Citation: Schmidt, M. F. H., & Rakoczy, H. (forthcoming). On the uniqueness of human normative attitudes. In K. Bayertz & N. Roughley (Eds.), *The normative animal? On the anthropological significance of social, moral and linguistic norms.* Oxford University Press.

On the Uniqueness of Human Normative Attitudes

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Abstract

Humans are normative beings through and through. This capacity for normativity lies at the core of uniquely human forms of understanding and regulating socio-cultural group life. Plausibly, therefore, the hominin lineage evolved specialized social-cognitive, motivational, and affective abilities that helped create, transmit, preserve, and amend shared social practices. In turn, these shared normative attitudes and practices shaped subsequent human phylogeny, constituted new forms of group life, and hence structured human ontogeny, too. An essential aspect of human ontogeny is therefore its reciprocal nature regarding normativity. This chapter reviews recent evidence from developmental psychology suggesting that, from early on, human children take a normative attitude toward others' conduct in social interactions, and thus a collectivistic and impersonal perspective on norms. We discuss to what extent our closest living primate relatives lack normative attitudes and therefore live in a non-normative socio-causal world structured by individual preferences, power relationships, and regularities.

Chapter Keywords: social-cognitive development, social norms, normativity, child development, developmental psychology, moral development, morality, comparative psychology, primates

Introduction

The Descriptive and the Normative

All animal species, including humans, are subject to physical laws and evolutionary processes – things that are the case in a causal universe (i.e., descriptive facts). For instance, antelopes are threatened by predators, such as lions; humans cannot fly, but walk upright; and chimpanzees are mostly frugivorous and live in groups. But humans are special in that they are not just 'causal animals'. Humans also 'ought' to do certain things, such as standing in line at the grocery store, accepting Euros as currency in some countries, or refraining from hurting one another.[1] It is undeniable that humans (understand themselves to) have rights and obligations, and create their own 'laws' – social norms – to regulate and give meaning to socio-cultural life. In other words, humans are also 'normative animals', and this is an essential aspect of human existence that cannot simply be argued away (Sellars 1963). Not only that, many would contend that norms have played a key role in the evolution and maintenance of human cooperation, collaboration, social institutions, and culture (Boyd & Richerson 2005; Boyd & Richerson 2006; Chudek & Henrich 2011; Fehr & Fischbacher 2004a; Gürerk et al. 2006). Thus, shedding light on the ontogenetic and phylogenetic roots of human normativity is of vital interest not only for its own sake, but also regarding our understanding of major human 'achievements', such as social order and organization at small or large scale, cooperation and collaboration among genetically unrelated strangers, or upholding (but also changing) group-wide values. In this chapter, therefore, we will review empirical work on the ontogenetic emergence of normativity

[1] Note that according to some accounts, even phenomena at the individual or functional level are normative in some sense (e.g., entailing some sort of success or failure). Theorists discuss the normativity of meaning and intentional content (Kripke 1982; Wedgwood 2007; Wright 1986), such that, for instance, mental states are subject to rules of rationality and justification (e.g., beliefs 'aim' at truth and can be evaluated via epistemic norms as justified or unjustified, Engel 2011; Wallace 2011). For some, even biological functions are to some extent normative (Millikan 1990). Here, we focus on practical normativity (in particular, social norms) and its relevant deontic notions (e.g., 'ought', 'right', 'wrong', obligations, and entitlements).

in human children and on the phylogenetic question of whether there is evidence that our close living primate relatives (focusing on chimpanzees) have the capacity to understand normativity. We will argue that so far, there is no convincing evidence that non-human primates understand normativity or develop normative attitudes toward their conspecifics' actions. Hence, the proposal based on empirical grounds is that humans are, to date, the only normative species on Earth. Before looking at pertinent empirical work, it is important to lay out how we can construe normativity and delineate normative and non-normative phenomena in order to understand what it would take for a creature to be granted normative attitudes and thus be dubbed a genuine normative animal.

Key Aspects of Normativity

Most fundamentally, normativity requires capacities for intersubjectivity or *shared (collective) intentionality*, that is, the ability to share attention and mental states (e.g., intentions, goals) with conspecifics and thus to engage in shared intentional activities (Bratman 2009; Carassa & Colombetti 2014; Gilbert 1989; Meijers 2003; Schmid 2009; Schweikard & Schmid 2013; Searle 1995; Searle 2010; Sellars 1963; Tuomela 2007).[2] The standard definition of social norms[3] reveals why collective intentions are so central to normativity: social norms prescribe or proscribe certain actions 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 (Hechter & Opp 2001). That is, norms are collective phenomena that transcend individual perspectives, opinions, and non-collective mental states, such as individual beliefs, goals, and

[2] Scholars disagree, however, as to where to locate normativity, that is, whether shared intentional acts are inherently involve normativity (e.g., obligations and entitlements) or whether normativity is typically a result of shared intentional acts, potentially even instantiable only through language use (see Schmid 2009; Schweikard & Schmid 2013, for overviews of different positions). For the current purposes, however, the crucial point is simply that a creature needs to be able to share intentions in order to have or develop normative attitudes.

[3] In this chapter, we use the terms 'social norms' and 'norms' interchangeably and as umbrella terms that comprise all kinds of practical norms, which will be introduced further below.

desires – they give agents reasons to act in certain ways independent of their particular interests or desires (Searle 2001). 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. Importantly, norms set *standards* of what counts as appropriate behavior in a given situation (Popitz 2006). This means that there is some level of abstraction or detachment involved insofar as a normative creature – an individual, who is not isolated, but participating and sharing intentions in a group of agents – would be able to assess (not necessarily explicitly or reflectively) a concrete act in the here-and-now in light of some 'ideal' act, practice, or principle (Pettit 1993; Winch 1958).[4] Thus, we have the *possibility of error* – an action can be right or wrong according to some standard, and taking a normative attitude toward conspecifics' actions essentially means treating their actions as right or wrong (Brandom 1994; Brandom 1997; Wittgenstein 1953).[5] This also implies that the existence of alternative forms of behavior is central to normativity (in contrast to causal necessity where alternatives, such as choosing not to obey the law of gravity, are precluded). For some norms, often dubbed *conventional norms*, alternative forms of behavior would be equally possible and thus these norms are arbitrary (e.g., driving on the right vs. left side of the street); for other norms, however, alternative forms of behavior would physically be possible, but still be considered wrong (normatively speaking), due to the non-arbitrariness of these norms. For instance, prototypical *moral norms* pertain to issues of well-being, justice, and rights (Roughley this volume; Scanlon 1998; Turiel 1983), and so it is not an arbitrary choice whether or not to harm others. The same logic applies to norms of instrumental rationality: agents should take the

[4] See Roughley (this volume) for an account of moral normativity in which a creature would assess an act in light of an 'ideal' (emotional) attitude toward the concrete act observed.

[5] Of course, taking a normative attitude toward others' actions is itself prone to mistakes and thus subject to assessment, which might lead to an infinite regress. This is, however, an ontological issue about the nature of norms in general, and solutions have been proposed, for instance, by Brandom (1994) who opts for a third way between, what he calls, 'regulism' (norms as propositionally articulated rules) and 'regularism' (norms as mere non-normative behavioral regularities), the idea of norms and normative attitudes being implicit in social practices.

most efficient means to reach their ends (Korsgaard 1997), although other means are, of course, physically possible. Closely related to the idea of a standard is the feature of *generality*. Norms prescribe or prohibit certain acts not just episodically, but in general, for all relevant agents and in analogous circumstances (e.g., shopper A, shopper B, shopper C, etc. should stand in line not just in grocery store A, but also in grocery store B, grocery store C, etc.). And so a normative creature would be able to take an impersonal perspective, make an inductive leap, and realize that she is merely one agent among many equivalent agents. That is, norms apply to oneself just as they apply to others (Nagel 1986). Norms, such as standing in line, often apply in one context (e.g., at a grocery store), but not in another (e.g., on a dance floor); norms are hence usually *context-relative*. Perhaps the most distinctive feature of normativity is its 'oughtness' or *normative force*: we 'ought' to perform certain actions; we have normative expectations about what people (in our group or even beyond) ought to do in certain situations (Chudek & Henrich 2011; Tuomela 2007). Obviously, these expectations are not purely cognitive, but come with motivational force, not to describe the world, but to bring about certain states of affairs in the world – therefore it has been proposed that descriptive expectations have a mind-to-world direction of fit, whereas normative expectations have world-to-mind direction of fit, a contrast that applies to beliefs (mind-to-world) and desires (world-to-mind), too (Christen & Glock 2012; Schmid 2011; Searle 1983; Wellman & Miller 2008). Finally, people apply sanctions (e.g., express disapproval) when others violate norms, and thus they *enforce* norms – at least partly because they are committed to their group's norms and value them as ends in themselves (Münch 1987; Parsons 1951; M. J. Rossano 2012; Schmidt & Tomasello 2012; Schweikard this volume; Sripada & Stich 2006). Crucially, and this point is related to the possibility of error, the

generality, and the normative force of norms, agents enforce norms even as disinterested third-party observers (Fehr & Fischbacher 2004a; Fehr & Fischbacher 2004b).

Considering the above key aspects of normativity, we can state that a normative animal with normative attitudes would be a creature that demonstrates an understanding, at minimum, of the following: normative force, generality, and the possibility of error. It becomes clear that the mere following of norms (or imitation of actions) is inconclusive; for a creature might just like to act in similar ways as others or desire to avoid sanctions, not at all understanding that actions can be right or wrong according to some norms. Much better evidence for a creature taking a normative attitude toward others' actions is third-party norm enforcement, since it reveals that the creature understands actions as subject to assessment and evaluation in social interactions (Brandom 1994; Brandom 1997).

Normative Attitudes in Human Children

Much historical and more recent research on children's understanding of normativity (in particular, morality) focused on epistemic aspects, that is, on children's knowledge about morality and different types of norms – typically investigated via interview methods (e.g., asking for children's explicit judgment of norm transgressions in hypothetical stories). Jean Piaget (1932) and his follower Lawrence Kohlberg (1969) characterized children as developing in stage-like fashion from irredeemably egocentric creatures that focus on their idiosyncratic needs (and follow norms to avoid sanctions by authorities) to genuine moral creatures that reason autonomously and objectively. More recent work, initiated by Elliot Turiel and colleagues (Nucci & Turiel 1978; Smetana 1981; Turiel 1978; Turiel 1983) found that young children's knowledge about different social domains (i.e., moral, conventional, and personal) is much more profound than previously thought. This work showed that by 3 to 4 years of age, children reliably

differentiate between known conventional norms (that serve to sustain social order and organization, e.g., dress codes or classroom behavior) and known moral norms (i.e., issues of well-being, justice, and rights). For instance, children understand conventional transgressions as less severe, dependent on authority, narrow in scope, and less deserving of punishment than moral transgressions (for reviews, see Killen & Rutland, 2011; Nucci, Saxe, & Turiel, 2000; Smetana, 2006; Turiel, 2006; Turiel & Dahl, this volume). Here, however, we are interested in children's ability to exhibit normative attitudes in social interactions and thus whether they would engage in third-party norm enforcement when others violate norms in their presence. Theoretical reasons for this approach are, as explained above, that (i) normative expectations aim to fit the world to the mind, not to merely represent the world correctly, so active third-party norm enforcement is well-suited to get at a creature's normative expectations and understanding of the normative force of norms; (ii) the mere acting in accordance with norms leaves open whether a creature has normative attitudes toward actions or develops such attitudes in social interactions (Brandom 1994; Brandom 1997); (iii) an evolutionary approach calls for adequate comparisons of human children and non-human primates, and third-party interventions (which could also be non-linguistic) are a good candidate for this purpose (in contrast to, e.g., interview methods).

Enforcement of Conventional Norms

The first experimental investigation of young children's spontaneous third-party enforcement of norms was conducted by Rakoczy, Warneken, and Tomasello (2008). Young children learnt simple rules of solitary games; thus the focus was on conventional norms. More specifically, the norms in question can be called *constitutive norms* as they constitute new forms of behavior that did not exist prior to the norm. The formula used for creating these new social

facts (i.e., games) is "X counts as Y in context C" (Rawls 1955; Searle 1995; Searle 2010) – for instance, "This move counts as checkmate in the game of chess". And if these constitutive norms are generally accepted by a group of people in their practices, they have normative implications, such that participants of a certain practice ought to treat X as Y in C (Searle 1995; Searle 2010). Constitutive norms are typically contrasted with another type of conventional norm, that is, *regulative norms* (or coordinative norms) which regulate already existing behaviors (e.g., table manners regulate eating or traffic rules regulate driving; Searle 1995). In Rakoczy et al.'s (2008) study, 2- and 3-year-old children were given the possibility to spontaneously intervene against a puppet who committed violations of constitutive norms in the context of simple games. An adult demonstrated a game using normative language and new verbs (e.g., "This is how daxing is done."), and thereafter, the puppet announced that she was going to dax as well. However, she performed a different action (the adult had marked as a mistake before) which was a violation of the introduced constitutive norms. The 3-year-olds, and less explicitly also the 2-year-olds, criticized and reprimanded the puppet – often using generic normative language, such as "This is not how it is done. One must do it like this." – but they did not intervene when the puppet announced that she would show the child something (without referring to the game of daxing) and performed the very same action. Children's third-party enforcement of constitutive norms thus provided evidence that they did not just prefer one action to another, but that they took an impersonal perspective and understood the underlying normative force and generality of the norms, such that they applied them to other participants of the social practice in appropriate ways.

As mentioned earlier, another important aspect of norms (especially conventional norms) is their context-relativity. For instance, kicking a ball is totally fine in the context of a soccer

match, but not when playing tennis. Rakoczy, Brosche, Warneken, and Tomasello (2009) assessed whether young children understand that constitutive norms are binding in certain contexts only. In one context (at one table) a certain game action was correct, but not in another context (at another table). Three-year-olds (but not 2-year-olds) understood the context-specificity of these conventional (constitutive) norms, that is, they intervened against third-party game rule violations only when an action was inappropriate in a given context.

Another norm-governed activity is pretense (Currie 1998; Rakoczy 2008a). Participants of a pretend game take on certain roles and act as if, for instance, a banana were a telephone (i.e., object substitution), thus treat X as Y in context C analogous to other constitutive norms (Rakoczy 2008a). Rakoczy (2008b) tested children's normative understanding of pretense. Two- and 3-year-old children were shown simple pretend actions, for example, treating an object as a knife in a pretend game. Children protested when a puppet pretended to eat the object that was supposed to be a knife in the game context, but not when she pretended to eat an object that was designated as a carrot. A follow-up study found that 3-year-olds (but not 2-year-olds) are able to switch between different pretend identities in two game contexts. For instance, a yellow stick may count as a toothbrush in one game at one location and as a carrot in another game at a different location (Wyman et al. 2009). What these findings suggest is that at around 3 year of age children understand something about the context-relativity of conventional norms – that conventional activities are obligatory in some contexts but not in others.

Normative Learning

What mechanisms are at play when children learn norms? It is important to look closely at children's norm acquisition, for instance, to understand better how quickly children pick up norms and how rational, systematic, and selective they are in deciding on what to learn from

whom. In one study, 3- and 4-year-old children watched an adult and a peer model performing two alternative game-like actions (Rakoczy et al. 2010). Children at both ages were found to preferentially imitate the action performed by the adult. Importantly, children also understood the action presented by the adult as the prescribed way to do things: they protested when a puppet deviated from the action the adult had performed (i.e., the puppet performed the action the peer had demonstrated), but not when the puppet performed the adult's action. In another study, Rakoczy, Warneken, and Tomasello (2009) found that young children from age 4 selectively learn rule games from reliable over unreliable models and crucially, that their learning is not just based on preferences, but on normativity: they applied the acquired conventional norms to a third-party puppet who deviated from the action the reliable model had demonstrated.

The studies discussed so far involved some kind of explicit teaching and the use of normative language (e.g., "This is how we play the game of daxing") to make clear what the norms were. In everyday social interactions, however, children (and adults) frequently have to infer whether an act is normative from subtler, social-pragmatic cues. Therefore, Schmidt, Rakoczy, and Tomasello (2011) asked whether young children at age 3 would attribute normativity to game-like actions that are neither explicitly taught for their benefit nor introduced with normative language. When children incidentally observed an adult perform a game-like act with cues of intentionality and recognition (i.e., she immediately recognized some objects and acted as if she knew 'the rules of the game'), children nevertheless attributed normativity to the action and later protested against a third-party puppet that performed an alternative action. They did not infer normativity, however, when the adult performed the action as if she invented it on the spot (i.e., the adult incidentally found the objects in a room and looked at them curiously not recognizing them as something known), even if the adult invented the action in a pedagogical

context for the child's benefit. Schmidt et al.'s (2011) finding suggests that contrary to the recent "natural pedagogy" account (Csibra & Gergely 2009; Csibra & Gergely 2011; Gergely & Csibra 2006), young children do not mainly use ostensive cues (e.g., eye contact) to interpret a modelled action as generic. Rather, it seems that young children consider both the social-pragmatic context and the intentionality of the model when attributing normativity to an act or not. Since children in this study jumped to normative conclusions so quickly, it is even possible that their threshold for attributing normativity is very low early in ontogeny and that they have a propensity to 'promiscuously' impute normativity to others' intentional actions just as they impute purpose to objects and others' actions and minds more generally (Kelemen 1999; Kelemen 2004; Schmidt et al. 2011). This 'promiscuous normativity' might be akin to children's over-imitation, that is, the tendency to copy actions that are obviously causally unnecessary to reach a goal. In fact, recent research suggests that there is a normative component in children's over-imitation – that is, one reason why children over-imitate seems to be that they think that this is just the way things should be done. In one study, 3- and 5-year-old children learnt instrumental actions (necessary to achieve a goal) including unnecessary acts (irrelevant in terms of goal achievement) performed by an adult (Kenward 2012). When a third-party puppet omitted the unnecessary acts, children protested, even if the puppet reached the instrumental goal. In another study, researchers had 3- and 5-year-olds observe a model perform instrumental (necessary to produce some effect) and unnecessary acts (Keupp et al. 2013). In one condition, the model introduced the whole action sequence as a game (e.g., "daxing") thereby suggesting that it is subject to conventional norms. In a second condition, the model stressed the goal (i.e., the effect) of the action sequence (e.g., "ringing the bells") thereby focusing on instrumental – not conventional – aspects. Children protested more against a puppet who omitted unnecessary acts in the conventional condition than

in the instrumental condition, which suggests that they understood these irrelevant acts as binding, presumably because they are part of a conventional activity.

In sum, these findings suggest that young children are eager – sometimes over-eager – to identify actions that are subject to social norms. They learn norms via mere incidental observation of intentional actions without any normative language involved. And they learn norms selectively and rationally taking into account social-pragmatic cues, such that they prefer to learn from competent and reliable persons.

Further Contexts and Aspects of Normativity

Another important domain of normativity is artifact use. Artifacts are built for a purpose and there are appropriate ways to use them. With respect to this normative dimension of artifact use, Casler, Terziyan, and Greene (2009) found that 2- and 3-year-old children learnt familiar and new artifact functions and then protested when a third-party puppet deviated from the demonstrated appropriate way to use the artifacts. Language use is of course subject to normativity, too. One can make errors in describing the world, or in acting on the world as prescribed. Rakoczy and Tomasello (2009) found evidence that 3-year-olds understand that language (i.e., speech acts) has different 'directions of fit' (Searle 1983) and can thus be used in correctly or incorrectly: for instance, assertions describe the world (mind-to-world direction of fit) while imperatives are used to change the world by getting someone to do something (world-to-mind direction of fit). Accordingly, 3-year-olds considered the underlying normative structure of assertions and imperatives and corrected a commentator who asserted that an actor was performing a certain action (although that was not the case), but they protested against the actor, if she was not doing what the commentator told her to do using imperatives. In a follow-up study, 4-year-olds were found to understand the normative structure of future-directed speech

acts (Lohse et al. 2014): that is, they recognized that a speaker made a mistake when her prediction ("A will do X") would not come true, but that an actor made a mistake when she did not follow an imperative that had been given earlier by a speaker.

Another interesting context in which children can demonstrate their understanding of normativity is the autonomous emergence of norms without any interference of authorities. Many norms – in particular conventional norms – are introduced or socially constructed among equivalent participants of a social practice (Piaget 1932). A recent study by Göckeritz, Schmidt, and Tomasello (2014) looked at children's spontaneous norm construction without any adult interference in an instrumental task with interdependent roles: triads of 5-year-old children had to work together on an apparatus in order to achieve a common goal (obtain some rewards). Children created their own norms for coordination (akin to regulative norms introduced above), and they transmitted these norms as objective to novice peers (i.e., using generic normative language, e.g., "One should do it like this!").

Enforcement of Moral Norms and Rights

Perhaps the most prominent type of norm is moral norms. As explained before, prototypical moral norms are about things like people's welfare, justice, and rights (Roughley this volume; Scanlon 1998; Turiel 1983), and thus often about the prohibition to cause some form of harm without reason. Moral norms are considered important for the maintenance of human cooperation, because they are a means to suppress immediate self-interest (Joyce 2006; Krebs 2008; Sripada 2005). Typically, the violation of moral norms is a serious issue (Turiel 1983), and unaffected bystanders show strong emotional reactions (Nichols 2004), so one might say that moral norms carry more normative weight than other norms (Rossano 2012).

Recent work has found that young children's enforcement of norms is not confined to conventional activities or instrumental acts. Three-year-old children also protest and reprimand violations of moral norms, for example, against harming others by destroying or throwing away their property (Rossano et al. 2011; Vaish et al. 2011). An important aspect of moral norms (in particular those against harming others) is that they are usually understood as being wide in scope and hence applicable to basically all rational agents (Korsgaard 1996; Scanlon 1998; Turiel 1983). However, conventional norms (e.g., constitutive norms that govern games) are narrow in scope and thus applicable only to those agreed on them, be it voluntarily or just indirectly by becoming a member of a social group (Diesendruck & Markson 2011; Kalish 2005; Searle 1995). How to best construe the distinction of moral and conventional norms is a highly debated topic. Social domain theorists have argued, backed by an enormous body of research, that children (and adults) make judgments in, and navigate through, conceptually distinct knowledge domains of morality and convention (for reviews, see Killen & Rutland 2011; Nucci, Saxe, & Turiel 2000; Smetana 2006; Turiel 2006; Turiel & Dahl this volume). Others have questioned the validity of this distinction, for instance, because of cross-cultural variation as to what counts as 'conventional' or 'moral' (Shweder et al. 1987), due to the specific content used to study responses to transgressions (e.g., harmful actions that are common in school contexts; Kelly, Stich, Haley, Eng, & Fessler, 2007), or because they argue for a distinction that is based on differential emotional involvement, such that some transgressions elicit strong feelings (e.g., norms prohibiting harm, but also disgusting actions) while others come with less emotional involvement (Haidt et al. 1993; Haidt 2012; Nichols 2002; Nichols 2004). Irrespective of this debate, it is evident that prototypical moral and conventional norms are likely to be considered different at least regarding some dimensions. In a recent study, Schmidt, Rakoczy, and

Tomasello (2012) investigated how young children understand the scope and normative force of paradigmatic moral and conventional norms. Three-year-old children modulated their norm enforcement according to the type of norm and the group membership of the transgressor: for moral norm violations (i.e., destroying another's property without any obvious reason), they protested equally against ingroup and outgroup perpetrators, but for conventional norm violations (constitutive norms governing simple rule games), they protested more against ingroup members versus outgroup individuals, which suggests that children recognized that conventional norms are limited in scope to members of their own group and that group members can be expected to respect them.

The studies reported so far focused on norms as agents' obligations to perform certain acts. People, however, not only have obligations, but also rights or entitlements to act in certain ways (Helwig 1997; Killen & Smetana 2006) – and these rights are mutually recognized and supported or granted by the group or institutions (Feinberg 1980; Searle 2010). Entitlements are special normative phenomena in that they are inherently associated with obligations by others. Entitlements thus create normative constraints on others' conduct (Hohfeld 1913; Hohfeld 1917; Rainbolt 1993; Searle 2010). For instance, when a right-holder is entitled to perform some action, others are obligated not to interfere with the right-holder's entitlement (to perform that action). Young children's understanding of entitlements was investigated in different contexts in a recent study (Schmidt et al. 2013). Three-year-olds defended a right-holder's entitlements (e.g., to use a toy) against a second party who threatened the right-holder's entitlements – they protested against the second party and, for example, gave the right-holder the toy back. Interestingly, children even enforced second-order entitlements, for instance regarding ownership where only an owner is entitled to entitle others to use her property.

Taken together, the research reviewed suggests that young children develop normative attitudes toward a variety of different acts in different contexts. They enforce social norms as unaffected third parties suggesting that they take an impersonal perspective regarding norms and understand something about the normative force and generality of norms. Importantly, from early on they enforce norms in context-relative ways and take into account different social-pragmatic cues when deciding whether others' actions fall under normative assessment or not. Hence, early in ontogeny human beings start developing into normative beings and care about upholding shared standards suggesting some attachment to their cultural group beyond strategic motives (M. J. Rossano 2012; Schmidt & Tomasello 2012; Schweikard this volume).

Normative Attitudes in our Close(st) Living Primate Relatives?

Given the key aspects of normativity (normative force, generality) outlined above and the argument put forward earlier that 'norm' following or imitation are insufficient candidates for indicating the existence of normative attitudes, the natural starting point for hints of normative attitudes in our living primate relatives (in particular chimpanzees, but also monkey species) would be social interactions in which non-human primates have the opportunity to intervene even though they are unaffected third-party bystanders.

One phenomenon that deserves closer inspection is conflict management in non-human primates. When conflicts in social groups of macaques or chimpanzees occur, individuals – who are *prima facie* not directly involved – sometimes 'police' or intervene in fights, potentially with the evolutionary function to stabilize group life and perhaps also individual fitness (Flack, de Waal, et al. 2005; Flack et al. 2006; Flack, Krakauer, et al. 2005; Rudolf von Rohr et al. 2012). Regarding macaques, it has been suggested that not only impartial interventions (which are relatively rare), but also partial interventions (agonistic support of non-kin subordinates) should

be considered as policing in the broad sense, since they are not only beneficial to the individual, but also to the group, leading to fewer group conflicts (Beisner & McCowan 2013) – thus, it is an open question what role impartial interventions play that occur rather infrequently. Furthermore, it is mainly high-ranking animals that intervene in third-party ways (at low cost as retaliation is unlikely given their power), which creates doubt as to the possibility that these interventions are accompanied by psychological attitudes that are of interest for normativity. Regarding chimpanzees, policing behavior is rare and performed by dominant individuals, too (Rudolf von Rohr et al. 2012). Thus, more generally, it is unclear whether high-rank individuals intervene because they are afraid of losing their dominant position or because they see an opportunity to demonstrate their power or achieve mating benefits. Moreover, without experimental control, it is hard to tease apart normative attitudes and simple dislike. It is important to show that individuals intervene in third-party ways not only because they dislike an act (which might be one reason), but because the act is 'wrong' (according to some norm). There is, however, an experimentally controlled study on impartial third-party interventions (i.e., punishment) in chimpanzees. Riedl, Jensen, Call, and Tomasello (2012) gave individuals the opportunity to punish a 'thief' who stole some food either from themselves (second-party theft, self-interest involved) or from a third-party victim (third-party theft, no self-interest involved). Punishment consisted in pulling a rope to release a trapdoor, so that the thief lost the food. Dominant individuals punished the thief, but only when they were affected (second-party theft; see Jensen, Call, & Tomasello, 2007, for similar findings), and they showed more 'anger' (e.g., threats and displays) toward thieves in cases of second-party versus third-party theft. This suggests that (dominant) chimpanzees do not exhibit normative attitudes when they are harmed in such

contexts, but rather negative attitudes like anger or frustration based on preferences and the non-fulfillment of individual goals.

Another important context to explore is social learning. Chimpanzees have behavioral traditions and thus culture, broadly speaking, as these traditions vary between different regions which do not necessarily vary in their ecology (Luncz & Boesch 2014; Luncz et al. 2012; Price et al. 2009; Whiten et al. 1999; Whiten et al. 2007; Whiten et al. 2005). So there is evidence for the transmission and persistence of certain behaviors in chimpanzees, but it is disputed whether this amounts to social learning or can be explained by individual learning mechanisms or genetic differences between groups of chimpanzees (Langergraber et al. 2011; Tennie et al. 2009). A recent study suggests that stable between-group differences are at least partly a result of chimpanzees possessing a bias to copy dominants (Kendal et al. in press). As explained earlier, such copying behaviors are inconclusive as to whether normative attitudes are in play – more conclusive processes of social control and third-party sanctioning have not been documented yet.

A final natural context in which normative attitudes might arise is resource distributions, in particular, if individuals understand such a context as a social situation in which it is not only of relevance what "I get", but what "I get" as compared with what others get. Thus, a sense of fairness or equality (in terms of equal treatment) might be involved (Feinberg 1974; Rawls 1971; Sen 1992). Recent research has found that humans develop a sense of fairness early in ontogeny during the second year of life (Geraci & Surian 2011; Schmidt & Sommerville 2011; Sloane et al. 2012; Sommerville et al. 2013) – infants expect resources to be allocated equally among recipients and these fairness expectations are interrelated with infants' own tendency to share goods altruistically (Schmidt & Sommerville 2011). Sarah Brosnan and colleagues studied inequality aversion in capuchin monkeys and chimpanzees using a paradigm in which two

individuals could exhibit equivalent effort (handing over a token to an experimenter) for receiving a reward (Brosnan & de Waal 2003; Brosnan et al. 2005; Brosnan et al. 2010). However, one individual received a reward of high value (e.g., a grape) for exchanging the token, while the target individual would receive a reward of low value (e.g., a carrot or cucumber) for the token. The question was whether the target individual would refuse to take the low-value food. These studies found mixed results, with monkeys and male (but not female) chimpanzees refusing unequal 'offers' (Brosnan & de Waal 2003; Brosnan et al. 2010), and with between-group differences in chimpanzees as to whether they reject low-quality food at all (Brosnan et al. 2005). Bräuer, Call, and Tomasello (2009) tested chimpanzees, bonobos, and orangutans in the same token-exchange paradigm, but added an important control condition in which the high-quality food was merely present (but nobody received it), thus controlling for the possibility that individuals just expect to get better food rather than making social comparisons. The authors found that apes did not reject unequal offers when their partner had received better food – the small group of bonobos refused unequal offers when their partner was given high-quality food, but this effect was not statistically reliable. In sum, these mixed findings do not allow for drawing conclusions regarding whether chimpanzees or monkeys show inequality aversion (see also Bräuer & Hanus 2012). It is important to note that even if there were clear evidence for systematic social comparisons, this would not directly be indicative of normative attitudes, as rejections could be based on disappointment or frustration due to the violation of descriptive expectations ("I will get what she got") or non-fulfillment of desires, not normative expectations ("I should [deserve to] get what she got"). Nonetheless, more studies on refusal behaviors in social contexts are required as more conclusive findings might hint at important

phylogenetic intermediate steps toward normative attitudes (e.g., via simple forms of egocentric indignation or resentment, see Roughley, this volume).

Another important task that has been used comes from experimental economics: the ultimatum game. This is a two-player game in which a proposer makes an 'offer' on how to divide some resources (e.g., an offer of $20 out of $100), and a responder can either accept the offer (thus both get their share of the proposed spilt) or reject the offer (both get nothing). A creature sensitive to fairness would reject (highly) unequal offers, although this would be 'irrational' if the ideal model is a *Homo economicus* that maximizes his payoffs. Human adults typically reject offers below 20% (Camerer 2003) suggesting sensitivity to fairness. A behavioral version of the ultimatum game has been used to test chimpanzees (Jensen et al. 2007a; Proctor et al. 2013) and bonobos (Kaiser et al. 2012). In all studies, apes did not seem to be sensitive to fairness, as they almost never rejected unfair (non-zero) offers, but only zero offers – which suggests that apes do not focus on social aspects, but rather on whether they receive at least 'something'.

Together, these findings on policing, social learning, and fairness suggest that non-human primates are not (yet) creatures with normative attitudes, but rather 'socio-causal animals' with an intricate individualistic psychology that allows for pursuing individual goals and benefits and for regulating social behaviors and (power) relationships leading to stable forms of group living.

Concluding Remarks

We have started out by separating the normative from the descriptive. It is a (descriptive) fact that humans have peculiar 'oughts' that govern their conduct on a group level in impersonal ways and build the basis for human cooperation, social institutions, and culture. The research reported here suggests that it does not require a protracted process of socialization for human

children to develop normative attitudes toward others' and their own actions. Rather, from around 2 to 3 years of age, human children begin enforcing different kinds of norms when third parties violate them. And so they develop an understanding of the normative force and generality of norms treating relevant actions as subject to assessment and as tokens of a given type. It is remarkable that young children might have a tendency to overgeneralize adults' intentional actions and thus rapidly attribute normativity even in non-pedagogical contexts of incidental observation. Crucially, children also appreciate the context-relativity of many norms and apply them accordingly.

The apparent lack of normative attitudes in our close living primate relatives with respect to the three promising contexts reviewed (conflict management, social learning, fairness) is not to belittle the immense cognitive and social capabilities of apes and other social animals that all exhibit a rich group life. It might merely be that important prerequisites for normativity, in particular, shared intentionality and joint attention are not present in non-human primates, and that they are thus more like 'socio-causal animals' that focus on statistical regularities, fulfillment of their individual goals, and conspecifics' mental states (at minimum their perceptual states) in competitive, rather than cooperative, contexts (Call & Tomasello 2008; Hare & Tomasello 2004; Rakoczy & Schmidt 2013; Rakoczy et al. 2014; Rudolf von Rohr et al. 2011; Tomasello 2014). Certainly, definitional and conceptual issues of how to conceive of normativity or morality are always a challenge. Thus, an evolutionary perspective on morality with a focus on behaviors that may be adapted to animal group life (e.g., leading to evolutionary stable strategies) may identify moral systems in a broader, functional sense which is nevertheless informative for understanding proximate mechanisms and the genesis of human normativity (Alexander 1987; Baumard, André, & Sperber 2013; Burkart, Glock, & van Schaik this volume;

Flack & de Waal 2000; Kappeler this volume; Machery & Mallon 2010; van Schaik, Burkart, Jaeggi, & Rudolf von Rohr 2014).

The crucial adaptation of the hominin lineage which paved the way for developing normative attitudes might therefore have been a novel form of intersubjective sharing, namely abilities to share attention, intentions, and emotions based on a suite of special social-cognitive skills and cooperative motivations (Tomasello et al. 2005; Tomasello 2014). Whether these new social-cognitive and motivational capacities evolved in the context of cooperative breeding (unique among apes; Burkart, Hrdy, & Van Schaik 2009; Hrdy 2009), in the context of obligate collaborative foraging among interdependent hominins (Tomasello et al. 2012), or yet another context, is an open question (see Dubreuil 2010, 87-88, for an argument favoring foraging contexts due to a relatively later onset of cooperative breeding in hominins). Nevertheless, these new abilities of engaging in shared intentional activities (e.g., group hunting and ritualistic practices) plausibly allowed our hominin ancestors to overcome an individualistic perspective on the world (with descriptive expectations and, e.g., disappointment in the event of non-fulfillment) and to gradually take a more collectivistic perspective with formerly descriptive expectations transmuting into local normative expectations about each other's behavior (cf. Carassa & Colombetti 2014; Schmid 2009). This transformation might have been possible given that shared intentional actions as such might involve normativity (obligations and entitlements) or bring about normative consequences for the participants involved (Gilbert, 1989; Gilbert 2000; Schmid 2009; Steinfath this volume), and since the intersubjective sharing of intentions introduced the possibility to err in a 'public' social context: any participant of the joint activity could detect and realize 'anomalies' or non-attainment of shared goals (and causes thereof), and also the idea that all participants' acts are subject to reciprocal assessment. This process may

then have given rise to the emergence of group-wide normative attitudes leading to new forms of group living, and shaped subsequent human phylogeny and ontogeny in dialectical ways, thus contributing to the evolutionary success of the hominin lineage and to the gradual formation of human cultural and institutional reality.

References

Alexander, R.D., 1987. *The biology of moral systems.*, Hawthorne, N.Y.: Aldine de Gruyter.

Baumard, N., André, J.-B. & Sperber, D., 2013. A mutualistic approach to morality: The evolution of fairness by partner choice. *Behavioral and Brain Sciences*, 36(1), pp.59–78.

Beisner, B.A. & McCowan, B., 2013. Policing in nonhuman primates: Partial interventions serve a prosocial conflict management function in rhesus macaques. *PLoS ONE*, 8(10), p.e77369.

Boyd, R. & Richerson, P.J., 2006. Culture and the evolution of the human social instincts. In N. Enfield & S. C. Levinson, eds. *Roots of human sociality:Culture, cognition, and interaction*. Oxford: Berg, pp. 453–477.

Boyd, R. & Richerson, P.J., 2005. *The origin and evolution of cultures*, New York, NY: Oxford University Press.

Brandom, R.B., 1994. *Making it explicit*, Cambridge, Mass.: Harvard University Press.

Brandom, R.B., 1997. Replies. *Philosophy and Phenomenological Research*, 57(1), pp.189–204.

Bratman, M., 2009. Modest sociality and the distinctiveness of intention. *Philosophical Studies*, 144(1), pp.149 – 165.

Bräuer, J., Call, J. & Tomasello, M., 2009. Are apes inequity averse? New data on the token-exchange paradigm. *American Journal of Primatology*, 71(2), pp.175–181.

Bräuer, J. & Hanus, D., 2012. Fairness in Non-human Primates? *Social Justice Research*, 25(3), pp.256–276.

Brosnan, S.F. et al., 2010. Mechanisms underlying responses to inequitable outcomes in chimpanzees, Pan troglodytes. *Animal Behaviour*, 79(6), pp.1229–1237.

Brosnan, S.F., Schiff, H.C. & de Waal, F.B.M., 2005. Tolerance for inequity may increase with social closeness in chimpanzees. *Proceedings of the Royal Society B: Biological Sciences*, 272(1560), pp.253–258.

Brosnan, S.F. & de Waal, F.B.M., 2003. Monkeys reject unequal pay. *Nature*, 425(6955), pp.297–299.

Burkart, J.M., Hrdy, S.B. & Van Schaik, C.P., 2009. Cooperative breeding and human cognitive evolution. *Evolutionary Anthropology: Issues, News, and Reviews*, 18(5), pp.175–186.

Call, J. & Tomasello, M., 2008. Does the chimpanzee have a theory of mind? 30 years later. *Trends in Cognitive Sciences*, 12(5), pp.187–92.

Camerer, C.F., 2003. *Behavioral game theory: Experiments in strategic interaction*, Princeton: Princeton University Press.

Carassa, A. & Colombetti, M., 2014. Interpersonal responsibilities and communicative intentions. *Phenomenology and the Cognitive Sciences*, 13(1), pp.145–159.

Casler, K., Terziyan, T. & Greene, K., 2009. Toddlers view artifact function normatively. *Cognitive Development*, 24(3), pp.240–247.

Christen, M. & Glock, H.-J., 2012. The (Limited) Space for Justice in Social Animals. *Social Justice Research*, 25(3), pp.298–326.

Chudek, M. & Henrich, J., 2011. Culture–gene coevolution, norm-psychology and the emergence of human prosociality. *Trends in Cognitive Sciences*, 15(5), pp.218–226.

Csibra, G. & Gergely, G., 2009. Natural pedagogy. *Trends in Cognitive Sciences*, 13(4), pp.148–53.

Csibra, G. & Gergely, G., 2011. Natural pedagogy as evolutionary adaptation. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 366(1567), pp.1149 –1157.

Currie, G., 1998. Pretence, Pretending and Metarepresenting. *Mind & Language*, 13(1), pp.35–55.

Diesendruck, G. & Markson, L., 2011. Children's assumption of the conventionality of culture. *Child Development Perspectives*, 5(3), pp.189–195.

Dubreuil, B., 2010. *Human evolution and the origins of hierarchies: The state of nature*, New York, NY: Cambridge University Press.

Engel, P., 2011. Epistemic norms. In S. Bernecker & D. Pritchard, eds. *The Routledge Companion to Epistemology*. New York, NY: Routledge, pp. 47–57.

Fehr, E. & Fischbacher, U., 2004a. Social norms and human cooperation. *Trends in Cognitive Sciences*, 8(4), pp.185–90.

Fehr, E. & Fischbacher, U., 2004b. Third-party punishment and social norms. *Evolution and Human Behavior*, 25(2), pp.63–87.

Feinberg, J., 1974. Noncomparative Justice. *The Philosophical Review*, 83(3), pp.297–338.

Feinberg, J., 1980. *Rights, justice, and the bounds of liberty: Essays in social philosophy*, Princeton, N.J.: Princeton University Press.

Flack, J.C. et al., 2006. Policing stabilizes construction of social niches in primates. *Nature*, 439(7075), pp.426–429.

Flack, J.C., Krakauer, D.C. & de Waal, F.B.M., 2005. Robustness mechanisms in primate societies: a perturbation study. *Proceedings of the Royal Society B: Biological Sciences*, 272(1568), pp.1091–1099.

Flack, J.C. & de Waal, F.B.M., 2000. "Any animal whatever": Darwinian building blocks of morality in monkeys and apes. *Journal of Consciousness Studies*, 7(1-2), pp.1–29.

Flack, J.C., de Waal, F.B.M. & Krakauer, D.C., 2005. Social Structure, Robustness, and Policing Cost in a Cognitively Sophisticated Species. *The American Naturalist*, 165(5), pp.E126–E139.

Geraci, A. & Surian, L., 2011. The developmental roots of fairness: infants' reactions to equal and unequal distributions of resources. *Developmental Science*, 14(5), pp.1012–1020.

Gergely, G. & Csibra, G., 2006. Sylvia's recipe: The role of imitation and pedagogy in the transmission of cultural knowledge. In S. Levenson & N. Enfield, eds. *Roots of human sociality: Culture, cognition, and human interaction.* Oxford: Berg Publishers, pp. 229–255.

Gilbert, M., 1989. *On social facts*, London: Routledge.

Gilbert, M., 2000. *Sociality and responsibility: New essays in plural subject theory*, Lanham, Md.: Rowman & Littlefield.

Göckeritz, S., Schmidt, M.F.H. & Tomasello, M., 2014. Young children's creation and transmission of social norms. *Cognitive Development*, 30(0), pp.81–95.

Gürerk, Ö., Irlenbusch, B. & Rockenbach, B., 2006. The competitive advantage of sanctioning institutions. *Science*, 312(5770), pp.108–111.

Haidt, J., 2012. *The righteous mind: Why good people are divided by politics and religion*, New York, NY: Pantheon Books.

Haidt, J., Koller, S.H. & Dias, M.G., 1993. Affect, culture, and morality, or is it wrong to eat your dog? *Journal of Personality and Social Psychology*, 65(4), pp.613–28.

Hare, B. & Tomasello, M., 2004. Chimpanzees are more skilful in competitive than in cooperative cognitive tasks. *Animal Behaviour*, 68(3), pp.571–581.

Hechter, M. & Opp, K.D., 2001. *Social Norms*, New York: Russell Sage Foundation.

Helwig, C.C., 1997. The Role of Agent and Social Context in Judgments of Freedom of Speech and Religion. *Child Development*, 68(3), pp.484–495.

Hohfeld, W.N., 1917. Fundamental Legal Conceptions as Applied in Judicial Reasoning. *Yale Law Journal*, 26, pp.710–770.

Hohfeld, W.N., 1913. Some Fundamental Legal Conceptions as Applied in Judicial Reasoning. *Yale Law Journal*, 23, pp.16–59.

Hrdy, S.B., 2009. *Mothers and others: The evolutionary origins of mutual understanding*, Cambridge, MA: Harvard University Press.

Jensen, K., Call, J. & Tomasello, M., 2007a. Chimpanzees are rational maximizers in an ultimatum game. *Science*, 318(5847), pp.107–9.

Jensen, K., Call, J. & Tomasello, M., 2007b. Chimpanzees are vengeful but not spiteful. *Proc Natl Acad Sci U S A*, 104(32), pp.13046–50.

Joyce, R., 2006. *The evolution of morality*, Cambridge, MA: MIT Press.

Kaiser, I. et al., 2012. Theft in an ultimatum game: chimpanzees and bonobos are insensitive to unfairness. *Biology Letters*, 8(6), pp.942–945.

Kalish, C.W., 2005. Becoming status conscious: Children's appreciation of social reality. *Philosophical Explorations*, 8(3), pp.245–263.

Kelemen, D., 2004. Are children "intuitive theists"?: Reasoning about purpose and design in nature. *Psychological Science*, 15(5), pp.295–301.

Kelemen, D., 1999. The scope of teleological thinking in preschool children. *Cognition*, 70(3), pp.241–72.

Kelly, D. et al., 2007. Harm, affect, and the moral/conventional distinction. *Mind & Language*, 22(2), pp.117–131.

Kendal, R. et al., in press. Chimpanzees copy dominant and knowledgeable individuals: Implications for cultural diversity. *Evolution and Human Behavior*. Available at: http://www.sciencedirect.com/science/article/pii/S109051381400110X.

Kenward, B., 2012. Over-imitating preschoolers believe unnecessary actions are normative and enforce their performance by a third party. *Journal of Experimental Child Psychology*, 112(2), pp.195–207.

Keupp, S., Behne, T. & Rakoczy, H., 2013. Why do children overimitate? Normativity is crucial. *Journal of Experimental Child Psychology*, 116(2), pp.392–406.

Killen, M. & Rutland, A., 2011. *Children and social exclusion: Morality, prejudice, and group identity*, New York: Wiley-Blackwell.

Killen, M. & Smetana, J.G. eds., 2006. *Handbook of moral development*, Mahwah, NJ: Lawrence Erlbaum Associates.

Kohlberg, L., 1969. Stage and sequence: The cognitive-developmental approach to socialization. In D. A. Goslin, ed. *Handbook of socialization theory and research*. Chicago, IL: Rand McNally, pp. 347–480.

Korsgaard, C.M., 1997. The normativity of instrumental reason. In G. Cullity & B. Gaut, eds. *Ethics and practical reason*. Oxford: Clarenden Press, pp. 215–254.

Korsgaard, C.M., 1996. *The sources of normativity*, Cambridge: Cambridge University Press.

Krebs, D.L., 2008. Morality: An Evolutionary Account. *Perspectives on Psychological Science*, 3(3), pp.149 –172.

Kripke, S.A., 1982. *Wittgenstein on rules and private language. An elementary exposition.*, Cambridge, MA: Harvard University Press.

Langergraber, K.E. et al., 2011. Genetic and "cultural" similarity in wild chimpanzees. *Proceedings of the Royal Society B: Biological Sciences*, 278(1704), pp.408–416.

Lohse, K. et al., 2014. Young children understand the normative implications of future-directed speech acts. *PLOS ONE*, 9(1), p.e86958.

Luncz, L.V. & Boesch, C., 2014. Tradition over trend: Neighboring chimpanzee communities maintain differences in cultural behavior despite frequent immigration of adult females. *American Journal of Primatology*, 76(7), pp.649–657.

Luncz, L.V., Mundry, R. & Boesch, C., 2012. Evidence for Cultural Differences between Neighboring Chimpanzee Communities. *Current Biology*, 22(10), pp.922–926.

Machery, E. & Mallon, R., 2010. Evolution of morality. In J. M. Doris, ed. *The moral psychology handbook*. Oxford, UK: Oxford University Press.

Meijers, A.W.M., 2003. Can Collective Intentionality Be Individualized? *American Journal of Economics and Sociology*, 62(1), pp.167–183.

Millikan, R.G., 1990. Truth, rules, hoverflies, and the Kripke-Wittgenstein paradox. *Philosophical Review*, 99(3), pp.323–53.

Münch, R., 1987. Parsonian theory today: In search of a new synthesis. In A. Giddens & J. H. Turner, eds. *Social theory today*. Stanford, CA: Stanford University Press, pp. 116–155.

Nagel, T., 1986. *The view from nowhere*, New York, NY: Oxford University Press.

Nichols, S., 2002. Norms with feeling: towards a psychological account of moral judgment. *Cognition*, 84(2), pp.221–236.

Nichols, S., 2004. *Sentimental rules: On the natural foundations of moral judgment*, Oxford: Oxford University Press.

Nucci, L.P., Saxe, G.B. & Turiel, E., 2000. *Culture, thought, and development*, Mahwah, NJ: Erlbaum.

Nucci, L.P. & Turiel, E., 1978. Social interactions and the development of social concepts in preschool children. *Child Development*, 49(2), pp.400–407.

Parsons, T., 1951. *The social system*, London: Routledge & Kegan Paul.

Pettit, P., 1993. *The common mind: An essay on psychology, society, and politics.*, New York: Oxford University Press.

Piaget, J., 1932. *The moral judgment of the child*, London: Routledge Kegan Paul.

Popitz, H., 2006. *Soziale Normen* F. Pohlmann & W. Essbach, eds., Frankfurt am Main, Germany: Suhrkamp.

Price, E.E. et al., 2009. A potent effect of observational learning on chimpanzee tool construction. *Proceedings of the Royal Society B: Biological Sciences*, 276(1671), pp.3377–3383.

Proctor, D. et al., 2013. Chimpanzees play the ultimatum game. *Proceedings of the National Academy of Sciences*, 110(6), pp.2070–2075.

Rainbolt, G.W., 1993. Rights as Normative Constraints on Others. *Philosophy and Phenomenological Research*, 53(1), pp.93–111.

Rakoczy, H. et al., 2014. Apes are intuitive statisticians. *Cognition*, 131(1), pp.60–68.

Rakoczy, H. et al., 2010. Bigger knows better: Young children selectively learn rule games from adults rather than from peers. *British Journal of Developmental Psychology*, 28(4), pp.785–798.

Rakoczy, H., 2008a. Pretence as Individual and Collective Intentionality. *Mind & Language*, 23(5), pp.499–517.

Rakoczy, H., 2008b. Taking fiction seriously: young children understand the normative structure of joint pretence games. *Developmental Psychology*, 44(4), pp.1195–201.

Rakoczy, H., Brosche, N., et al., 2009. Young children's understanding of the context relativity of normative rules in conventional games. *British Journal of Developmental Psychology*, 27, pp.445–456.

Rakoczy, H. & Schmidt, M.F.H., 2013. The early ontogeny of social norms. *Child Development Perspectives*, 7(1), pp.17–21.

Rakoczy, H. & Tomasello, M., 2009. Done wrong or said wrong? Young children understand the normative directions of fit of different speech acts. *Cognition*, 113(2), pp.205–212.

Rakoczy, H., Warneken, F. & Tomasello, M., 2008. The sources of normativity: young children's awareness of the normative structure of games. *Developmental Psychology*, 44(3), pp.875–81.

Rakoczy, H., Warneken, F. & Tomasello, M., 2009. Young children's selective learning of rule games from reliable and unreliable models. *Cognitive Development*, 24, pp.61–69.

Rawls, J., 1971. *A theory of justice*, Cambridge, MA: Harvard University Press.

Rawls, J., 1955. Two Concepts of Rules. *The Philosophical Review*, 64(1), pp.3–32.

Riedl, K. et al., 2012. No third-party punishment in chimpanzees. *Proceedings of the National Academy of Sciences*. Available at: http://www.pnas.org/content/early/2012/08/22/1203179109.abstract.

Rossano, F., Rakoczy, H. & Tomasello, M., 2011. Young children's understanding of violations of property rights. *Cognition*, 121(2), pp.219–227.

Rossano, M.J., 2012. The essential role of ritual in the transmission and reinforcement of social norms. *Psychological Bulletin*, 138(3), pp.529–549.

Rudolf von Rohr, C. et al., 2012. Impartial third-party interventions in captive chimpanzees: A reflection of community concern. *PLoS ONE*, 7(3), p.e32494.

Rudolf von Rohr, C., Burkart, J.M. & van Schaik, C.P., 2011. Evolutionary precursors of social norms in chimpanzees: a new approach. *Biology and Philosophy*, 26(1), pp.1–30.

Scanlon, T.M., 1998. *What we owe to each other*, Cambridge, Mass.: Harvard University Press.

Van Schaik, C. et al., 2014. Morality as a biological adaptation – An evolutionary model based on the lifestyle of human foragers. In M. Christen et al., eds. *Empirically informed ethics: Morality between facts and norms*. Library of Ethics and Applied Philosophy. Springer International Publishing, pp. 65–84. Available at: http://dx.doi.org/10.1007/978-3-319-01369-5_4.

Schmid, H.B. ed., 2009. *Plural action. Essays in philosophy and social science.*, Dordrecht, Netherlands: Springer.

Schmid, H.B., 2011. The idiocy of strategic reasoning. Towards an account of consensual action. *Analyse & Kritik*, 33(1), pp.35–56.

Schmidt, M.F.H., Rakoczy, H. & Tomasello, M., 2011. Young children attribute normativity to novel actions without pedagogy or normative language. *Developmental Science*, 14(3), pp.530–539.

Schmidt, M.F.H., Rakoczy, H. & Tomasello, M., 2012. Young children enforce social norms selectively depending on the violator's group affiliation. *Cognition*, 124(3), pp.325–333.

Schmidt, M.F.H., Rakoczy, H. & Tomasello, M., 2013. Young children understand and defend the entitlements of others. *Journal of Experimental Child Psychology*, 116(4), pp.930–944.

Schmidt, M.F.H. & Sommerville, J.A., 2011. Fairness expectations and altruistic sharing in 15-month-old human infants. *PLoS ONE*, 6(10), p.e23223.

Schmidt, M.F.H. & Tomasello, M., 2012. Young children enforce social norms. *Current Directions in Psychological Science*, 21(4), pp.232–236.

Schweikard, D.P. & Schmid, H.B., 2013. Collective intentionality E. N. Zalta, ed. *The Stanford Encyclopedia of Philosophy (Summer 2013 Edition)*. Available at: <http://plato.stanford.edu/archives/sum2013/entries/collective-intentionality/>.

Searle, J.R., 1983. *Intentionality: An essay in the philosophy of mind*, Cambridge, England: Cambridge University Press.

Searle, J.R., 2010. *Making the social world*, Oxford: Oxford University Press.

Searle, J.R., 2001. *Rationality in action*, Cambridge, MA: MIT Press.

Searle, J.R., 1995. *The construction of social reality*, New York: Free Press.

Sellars, W., 1963. *Science, perception and reality*, London: Routledge & Kegan Paul.

Sen, A.K., 1992. *Inequality re-examined*, Oxford: Clarendon Press.

Shweder, R.A., Mahapatra, M. & Miller, J.G., 1987. Culture and moral development. In J. Kagan & S. Lamb, eds. *The emergence of morality in young children*. Chicago, IL: University of Chicago Press, pp. 1–83.

Sloane, S., Baillargeon, R. & Premack, D., 2012. Do infants have a sense of fairness? *Psychological Science*, 23(2), pp.196–204.

Smetana, J.G., 1981. Preschool children's conceptions of moral and social rules. *Child Development*, 52, pp.1333–1336.

Smetana, J.G., 2006. Social-cognitive domain theory. Consistencies and variations in children's moral and social judgments. In M. Killen & J. G. Smetana, eds. *Handbook of moral development*. Mahwah, NJ: Erlbaum, pp. 119–154.

Sommerville, J.A. et al., 2013. The development of fairness expectations and prosocial behavior in the second year of life. *Infancy*, 18(1), pp.40–66.

Sripada, C.S., 2005. Punishment and the strategic structure of moral systems. *Biology and Philosophy*, 20(4), pp.767–789.

Sripada, C.S. & Stich, S., 2006. A Framework for the Psychology of Norms. In P. Carruthers, S. Laurence, & S. P. Stich, eds. *The Innate Mind, Volume 2: Culture and Cognition*. Oxford University Press.

Tennie, C., Call, J. & Tomasello, M., 2009. Ratcheting up the ratchet: on the evolution of cumulative culture. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 364(1528), pp.2405–2415.

Tomasello, M., 2014. *A natural history of human thinking*, Cambridge, MA: Harvard University Press.

Tomasello, M. et al., 2012. Two key steps in the evolution of human cooperation: The interdependence hypothesis. *Current Anthropology*, 53(6), pp.673–692.

Tomasello, M. et al., 2005. Understanding and sharing intentions: the origins of cultural cognition. *Behavioral and Brain Sciences*, 28(5), pp.675–691.

Tuomela, R., 2007. *The philosophy of sociality*, New York, NY: Oxford University Press.

Turiel, E., 1978. Social regulations and domains of social concepts. In W. Damon, ed. *New directions for child development: Vol. 1. Social cognition*. San Francisco: Jossey-Bass, pp. 45–74.

Turiel, E., 2006. The development of morality. In W. Damon, R. M. Lerner, & N. Eisenberg, eds. *Handbook of child psychology, Vol. 3. Social, emotional, and personality development*. Hoboken, NJ: John Wiley & Sons, pp. 789–857.

Turiel, E., 1983. *The development of social knowledge: morality and convention*, Cambridge: Cambridge University Press.

Vaish, A., Missana, M. & Tomasello, M., 2011. Three-year-old children intervene in third-party moral transgressions. *British Journal of Developmental Psychology*, 29(1), pp.124–130.

Wallace, R.J., 2011. Konzeptionen der Normativität: Einige grundlegende philosophische Fragen. In R. Forst & K. Günther, eds. *Die Herausbildung normativer Ordnungen. Interdisziplinäre Perspektiven*. Frankfurt am Main, Germany: Campus Verlag, pp. 33–55.

Wedgwood, R., 2007. *The nature of normativity*, Oxford: Clarenden Press.

Wellman, H.M. & Miller, J.G., 2008. Including deontic reasoning as fundamental to theory of mind. *Human Development*, 51(2), pp.105–135.

Whiten, A. et al., 1999. Cultures in chimpanzees. *Nature*, 399(6737), pp.682–685.

Whiten, A. et al., 2007. Transmission of Multiple Traditions within and between Chimpanzee Groups. *Current Biology*, 17(12), pp.1038–1043.

Whiten, A., Horner, V. & de Waal, F.B.M., 2005. Conformity to cultural norms of tool use in chimpanzees. *Nature*, 437(7059), pp.737–740.

Winch, P., 1958. *The Idea of a Social Science and Its Relation to Philosophy*, London: Routledge & Kegan Paul.

Wittgenstein, L., 1953. *Philosophical investigations*, New York: Macmillan.

Wright, C., 1986. *Realism, meaning, and truth*, Oxford: Blackwell.

Wyman, E., Rakoczy, H. & Tomasello, M., 2009. Normativity and context in young children's pretend play. *Cognitive Development*, 24(2), pp.146–155.