nut-cracking technique of their previous group, in favour of that of the new group (e.g., Luncz

and Boesch 2014), Schlingloff and Moore (2017, p. 383) claim that though this could be *described* as conformity to a group norm about how one should crack nuts, “there is no reason to suppose that chimpanzees are aware of the rules that describe their behaviour, nor to think that they expect others to conform to them”. They regard this as a general problem with all of the studies that purport to provide evidence of genuine social norms in chimpanzees.

Schlingloff and Moore have various other criticisms of the alleged evidence for chimpanzee normativity, some of which I will discuss later in the paper. For the moment, I want to focus on this question of how we should distinguish between behaviour that is in fact normatively *motivated* from behaviour that is merely *consistent* with particular social norms. Schlingloff and Moore are quite right that establishing chimpanzee normativity requires more than merely showing that the behaviour of chimpanzees can be described in terms of particular norms, and distinguishing genuinely normative behaviour from non-normative behaviour is the most significant empirical problem facing advocates of normative capacities in chimpanzees and other non-human animals. Of particular difficulty is empirically distinguishing between, for instance, normative disapproval of another individual’s behaviour and mere personal dislike of that behaviour. Consider, for example, the bystander chimpanzee who “*waa*” barks when observing another adult behave aggressively towards an infant. How are we to tell whether the bystander is protesting a norm violation or just expressing a *preference* against the other’s behaviour? I might have a strong preference against you performing a particular behaviour in my presence, and I might try to get you to alter your behaviour by protesting in various ways, but I could just be aiming to satisfy my own preferences, not enforcing a social norm. So, how are we to tell that the protest is genuinely normative and not just an expression of preference? Note that this isn’t settled by pointing to the fact that the chimpanzee is a third party. Third-party punishment is often invoked as a key piece of evidence for the existence of social norms, and, as we will see, critics of chimpanzee normativity (including Schlingloff and Moore) have cited the apparent dearth of experimental evidence for third-party punishment in chimpanzees as a reason to deny them normative capacity, but third-party intervention or protest, by itself, doesn’t establish normativity, since it could just be the result of efforts to shape others’ behaviour to correspond with the third party’s preferences.

This is partly why I say that the studies described in “[Evidence](#)” section provide *prima facie*, but not decisive, evidence for chimpanzee normativity. It is clear that much future work needs to be done to address this problem of teasing apart normatively motivated behaviour from behaviour that can be explained in non-normative terms. As Andrews (2020) observes, though, this problem arises equally in the case of the alleged normative behaviour of young human beings, and many researchers have been quite happy to attribute normative capacities, such as a sense of fairness, to preverbal children on the basis of no more evidence than we have for chimpanzees (e.g., Schmidt and Sommerville 2011; Sloane et al. 2012). However, before headway can be made with respect to this problem, we need to think more about *what it is* for behaviour to be normatively motivated—i.e., what has to be going on inside the mind of the agent. Schlingloff and Moore adopt a particular picture of what it is for

a creature's behaviour to be motivated or caused by social norms, and this is the first apparent theoretical barrier to chimpanzee normativity that I wish to discuss.

On the surface, it is far from clear what Schlingloff and Moore actually mean by "aware of the rules that describe their behaviour", and thus what it would be for chimpanzees to act "according to a conception of a rule, and not merely in accordance with it" (p382), but their repeated use of terms like "conception" and "awareness" suggests that they have in mind some form of *explicit* mental representation of the contents of the relevant norm. Schlingloff and Moore also cite Bicchieri's (2006) influential characterization of social norms as packages of beliefs and expectations about others' normative beliefs and behaviour. Bicchieri's account requires that for a behavioural rule in a group to count as a social norm, a sufficient number of individuals in the group must believe that others are disposed to follow the rule and that others expect *them* to conform to the rule. It also holds that individuals conform to the rule only because they have these expectations about others. The idea thus seems to be that we should be sceptical about chimpanzee normativity because it is unlikely that chimpanzees satisfy these conditions for social norms.

In the next section, I will challenge the assumption, which seems central to Bicchieri's account, that social norms require individuals to have higher-order beliefs about others' normative beliefs. Here, I want to focus on the idea, which certainly seems to be widely held in the philosophical literature (see Danón 2019), that social norms are things, the content of which, individuals must have explicit awareness. This view runs into great difficulty when confronted with what now appears to be largely the consensus view of psychologists and empirically-oriented philosophers about human norm psychology, which is that much, perhaps most, of our normative reasoning and motivation is *implicit*—i.e. automatic, involuntary, and not directly accessible to consciousness—with only a fraction of it taking place under direct conscious control (e.g., Haidt 2001, 2012; Nichols 2004; Sripada and Stich 2006; Mikhail 2011; Chudek and Henrich 2011; Greene 2013; May and Kumar 2019).

Following Kelly (forthcoming), a useful way of thinking about this current near consensus is to talk about two different ways of acquiring and following a norm: *internalizing* and *avowing*. *Avowed norms* are the sorts of norms that one explicitly thinks about and may decide to commit to—for instance, after careful consideration, adopting a rule like, "don't buy from a company that uses child labour". Not much work has been done in cognitive science on how this actually works, but the idea is that learning and following avowed norms requires conscious thought and effort. However, much, arguably most, of human norm psychology is concerned with *internalized norms*: norms that one has just "sucked in" unconsciously from one's cultural environment, and which one follows without explicitly thinking about it. This is where accounts like Bicchieri's, which rely on intuitive, folk psychological assumptions about the mental states that underlie people's normative behaviour, run into trouble (Kelly and Davis 2018).

Work in developmental psychology suggests that this internalization is something that happens reliably and early in human development. Children appear to come into the world ready to "suck up" the social norms in their local cultural environment, and this process requires very little explicit instruction. Children learn many of the norms of their group merely from passively observing others' intentional actions,

without those actions being accompanied by normative language (Schmidt et al. 2011), and without themselves being sanctioned for violating the relevant norm (Hardecker and Tomasello 2017). Children will also spontaneously adopt norms where there are none. For instance, after a single demonstration of one way of carrying out a particular task by an adult, children as young as two will protest against a puppet that performs the same task in a different way (Schmidt et al. 2016). Moreover, as empirical studies of folk normative judgment have shown, both children and adults appear to be much better at detecting and responding to norm-violating behaviour than giving explanations as to *why* such behaviour is appropriate or inappropriate (Haidt 2001, 2012; Mikhail 2011). In other words, it seems that human beings frequently have little to no explicit awareness of the norms or processes of reasoning that have led them to make certain normative evaluations. Human normative judgment often also has a characteristic emotional valence, with judgments about norm violations often accompanied by strong negative emotional reactions such as anger and disgust (May and Kumar 2019).

According to what Kelly and Davis (2018) call the “cognitive-evolutionary” approach to human normativity, the phenomenon of internalized norms suggests that in addition to our ability to explicitly avow certain norms, humans also have some sort of implicit, automatic, and unconscious *norm system* that, from an early age, allows us to identify, learn, and mentally store the social norms that prevail in our local cultural environment (Sripada and Stich 2006). This system generates intrinsic (rather than instrumental) motivation to comply with these norms, detects when they have been violated by others, and motivates punitive behaviours towards norm violators—at least in some instances, via eliciting various other-directed emotional states such as anger or disgust. This system operates automatically and involuntarily in the sense that individuals don’t consciously decide to turn it on or off and aren’t able to consciously control how it operates. Individuals can’t directly articulate the content of the norms that they have internalized.⁶ At best, all that the individual has conscious awareness of are the motivational states and the (often emotionally-laden) normative evaluations/judgments that constitute the outputs of the system.

Proponents of the cognitive-evolutionary approach typically hold that this norm system is a domain-specific evolutionary adaptation (Sripada and Stich 2006; Chudek and Henrich 2011; Kelly and Davis 2018), but it is also possible (at least, in principle) that it may be realized via more domain-general social learning processes (Heyes 2018). Either way, such a dual-process view⁷ of human norm psychology

⁶ To say that mental representations of norms in the norm system are *implicit* is thus not to say that they aren’t actual or real representations inside the heads of agents, just that they aren’t accessible to conscious thought. Hence, the use of the term “implicit” here is different from that where it might be said that a person implicitly believes, “no camels are astronauts”, or, “elephants are heavier than air”—i.e., be disposed to act *as if* they hold such a belief, but not actually have a mental representation inside their head with that specific content.

⁷ There has been general convergence towards *some* form of dual-systems account of human normative cognition, although whether the distinction between the two systems corresponds to the popular System 1 / System 2 model of intuitive/automatic vs. reflective/controlled cognitive systems (e.g., Kahneman 2011) is up for debate (see Sripada and Stich 2006; Mikhail 2011; Greene 2013).

allows that we can regard an individual's behaviour as normatively guided by an internalized norm, in so far as the relevant motivational states and resultant behaviours can be causally traced back to a mental representation of a norm in the norm system. Such behaviour wouldn't merely be behaviour that is consistent with a norm. Chimpanzees could therefore be understood as acting on the basis of norms in so far as their behaviour is triggered by motivational states that can be causally traced back to mental representations of norms—for instance, if they possessed mechanisms homologous with (or functionally analogous to) those that realize our norm system. Crucially, on such an account, chimpanzees needn't require any "conception" or "awareness" of the relevant norms, for the same reason that human internalized normativity doesn't require this either.⁸

What matters for my purposes, for what I want to call *chimpanzee normativity*, is that chimpanzees possess at least *some* capacity to acquire and mentally represent the content of norms. Clearly, that cannot be dismissed merely because one might doubt whether chimpanzees have any "awareness" or "conception" of the contents of the relevant norms. We *may* want to distinguish between implicit and explicit normative reasoning, evaluation, and motivation—i.e., cases where norms play a causal role in generating behaviour without the creature having any "awareness" of the norms and cases where there is such awareness—at least in so far as there is actual evidence that humans are even capable of explicit normative reasoning (that shouldn't be taken for granted). However, given current views about human normative cognition, we clearly should not dismiss implicit norm psychology as a type of norm psychology.

Now, of course, the key problem is how to test for an implicit norm psychology, and this takes us back to the basic point that Schlingloff and Moore do get right: we need to find evidence that mentally represented norms actually play a *causal role* in the observed behaviour. The research discussed in "[Evidence](#)" section is, in my view, strongly suggestive, but certainly not decisive on this front.

Shared intentionality

Many in the literature on social norms have adopted the view that genuine social norms can only emerge when creatures have a sense of how *we* (*qua* group) do things. Hence, one popular motivation for denying chimpanzee normativity is that it would require chimpanzees to possess so-called "shared" or "we" intentionality (Bratman 1992): the ability and inclination to not only represent the mental states of

⁸ Andrews (2009, 2013) and Musschenga (2013) have previously suggested that the norms of animal communities are likely implicit rather than explicit (see also, Danón 2019). Andrews (2020) presents a model of implicit normativity that modifies Bicchieri's requirements. Although Schlingloff and Moore cite Andrews (2009), for some reason, they don't appear to take seriously such an implicit account of normative cognition. Musschenga advocates a System 1 / System 2 model of human psychology and holds that animals likely only have System 1 normative reasoning capacities. Since there are some reasons to doubt the existence of distinctively System 2-like reasoning in humans (see Carruthers, 2011), I'm sceptical about the usefulness of the System 1 / System 2 distinction for thinking about the differences between human and animal minds.

others, but also to actively share mental states with them, such that one is able form joint or shared representations—for instance, a shared understanding between oneself and another agent that *we* have the same goals, beliefs, etc. Shared intentionality is thought necessary to explain various sorts of *joint action* in humans. An often used example is taking a walk *with* someone, as opposed to coincidentally walking *next* to someone (Gilbert 1990): while both might appear coordinated, the former, unlike the latter, seems to require oneself and the other agent to have mutual understanding of a common goal (taking a walk together) and a common plan of action to achieve it (e.g., each adjusting direction and pace so as to walk side-by-side). This understanding is mutual insofar as each of us knows that both of us have the relevant goals/intentions *and* knows that the other knows that too. This particularly sophisticated type of mindreading ability and collaborative motivation⁹ has been widely held to be uniquely human (e.g., Tomasello et al. 2005; Tomasello and Carpenter 2007).

Here, for instance, is Tomasello's (2016) story about how social norms and normative attitudes evolved, which ties the process to the evolution of capacities for shared intentionality. The first stage was the development of mutual understanding of shared goals at the dyadic level. Tomasello regards this as the foundation for complex cooperative activities like group hunting and child rearing, which require individuals to coordinate their own behaviours with others to realize a common objective. Shared intentionality at this dyadic level evolved, Tomasello argues, when hominins became "obligate" collaborative foragers: when they could only obtain enough food to survive by cooperating with others (Tomasello argues that, in contrast, species on the *Pan* side of the *Pan-Homo* split, remained in environmental niches where collaborative foraging never became obligate). A shared understanding of a joint goal and a joint plan for achieving the goal facilitates an understanding of *roles*: mutual recognition of each other's responsibilities in a cooperative endeavour (e.g., you chase, I'll ambush). It was here, according to Tomasello, that primitive social standards and expectations about meeting such standards could begin to emerge—for instance, an expectation that one's partner will fulfil a given role and a recognition that one is subject to similar expectations. This, in turn, led to primitive normative attitudes—for instance, annoyance at a partner who fails to perform a given role, leading to the failure of a cooperative venture—and a primitive sense of responsibility towards the cooperative venture and one's collaborator. Tomasello refers to this as "a kind of *natural, second-personal morality*" (2016, p5). The second stage occurred later in hominin evolution when this dyadic intentionality was scaled up to the level of the group, via group-level cooperative ventures (e.g., collective defence against a rival group). Once individuals had a collective sense of

⁹ There is a large literature on exactly what level of cognitive sophistication is necessary for shared intentionality and exactly what level of shared intentionality (if any) is actually required for various types of joint action (for reviews, see Zawidzki 2013; Butterfill 2016). I will assume that, at a minimum, shared intentionality requires one to be able to form nested representations of goals and intentions: one's own, those of another, and those of a plural agent composed of oneself and the other (*we*). Tomasello et al. (2005) emphasize that shared intentionality is also partly *motivational* as well as cognitive: individuals must *want* to share mental states with others and want to engage in joint actions with them.

we qua group or community, social expectations could become separated from local interactions between individuals, becoming agent-independent rules of behaviour. According to Tomasello, it was at this point that the ability to form representations of group norms could emerge (e.g., “we do it this way”).¹⁰

Claims about the absence of shared intentionality in chimpanzees (Tomasello et al. 2005; Tomasello and Carpenter 2007; Tomasello and Moll 2010) have been motivated by studies of chimpanzee cooperation and gestural communication. Chimpanzees engage in all sorts of group activities, including group hunting of monkeys, but chimpanzees don’t, according to Tomasello and colleagues, genuinely *collaborate* with others. Rather, their cooperation is *individualistic*: individual chimpanzees are able to understand the intentions and goals of others, know when and how they can use or exploit others to achieve their own goals, and are able to determine which individuals might be the most effective partners, but they don’t form shared goals and plans *with* others. Such claims are allegedly supported by studies with captive chimpanzees that appear to show that they typically prefer to solve tasks individually and only work with others when that increases their potential payoff (e.g., Bullinger et al. 2011a). Also, in contrast to human children, chimpanzees allegedly don’t try to re-engage a partner after they have broken away from a cooperative activity, preferring instead to continue try to complete the task on their own, and, most importantly, don’t use pointing or other communicative gestures to initiate, guide, and maintain group activity, despite the fact that they do have a repertoire of communicative gestures that they can use for other purposes (Bullinger et al. 2011b, 2014). It is claimed, therefore, that chimpanzees view others merely as social tools, rather than as genuine collaborators, and either can’t, or aren’t motivated to, share their attention with others to form joint goals and joint plans.

Critics (e.g., Boesch 2012; Suchak et al. 2016) have challenged these claims, arguing that most of the existing experimental studies of chimpanzee cooperation are not well suited to elicit whatever natural collaborative tendencies chimpanzees have. The failure of a handful of captive chimpanzees to manifest joint attentional behaviours as readily as human children in artificially contrived settings is hardly sufficient evidence to deny capacities for shared intentionality more generally, and certainly not to make sweeping species-wide generalizations about collaborative ability. Boesch (2005, 2012) has argued that it is very difficult to explain the apparently coordinated group hunting behaviours of Tai chimpanzees, where individuals appear to have clearly defined roles (driver, ambusher, etc.), without attributing to

¹⁰ Tomasello (2016) also accords shared intentionality a crucial role in the development of normative capacities in human children. Hence, the evolutionary story just described is supposedly recapitulated, to some extent, in ontogeny: skills of shared intentionality allegedly emerge around a child’s first birthday, and, by the second birthday, children are able to see local interactions with others in normative terms (second-personal morality)—for instance, protest against a puppet that plays a game the “wrong” way. Understanding of wider group and cultural norms then emerges as children become able to participate in forms of collective intentionality.

them shared understanding of a common goal and plan for achieving it.¹¹ Boesch also points out that captive chimpanzees, being provided with food and a safe and predictable environment, have much less incentive to develop whatever collaborative abilities they may have, and that levels of group action and coordination vary significantly in wild chimpanzee populations, apparently in proportion to environmental threats. Thus, Tai chimpanzees, who face much higher rates of leopard attacks and raids by neighbouring groups than other populations, display much greater levels of coordination in hunting, defence of territory, and so forth, and manifest more behaviours indicative of group solidarity, such as tending to the wounds of non-kin and adoption of unrelated infants who have been orphaned. In addition, the cooperative and apparently rule-governed nature of social play in chimpanzees is difficult to explain without attributing to playmates a mutual understanding of the interaction as a play interaction.

Moreover, it is important to note that proclamations about the absence of particular mindreading capacities in chimpanzees don't have a good track record. Indeed, Tomasello and colleagues have, at various points, published results overturning almost all of their previous negative claims (e.g. Tomasello and Call 1997), about chimpanzee mindreading—most recently, the claim (e.g., Call and Tomasello 2008) that chimpanzees are unable to reason about others' false beliefs (Krupenye et al. 2016; Buttleman et al. 2017).¹² To their credit, Tomasello and colleagues have rejected an all-or-nothing view of mindreading, arguing that organisms may possess some types of mindreading capacity (e.g., the ability to reason about the perceptual states of others), but not others. This would allow that chimpanzees might be able to reason about lots of different mental states, including, perhaps, the ability to reason about false belief, but *still* lack the ability to understand that they and another share the same goals or beliefs, or lack the *motivation* to form joint goals/plans with them. Even so, one might still want to be hesitant about denying the presence of shared intentionality, given the track record of such denials for other types of mindreading.

However, even if it turns out that shared intentionality *is* uniquely human, it is far from clear *why* shared intentionality should be thought a necessary precondition for the emergence of some kind of normative psychology. Tomasello's just-so

¹¹ Tomasello (2016) argues that chimpanzees are merely individualistic hunters and don't actively coordinate their behaviour in the hunt with others. Individuals pursue their own hunting strategies, which sometimes results in successful, but accidental, coordination (e.g., chasing a monkey into the reach of another hunter). This picture is consistent with descriptions of hunting in some chimpanzee populations (see Muller and Mitani 2005), but is difficult to reconcile with Boesch and colleagues' descriptions of Tai chimpanzees (Boesch 2002, 2005), and the fact that some chimpanzee hunts are individualistic certainly isn't sufficient to show that chimpanzees can't collaborate.

¹² It should be noted that Tomasello (2018) has argued for a causal link between the development of shared intentionality in children and the emergence of a full-fledged understanding of false belief required to pass the classic verbal false-belief task. This has resulted in somewhat of a climbdown from attributing full-fledged false-belief understanding to chimpanzees to the claim that they possess the same mindreading capacities that children use to pass non-verbal false-belief tasks, prior to their being able to pass the classic verbal task. This involves basic understanding of others' epistemic mental states (seeing, knowing, etc.), but not the ability to distinguish between others' subjective perspective and objective reality, which, Tomasello holds, is necessary for full-fledged understanding of false belief and develops via participation in collaborative activity.

story is just that; why think that there is no evolutionary pathway to social norms that doesn't require shared intentionality? Indeed, Andrews (2009, 2013) has suggested that we should actually *reverse* the evolutionary story: it was the prior existence of capacities for social norms and normative evaluation that led to the subsequent evolution of sophisticated mindreading capacities like shared intentionality. Andrews' claim is that the evolutionary function of our ability to reason about the mental states of others, particularly their beliefs and desires, is providing insight into *why* others do what they do—i.e., *explaining*, rather than, on the more traditional view, *predicting* their behaviour. There are, according to Andrews, many ways of accurately predicting the behaviour of others that don't require organisms to represent the mental states of others, including thinking about what others *should* do, given prevailing social norms. Moreover, it might have been a social environment already permeated by social norms and normative evaluation of others' behaviour that conferred a selective advantage on individual organisms with cognitive mechanisms that could better understand why, for instance, another organism behaved in an apparently norm-violating way.¹³

I am more sympathetic to the traditional view that capacities for understanding the mental states of others originally evolved for purposes of behaviour prediction (Fitzpatrick 2009), but Andrews is quite right to challenge the assumption that particularly sophisticated mindreading capacities like shared intentionality must have evolved before any type of normative psychology could come onto the scene. Making good on this challenge does, however, require one to look a little deeper into why so many theorists have adopted that assumption.

There seem to be two main arguments that one can find lurking in the literature for thinking that shared intentionality is a necessary prerequisite for social norms. The first argument, which I will call the *constitution argument* concerns the alleged nature of social norms themselves. The second argument, the *acquisition argument*, holds that shared intentionality is necessary for the initial emergence and social transmission of norms. I will articulate and respond to each of these arguments in turn.

“Social norms”, Tomasello and Carpenter (2007, p124) write, “can only be created by creatures who engage in shared intentionality and collective beliefs”. The idea is that it is an essential feature of social norms that they represent the expectations that the community places on individuals. Schmidt and Rakoczy elaborate:

The standard definition of social norms reveals why collective intentions are so central to normativity: social norms prescribe or proscribe certain actions

¹³ Zawidzki (2013) presents a similar picture, arguing that sophisticated mindreading capacities, such as propositional attitude attribution, could only have evolved after various mechanisms for so-called “mindshaping”, which function to regulate the minds of social organisms in a group in such a way as to make them sufficiently similar to each other for effective cooperation to be maintained, since, without such mental homogeneity, inferences to others' propositional attitudes would be cognitively and epistemically intractable. The capacity to follow and enforce social norms is one such mindshaping mechanism. However, Zawidzki isn't prepared to go as far as Andrews in attributing normative capacities to other primates, suggesting that such capacities evolved uniquely in the human lineage.

under certain circumstances for a given group of people (which might encompass a few to virtually all rational agents) and thus regulate everyday social interactions... That is, norms are collective phenomena that transcend individual perspectives, opinions, and non-collective mental states, such as individual beliefs, goals, and desires—they give agents reasons to act in certain ways independent of their particular interests or desires... So it is not about what individuals intend, want, or desire, but about what ‘we’ (as a group) do and do not do in a certain context. (Schmidt and Rakoczy 2019, p122–3).

According to the constitution argument, then, social norms must exist in the form of *collectivized* mental representations, constituting a shared understanding of what is and is not permitted by the group. In other words, mental representations of social norms must either have “we” (or some conceptual equivalent) as a constituent (“we do x”; “we don’t do y”), or, at least, be accompanied by some understanding that others in one’s group *also* have the same representations in their own minds, for these mental representations to count as representations *of* social norms. As noted earlier, the latter is a central assumption of Bicchieri’s (2006) account of social norms as packages of beliefs about others’ normative beliefs and expectations.

The problem with this argument is that it adopts an over-intellectualized, folk psychological account of the nature of social norms. Social norms *are* collective phenomena and do “prescribe or proscribe certain actions under certain circumstances for a given group of people”, but that doesn’t mean that mental representations of norms must *themselves* be collectivized in the form of “we...” representations and/or accompanied by an understanding that others share the same mental representations. Mental states can be collectively held by a group of individuals without individuals having to know that they are so held. All that is necessary for behavioural rules to be collectively held is that individuals in a group have internalized the same rules of behaviour and those rules play a role in motivating their own compliance and enforcement behaviours. There is no need for the mental representations of those rules to have “we” as a constituent, or for individuals to have any awareness of the community as a whole, or understanding that others share these representations. The collective aspect of social norms can emerge simply from the fact that group members have the *same* mental representations, it doesn’t have to be built into the mental representations themselves.

The dual-process model of human norm psychology articulated by advocates of the cognitive-evolutionary approach to social norms discussed in the previous section suggests that very many of the norms that prevail in human communities have been unconsciously inferred from others’ behaviours, implanted in the individual’s norm system, and play a causal role in motivating compliance and enforcement behaviours, without the individual ever having to think, “we don’t do y”, “this is what the community demands of me”, and so forth. Humans may be capable of such thinking, but I am sceptical about how much of our everyday normative cognition really implicates such thinking, and I see no reason to think that rules governing behaviour within a social group can only exist when individuals understand that others understand those rules; all that is necessary is that enough individuals in the group have internalized and comply with the *same* rules.

Rudolf von Rohr et al. (2011) draw a distinction between “proto-social” norms, which aren’t collectivized, and genuine social norms which are collectivized. They regard shared intentionality as necessary for the latter, but not the former. Hence, since they take shared intentionality to be uniquely human, they refer to what they take to be prohibitions against violence towards infants in chimpanzee communities as “proto-social norms”. I have no particular quarrel with drawing a distinction between different types of norms in this sort of way. However, for the reasons just stated, I think that Rudolf von Rohr et al. overemphasize the centrality of shared intentionality to human norm psychology. Thus, it seems ill-motivated, in my view, to label norms without shared intentionality “proto-social”, suggesting that they aren’t the real McCoy.

Much of the scepticism about chimpanzee normativity is driven by scepticism about whether chimpanzees have the requisite social learning abilities to acquire norms from their group mates. The acquisition argument holds that they lack such abilities because they lack shared intentionality. Tomasello and colleagues have long argued that shared intentionality constitutes a uniquely human adaptation that provided a substantial chunk of the necessary cognitive and motivational basis for the emergence of genuinely *cultural* learning: the high-fidelity copying of behaviours needed to acquire arbitrary and frequently opaque cultural conventions, and transmit them across generations (e.g., Tomasello and Moll 2010). For instance, it has been argued that shared intentionality is necessary for teaching, since teachers must be motivated to share information with their students, who, in turn, must have a desire to receive information from their teacher. Teacher and student must also be able to jointly attend to the objects of a teaching demonstration and understand the intentions behind the demonstrated behaviours. Having additional motivation to share mental states with others has also been claimed to facilitate more powerful imitation learning, since it is likely to lead to closer focus on *actions* rather than just on *outcomes*, allowing, for instance, more precise understanding and copying of the component parts of a technique used by a conspecific. Tomasello and colleagues allow that chimpanzees are capable of some basic forms of imitation (e.g., Buttelmann et al. 2007), not just mere emulation learning (individually learning to reproduce the results of a conspecific’s action), but nonetheless hold that the evolution of shared intentionality in the hominin line led to the emergence of unique forms of cultural learning of the sort necessary for social norms to be transmitted across individuals and generations. For instance, Tomasello and Carpenter (2007, p123) claim that human infants “imitate more readily [than chimpanzees] the actions of others, and they sometimes do this with the apparent motivation not just to solve a task, but rather to demonstrate to the adult that they are ‘in tune’ about the current situation”, and that this is the root of their ability to internalize cultural information, including social norms, from adults.

Like the constitution argument, the acquisition argument also overstates the cognitive machinery required for social norms. While very complex and opaque cultural practices might require explicit teaching and souped-up forms of imitation, such abilities are plausibly unnecessary for the social transmission of much cultural information. Indeed, prominent accounts of human cultural evolution (e.g., Henrich 2015) regard cultural inheritance as frequently a “blind” process, where cultural

information and skills are transmitted from individual to individual and across generations largely automatically, without individuals having to have any understanding of what they are transmitting or learning from others, and what the practices are “for”, implying that fancy mindreading capacities like shared intentionality play a limited role (Clarke and Heyes 2017). Take, for instance, the social learning heuristics or “transmission biases” that cultural evolutionary theorists (e.g., Laland 2004; Boyd and Richerson 2005; Henrich 2015) have accorded a key explanatory role in accounting for the spread and maintenance of diverse cultural practices, including social norms, across different human populations. These include:

The conformity bias: preferentially copy the most common behavioural variants in one’s local cultural environment (e.g., the behaviour manifested by the plurality of one’s group).

Prestige bias: preferentially copy the behaviours of individuals of high social status.

Expertise bias: preferentially copy the behaviours of those that are successful at the relevant activity (e.g., the most productive hunter).

Age bias: preferentially copy the behaviours of individuals older than oneself.

Copy-if-better: preferentially copy a behavioural variant that is observed to be more efficient or yield a higher payoff.

These heuristics are taken to operate largely unconsciously and automatically, so that children are, for instance, naturally tuned to copy the most common behavioural variants in their environment. While such copying might require an explicit teaching demonstration, or very precise copying of motor patterns in some instances—complex food production techniques, for instance—much human conformist transmission clearly doesn’t require teaching or especially rich imitation of the sort that would need shared intentionality, and simple social norms arguably present *easier* learning targets than many other cultural practices. Consider, for instance, what behaviour needs to be copied for a simple social norm, like, say, a taboo against eating a particular type of food, to be transmitted: avoiding eating the food, and sometimes behaving punitively towards those that do eat it. One presumably doesn’t need to be taught to know how *not* to eat a particular food, and while a certain amount of reasoning about others’ goals and intentions will be needed to learn that a majority of fellow group members actively *avoid* eating a particular food and sometimes punish those that do, there is no reason to think that can’t be done passively, merely by observing others, and no reason to think that it requires sharing one’s mental states with others. Now, of course, for there to be genuine transmission of a social norm and associated normative attitudes, the social learner will need to acquire not just behaviour, but a mental representation of the relevant behavioural rule (e.g., “don’t eat X”), and that will need to be linked up with mental states that motivate the individual to comply with the rule and states that can be regarded as evaluative with respect to others’ behaviour. Again, though, I see no reason to think that this necessarily requires “we” intentionality.

There is evidence that chimpanzees manifest several of the above mentioned social learning heuristics or biases (Price et al. 2017). For instance, when learning to solve a novel foraging task, Kendal et al. (2015) found that task-naïve chimpanzees would preferentially observe and copy the behaviour of those of higher rank than themselves, and the behaviour of previously trained models over similarly task-naïve individuals. Novel behaviours adopted by low-ranking individuals, however, appear much less likely to spread through chimpanzee populations (Bonnie et al. 2007).¹⁴ Some studies have also found that chimpanzees are more likely to copy a novel behaviour exhibited by three individuals than by one (Haun et al. 2012). Long-term stable differences in things like nut-cracking technique between neighbouring groups of wild chimpanzees, despite frequent immigration of females, also suggests that chimpanzees are disposed to modify their behaviour to conform to the majority (Luncz and Boesch 2014; see also Whiten et al. 2005), sometimes even at the cost of abandoning a more efficient technique in favour of a less efficient one adopted by the majority (Luncz et al. 2018). But, in addition—and in contrast to their general reputation for behavioural conservatism—chimpanzees are, at least in some situations, liable to copy a novel behavioural variant demonstrated by a conspecific, when they observe it yielding a higher payoff than their previously learned behaviour (van Leeuwen and Call 2017). That is important, since a tendency towards conformist social learning needs to be offset by some degree of flexibility in adopting novel behaviours, so as to prevent conformity from stifling cultural innovation (Dean et al. 2014).

So, given that strategic social learning of cultural information/practices clearly can and does take place in chimpanzees, *here is a different just-so story about how a social norm might emerge and be socially transmitted without shared intentionality*. A high-status individual in a group (e.g., one high in a dominance hierarchy) decides, purely on the basis of personal preference, to behave punitively towards others that do something the individual wants to discourage. Perhaps, for instance, this individual experiences strong negative emotions when observing a kin or non-kin infant being subject to aggression, finds such behaviour aversive, becomes angry, and so reacts violently towards those that aggress towards infants. This behaviour would not be normative: coercing others to refrain from doing something I don't like, or am averse to, is not the same as my evaluating the behaviour as inappropriate because it violates a norm. However, prestige-biased social learners that are disposed to copy high-status models need to determine what to copy, and this will presumably require individuals to formulate a mental representation of some

¹⁴ Cultural evolutionary theorists (e.g., Henrich 2015) often distinguish between prestige and dominance by pointing out that prestige in human communities often isn't correlated with mere physical ability to dominate others. However, dominance in chimpanzees isn't just about physical strength, since coalition-building is vital for any would-be alpha. Even so, that chimpanzees preferentially copy those higher in the dominance hierarchy may be the product of a different, dominance-based, learning strategy than human prestige copying. But, this still shows strategic social learning similar in important respects to prestige transmission, and certainly doesn't show that there isn't prestige copying—as de Waal (1982, 1989) and others have documented, chimpanzee communities do appear to have influential and respected individuals, who aren't necessarily at the top of the hierarchy or physically able to dominate others.

rule that is taken to lie behind the observed behaviour of the model. For instance, if I am to copy the nut-cracking technique of a model, I will need to formulate a mental representation of a behavioural rule that can generate what I observe the model doing. In this case, learners observing the behaviour of the high-status individual may infer a rule like, “behave aggressively toward those that aggress towards infants”. These individuals will also presumably be discouraged from harming infants themselves, for fear of being met with punishment, and further discouraged, if averse to this already. Suppose also that there is copying of the model’s affective dispositions, so social learners are also apt to find aggression towards infants aversive and become angry when witnessing an infant being harmed. Piecing this together, individuals will have internalized a rule like, “don’t aggress towards infants and behave aggressively to those that aggress towards infants”, and this will be associated with agonistic emotions directed towards anyone that violates the rule. Now consider this rule spreading to other members of the group via prestige-biased and then conformist learning. This would give rise to a common aversion by members of the group towards aggression towards infants, a common tendency to behave punitively towards those that manifest such behaviour, and would be something that new members of the group (juveniles and immigrants) would have to learn in order to avoid sanction. The rule wouldn’t be something explicitly articulated or shared in the form of a collectivized “we” representation, and individuals needn’t have any conscious or reflective awareness of its content (again, we should avoid over-intellectualized, folk psychological interpretations of the process just described), but would nonetheless exist insofar members of the community have a common set of mental states. Hence, though the original behaviour of the model wouldn’t be normative, in the sense of being causally traced back to a mental representation of a norm, that would be the case for these other members of the community.

The story just sketched is similar to Stich’s (2014) story, rooted in the cognitive-evolutionary approach to social norms, about how what he calls “proto-norms” can come about, in turn inspired by the work of Boyd and Richerson (2005) and Henrich (2015). Like those authors, Stich takes it for granted that this could only have happened in the hominin lineage. However, I don’t see why we should assume that, given the evidence for at least some instances of conformist and prestige-biased social transmission in chimpanzees.¹⁵ This account does presuppose some degree of low-level mindreading of emotions and goals/intentions, and assumes

¹⁵ One background motivation here seems to be the idea that social norms can only exist in creatures that have *cumulative* cultural traditions. However, the story just sketched suggests that the question of cumulative culture in chimpanzees (Boesch 2012; Dean et al. 2014) and the question of normativity may be largely orthogonal. Simple social norms may exist with or without significant incremental accumulation of cultural complexity over generations.

social transmission of emotional and affective dispositions,¹⁶ but it doesn't require the kinds of nested higher-order mental states (I, you, we) involved in shared intentionality.

The way that I have told it, the story also presupposes *normative concepts*. Violations of a rule need to be associated with the application of normative concepts in order for the rule to be a social norm, rather than a purely descriptive rule. Now, it might be thought an advantage of Tomasello's account that it can seemingly offer an explanation of the origin of normative concepts. For Tomasello (2016), "the original *ought*" emerged from individuals with shared intentionality adopting a "bird's eye view" of dyadic collaborative activity, where each collaborator recognized their role in the activity, the role of the other, and the mutual expectations each placed on the other. I don't have a fully worked out story about where normative concepts like *should* and *ought*, come from, but the cognitive-evolutionary approach does suggest an alternative to the shared intentionality account. Some accounts of the evolution of morality (e.g., Joyce 2007) have suggested that moralizing behavioural rules may provide extra motivation to comply with and enforce them, so basic normative concepts could have helped our ancestors overcome weakness of will with respect to performing socially adaptive behaviour. Organisms that live in a social world where it is important for them to conform to local cultural practices may therefore gain fitness advantages if these rules are linked to normative concepts. Hence, concepts like *should* and *ought* might be expected to evolve in organisms with strategic social learning capacities capable of giving rise to such a social environment (Chudek and Henrich 2011).

It is clear, then, that, despite its current popularity, the shared intentionality view of normativity rests on some dubious assumptions about the nature of social norms and the cognitive machinery required for the initial emergence and social learning of norms. There is no good reason, therefore, for regarding the alleged absence of shared intentionality in chimpanzees as a barrier to the very existence of social norms in chimpanzees.

Third-party punishment and normative conformity

Third-party punishment is often emphasized as a crucial mechanism for maintaining social norms, particularly when the costs of norm compliance may otherwise

¹⁶ Most of the existing work on chimpanzee social learning has focused on material culture (e.g., tool-use behaviours), though there has been work on the social learning of arbitrary conventional behaviours (e.g., Bonnie et al. 2007; Boesch 2012; van Leeuwen et al. 2014). There is much less work on social learning and emotion/affect. There is evidence for *emotional contagion* in chimpanzees: the tendency for emotional states like fear, agitation, etc. to spread from one individual to others nearby via automatic state matching (see Campbell and de Waal 2014, and references therein). There is also evidence that agonistic behaviour can spread through a group of chimpanzees, particularly in response to hearing vocalizations associated with agonistic emotions (Videan et al. 2005). However, currently, there is only suggestive evidence that affective dispositions and emotion elicitors are the sorts of things that can be socially transmitted (see Gruber and Sievers 2019).

incentivize defection. Schlingloff and Moore (2017) also argue that evidence of third-party punishment is necessary in order to distinguish instances where the behaviour of individuals can be described as conforming to or enforcing a social norm, but where no norm is actually present, from cases where the behaviour is in fact normatively motivated. The idea is that second-party punishment (e.g., retaliation by a victim of aggression towards the aggressor), though also important for the maintenance of norms, does not, by itself, establish the existence of a social norm, since it could be driven purely by personal motives and not by recognition that a norm has been violated. As I noted earlier, third-party intervention or protest, by itself, doesn't actually suffice to rule out mere personal preference maximization, but it might still be the case that third-party punishment is a necessary, but not sufficient, piece of the evidential puzzle for normativity.

Studies of third-party punishment in chimpanzees have admittedly produced mixed results. Field researchers have reported numerous alleged instances of third-party punishment in wild chimpanzees (Goodall 1986; Nishida et al. 1995; Townsend et al. 2007), as have observational studies of captive chimpanzee communities (de Waal 1982, 1989; Rudolf von Rohr et al. 2011, 2012). However, critics have claimed that third-party punishment is rare, if non-existent in chimpanzees. One experimental study (Riedl et al. 2012) gave captive chimpanzees the opportunity to punish a chimpanzee they observed stealing food from another, by pulling a rope to have the food taken away from the thief. Even when the participant was dominant to the thief and the victim was close kin, chimpanzees almost never took the opportunity to punish thieves, but did routinely retaliate against thieves who stole from them in second-party versions of the same task. The authors conclude: "chimpanzee punishment appears confined to retaliation against personal harm when the punisher is in a position of dominance: chimpanzee punishment is of the 'might makes right' variety" (Riedl et al. 2012, p14826). The same authors are also sceptical about cases of alleged policing behaviour by dominants (e.g., Rudolf von Rohr et al. 2012), arguing that policing behaviour by high-ranking individuals may merely reflect the personal preferences and interests of the policer, rather than enforcement of an internalized norm. For instance, dominants may have a vested interest in reducing conflict in their communities, since that may make it easier to maintain the existing rank hierarchy. Intervening in conflicts might also be a good way to demonstrate dominance. Hence, putative third-party interventions to break up fights on the part of dominants may simply be the product of self-interest. As Schmidt and Tomasello (2016, pE6728) put it: "when there is enforcement against non-co-operators or freeloaders, it is done not for selfish motives—such as obtaining the food for oneself or maintaining dominance—but rather for the good of the cooperative group, ultimately preserving shared group norms". All of this has led a number of researchers, including Tomasello and colleagues, and Schlingloff and Moore, to argue that chimpanzees fail to demonstrate a necessary indicator of the presence of social norms.

There are (at least) four reasons, however, to resist such a sceptical conclusion (see also, Rudolf von Rohr et al. 2011). First, as Suchak et al. (2016) point out, aside from the fact that the results stand in stark contrast to reports of third-party punishment in wild chimpanzees, studies like the Riedl et al. (2012) study are unlikely to

elicit the full range of social enforcement mechanisms that may exist in chimpanzee communities. As is the case with humans, chimpanzee punishment of norm violations need not be direct and immediate, but may include things like social shunning and non-cooperation that take place over extended periods and involve all sorts of subtleties and broader social context that are difficult to build into experimental setups like the one used by Riedl et al., which involved one-time interactions between individuals, out of the normal social context, and required punishers to act immediately in a highly constrained and artificial way. Such simple interactions involving food may also not be a particularly good place to look for third-party punishment, since it might be that the relevant communities tend not to punish, or have particularly strong norms against, theft of food as much as other potential social infractions.

Second, there is something a little bit perverse in inferences to the absence of social norms from the *apparent* rarity of third-party punishment, since that may simply reflect a situation where operative norms are, in fact, being closely followed (and, again, much hangs on the actual content of these norms). Punishment may only be widespread when there is a significant chance of norms breaking down. Certainly, in humans, the *threat* of punishment is often as effective in maintaining conformity to operant norms than actual punishment itself. Remember also that chimpanzee groups are fairly small. In humans, the amount of third-party versus second-party punishment that takes place appears to vary with group size (Marlowe 2009). Third-party punishment becomes important as social groups become larger and repeated interactions between individuals become less frequent as a result, making cheating harder to detect and easier to get away with. In smaller groups, third-party punishment is less important, since second-party shunning of non-cooperators may be enough to maintain the social order. Moreover, which norms are subject to third-party punishment and to what extent seems to be itself determined by social norms governing punishment. One recent experimental study of punishment in response to insults from a stranger found humans behaving much like Riedl et al.'s chimpanzees: becoming angry and behaving punitively as second parties, but not as third parties (Pedersen et al. 2018). Some human egalitarian foraging societies, such as the Hadza, exhibit very little third-party punishment, yet still have social norms about things like incest and infidelity (Marlowe 2009). Other societies have norms mandating punishment of norm violations to the extent that non-punishers may themselves be subject to (higher-order) punishment. This seems to be because, as noted above, dispositions to punish are themselves socially transmitted (Salali et al. 2015), including what gets punished and to what degree.

Third, punishment isn't the only thing that can motivate compliance with social norms. Conforming with the social norms of one's group may also be adaptive, insofar as this makes one's social environment more predictable (Colombo 2014). If others conform to these norms and tend to act as if you will, too, then one can reduce uncertainty about others' behaviour by also conforming, since disrupting others' social environment will tend to make their behaviour less predictable. Theriault et al. (forthcoming) develop such an account of norm compliance based on a predictive-processing model of the brain, which assumes that prediction error imposes significant metabolic costs. Given that it is vital to reproductive fitness that the brain regulates the body's activities and interactions with the environment (including

social environment) in a metabolically efficient way, the brain should therefore pursue strategies to minimize prediction error, and one such strategy is plausibly to conform to the norms in one's environment, since that will help to make the behaviour of others more predictable. Though this may make more sense for some norms than others, it does suggest that, even if third-party punishment is rare in chimpanzees, that needn't imply they lack mechanisms for maintaining social norms.

Fourth, contrary to the claims of Schmidt and Tomasello quoted above, when punishment does take place, the motives of punishers do not have to be entirely pure: punitive behaviour can be both self-interested *and* normatively motivated. As I argued in the previous section, it may be due to the personal preferences of influential individuals in a group that some norms initially get off the ground. A high-ranking individual decides to behave punitively towards others that do something the individual wants to discourage. Bystanders witness this, and are similarly discouraged from that behaviour. Some may also copy the high-ranking individual and start to behave punitively towards those they see performing the sanctioned behaviour. A social norm would then be born, but one that was originally sparked by the personal preferences of the original influential individual. In human communities, prevailing norms frequently align with the interests of some high-ranking individuals in the community. It is, therefore, clearly far too much to expect of chimpanzees that punitive behaviours must always reflect "the good of the cooperative group".

It seems, then, that while third-party punishment is, indeed, an important piece of the evidential puzzle for chimpanzee normativity, and much further work needs to be done to reveal the nature and extent of punishment in chimpanzee communities, the current lack of significant direct experimental evidence for extensive third-party punishment in chimpanzees shouldn't be taken as strong evidence *against* chimpanzee normativity.

Another, closely related, objection to this one relating to third-party punishment concerns the apparent absence of so-called "normative conformity" in chimpanzees (Schmidt and Rakoczy 2019). Normative conformity isn't just a tendency to copy the behaviour of the majority (sometimes referred to as "informational conformity"), but a felt need to be like them, and to behave punitively towards those that do not conform. It is a drive to do what everyone else is doing, not for instrumental reasons, but because of a feeling that one *should* be like others. The presence of an audience thus becomes a key driver of behaviour. Audience-effects do appear much less pronounced in chimpanzee behaviour than in human behaviour (e.g., Nettle et al. 2013). Moreover, in distinct contrast to humans, to date, there have been no reports of chimpanzees punishing others merely for failing to conform to the group (Gruber et al. 2015)—e.g., immigrant females being punished for failing to switch their nut-cracking technique to the majority technique of their new group (Luncz et al 2018).

In my view, all this shows is that chimpanzees may be less group-minded and focused on group identity than human beings. It does not show that there is no normative capacity whatsoever. There may still be social norms governing, say, the treatment of infants, and punishment for breaking those norms, even if chimpanzees lack more general norms of group conformity. The just-so story told in the previous section provides one possible account of how norms governing specific social interactions might emerge, via selective social learning (including informational

conformity), without chimpanzees having to be as interested as humans appear to be in conformity for its own sake.

Conclusion

Clearly, there remain many open questions about the nature and extent of the normative capacities of chimpanzees. For instance: how is it that chimpanzees acquire norms? Do they have a domain-specific norm system, as proponents of the cognitive-evolutionary approach have speculated for humans, or do they rely on more domain-general processes? Exactly how, and when, do chimpanzees engage in third-party enforcement of norms? How much cultural variation is there in the norms of different chimpanzee communities? And so on.

However, these sorts of open questions shouldn't distract from the fact that there is strong *prima facie* evidence for social norms and normative evaluation in chimpanzees, and, as I have tried to show in this paper, the main theoretical objections to chimpanzee normativity are not at all compelling. The sceptical view of non-human normativity may still turn out to be correct, but, at best, that view is merely *consistent* with the existing evidence, not supported by it.

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