The Social Side of Imitation

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ABSTRACT—*Children's imitation is a profoundly social process. Although previous developmental accounts of imitation have focused on imitation as a way to learn from others, the current article stresses that imitation goes far beyond this: It is often intimately tied to children's need to belong to the group and their drive to affiliate with those around them. Accordingly, imitation is chiefly determined by the social motivations and pressures children experience within both interpersonal and intergroup settings. This perspective resolves an apparent paradox in the empirical literature, explaining why children sometimes copy selectively and sometimes copy faithfully (so-called overimitation). It also situates the developmental and comparative study of imitation and cultural transmission within a broader social-psychological framework, uniting it conceptually with research on mimicry, conformity, normativity, and group membership.*

KEYWORDS—*imitation; group membership; social pressure*

Human culture is qualitatively different from that of any other species. Although other species—including chimpanzees, our closest living primate relatives—show some variation between groups in how they deal with the physical, and even the social, world (Whiten et al., 2001), this variation is dwarfed by the breadth and depth of the differences among human groups. Human groups differ not only in the cultural artifacts they produce but also in the social conventions they adhere to, the types of relationships they form, and the beliefs and attitudes they hold about the world.

To understand the creation and maintenance of human culture, we must understand how information is transmitted across generations through social learning and, in particular, through imitation. However, the empirical literature on early imitation presents an apparent paradox: Whereas children sometimes copy selectively (e.g., copying intentional actions, but not mistakes or failed attempts), at other times, they copy surprisingly faithfully. In fact, children sometimes copy so faithfully that they reproduce actions that are irrelevant to achieving the task at hand (so-called overimitation; Lyons, Young, & Keil, 2007).

This apparent paradox between selective and faithful imitation can be resolved only by considering the social side of imitation (see also Over & Carpenter, 2012a). Humans' dependence on their group members has created a series of social motivations and pressures that together exert a profound influence over imitation. This perspective contrasts sharply with many previous accounts of cultural transmission that have tended to neglect the social context in which imitation is produced (e.g., Lyons, Damrosch, Lin, Macris, & Keil, 2011; Whiten, McGuigan, Marshall-Pescini, & Hopper, 2009). Here, we briefly review these accounts and then provide an alternative, social-psychological account of imitation and cultural transmission.

Previous Accounts of Children's Imitation

Recent accounts of imitation have focused on explaining the existence of overimitation. Most of these explanations focus on children's need to learn about causally opaque cultural artifacts (i.e., objects whose causal properties are not immediately obvious). Whiten et al. (2009), for example, have argued that, due to the rich cultural environment in which children grow up, it benefits them to copy observed actions faithfully. The small percentage of these actions that prove irrelevant can be weeded out later through individual learning. Relatedly, Lyons et al. (2011) proposed that children have an automatic tendency to encode all of a model's intentionally produced, object-directed actions as causally necessary, and that this leads them to imitate faithfully even when it appears irrational to do so. According to Lyons et al. (2007), the automatic nature of the bias makes

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overimitation "unavoidable." Although these two theories could explain overimitation, they cannot adequately explain selective imitation (Over & Carpenter, 2012a). Selective imitation has been explained in terms of children's understanding of a model's goals and intentions (Bekkering, Wohlschläger, & Gattis, 2000; Tomasello, 1999). These accounts, however, cannot easily explain overimitation.

Whiten et al. (2009) attempted to explain the existence of both selective and faithful imitation by arguing that they seem to occur at different ages: Whereas infants copy selectively, older children and even adults copy faithfully. The empirical literature, however, is more complicated: Infants sometimes copy faithfully (Meltzoff, 1988; Nielsen, 2006) and older children (Bekkering et al., 2000) and even adults (Horowitz, 2003) copy selectively.

We argue that children's imitation cannot be explained by a single heuristic. Building on work demonstrating that imitation serves social as well as instrumental functions (e.g., Chartrand & Bargh, 1999; Nielsen, 2009; Užgiris, 1981), we argue that imitation can be understood only with reference to the social context in which it is produced. To understand why children copy in the ways they do, we must understand how social learning is tied to the need to belong to the group.

The Importance of the Group

Humans depend deeply on their group members (Baumeister & Leary, 1995; Brewer, 2007). Our need to belong and be part of the group is so basic that it is thought to be present early in development (e.g., Over & Carpenter, 2009a) and to underlie a number of other core motives (Fiske, 2010). This need explains our drive to affiliate with those around us and the pressure we feel to fit in and be like other members of our group. It also explains aspects of intergroup behavior, including why we identify with some groups and not others (Fiske, 2010).

A SOCIAL-PSYCHOLOGICAL PERSPECTIVE ON IMITATION

Social motivations and pressures produced by the need to belong are key to understanding imitation in children, and thus to explaining forms of culture that are unique to humans (Over & Carpenter, 2012a). In terms of motivation, it is first necessary to consider children's own goals in the situation (Carpenter, 2006; Nielsen, 2009; Užgiris, 1981). When children imitate an action, they may either have a goal to learn or one of various possible social goals. Although these goals can be held consciously, they do not have to be (Lakin & Chartrand, 2003), and they can be held either alone or in combination with each other. The relative strength of these goals and the combination in which they occur have a profound influence on what children copy.

Equally critical to understanding imitation are the social pressures that children experience within the imitative interaction. Social pressure to copy may either be exerted directly by the model and/or the social group more generally, or experienced by children without any explicit behavior on the part of those around them. These social motivations and pressures can occur at either an interpersonal or an intergroup level. Thus, children's identification with the model, and the group in general, is also critical to understanding imitation.

In discussing children's copying behavior in this way, we take a broader perspective on imitation than most, looking beyond action copying toward copying of opinions, attitudes, and social norms (thus linking imitation research with research on selective trust, conformity, normativity, and mimicry). In doing so, we explain the apparent paradox in children's copying behavior and go beyond it, providing insights into whom and when children copy, as well as what they copy.

Different Goals Underlying Imitation

Learning Goals

In some forms of imitation, children simply seek to learn new skills from observing those around them. When learning goals predominate, children care more about achieving a particular result than about their interaction or relationship with the model. This is, consequently, a relatively individualistic form of social learning (Carpenter & Call, 2009). We take children's tendency to copy intentional actions, but not mistakes and failed attempts (Carpenter, Akhtar, & Tomasello, 1998; Meltzoff, 1995) and causally efficient rather than inefficient actions (Brugger, Lariviere, Mumme, & Bushnell, 2007; Schulz, Hooppell, & Jenkins, 2008) as evidence for this motivation. Further support is provided by data suggesting that children are more likely to copy selectively in learning than in social contexts (Yu & Kushnir, 2011).

Although having a goal to learn from a model may typically result in selective copying, in some circumstances learning goals can lead to faithful imitation. The likelihood that children will copy a model's specific behaviors depends on the extent to which they trust their own judgment and abilities relative to those of the model (see Turner, 1991). For example, when children have reason to doubt their own ability to complete a task because they have previously struggled to perform a similar task, they are more likely to copy a model's action exactly (Williamson, Meltzoff, & Markman, 2008). Children's relative trust in a model (and thus the likelihood that they will copy the model) can also be influenced by the model's perceived competence and reliability (Koenig & Harris, 2005; Zmyj, Buttelmann, Carpenter, & Daum, 2010).

Social Goals

In other forms of imitation, children seek to make themselves more like the model, or the social group in general, without any attempt to learn a new skill. Perhaps the clearest example of this is when adults subconsciously mimic the mannerisms of their social partners (Chartrand & Bargh, 1999). However, imitation for purely social reasons is also seen in children and is typically characterized by faithful copying (Nielsen, Simcock, & Jenkins, 2008; Over & Carpenter, 2009b).

Social imitation of this type may, at times, be communicative (Bavelas, Black, Lemery, & Mullett, 1986). That is, children may copy another's behavior to convey social information to him or her or to those around them. In support of this hypothesis, there is evidence that some naturalistic imitative interactions serve communicative-affiliative functions in toddlers (Eckerman, Davis, & Didow, 1989; Nadel, 2002). Furthermore, 5-year-olds work to ensure that a model can see their imitation, thus suggesting that their imitation was produced *for* the model (Over & Carpenter, 2012b). This position gains further support from the finding that children imitate irrelevant actions more often when the individual who demonstrated them is present at the time of test (Nielsen & Blank, 2011).

There are many different messages that an imitator could communicate via imitation (and/or that a social partner could infer from being imitated). For example, in the case of empathic responding, imitating a social partner's facial expression may convey the message "I feel your pain" (Bavelas et al., 1986). In other settings, imitation may convey information about achievement or competition ("I can do that too") or relative status ("I admire you").

One of the most important messages that imitation may convey, however, is "I am like you" or, at a group level, "I am one of you" (Carpenter, 2006; Over & Carpenter, 2012a). Because there is a strong link between perceived similarity and liking, this message is closely related to affiliation (Chartrand & Bargh, 1999). Recent evidence suggests that children use imitation to affiliate with those around them: Children imitate a model more faithfully after being primed with social exclusion (i.e., after having been shown videos in which one shape is excluded from a group of other shapes; Over & Carpenter, 2009b). One interpretation of this finding is that children increase their imitation to communicate their similarity to the model and consequently reestablish their position within the group.

Although this type of imitation can be used for affiliative purposes, it can also be put to more Machiavellian ends. For instance, imitation can be used strategically to increase one's influence over another (Cialdini, 2001). Older children appear to use imitation in this strategic way: Ten-year-olds are more likely to imitate the actions of a peer when told that they will later need to persuade that peer to do something unpleasant (Thelen, Miller, Fehrenbach, Frautschi, & Fishbein, 1980). Further research shows the value of such strategies: Five- to 6-year-olds are more trusting of an experimenter who previously imitated them than an experimenter who previously made independent choices (Over, Carpenter, Spears, & Gattis, 2012a).

Learning and Social Goals

Some forms of imitation involve both learning and social goals. When both learning and social goals are present, a deeply social type of learning occurs. Probably the best example of this form of social learning involves learning cultural norms (Turner, 1991): how we in our group ought to behave. Suggestive evidence for this comes from the finding that preschoolers, and even infants, copy the actions of ingroup members (native speakers) more than those of the outgroup members (nonnative speakers; Buttelmann, Zmyj, Daum, & Carpenter, 2012; Kinzler, Corriveau, & Harris, 2011). Stronger evidence that children's imitative learning is sometimes normative comes from the finding that young children imitatively learn actions in such a deeply social way that when someone later performs the learned action differently, children go so far as to protest against the use of the different action and insist on the proper way of doing it (Rakoczy, Warneken, & Tomasello, 2008). Importantly, they do this selectively, protesting against violations of conventional norms by ingroup members, but not outgroup members (Schmidt, Rakoczy, & Tomasello, 2012).

Some norms are more explicitly social in that they involve the appropriate ways to treat people rather than objects. Hints of this are seen even in infancy, when children's responses toward a stranger are influenced by their mothers' reaction toward that individual (e.g., Fein, 1975). Later, children's behavior takes on a more normative quality, when children learn how particular individuals and groups ought to be treated.

Social Pressures

To fully understand children's imitation, we must look beyond children's own goals in the imitative situation and consider others' goals toward them. It is so important that children do things in the culturally prescribed manner that we often put pressure on them to imitate in a particular way. One situation in which a model may exert pressure on a child is teaching. Human teaching differs from teaching in other species in that it often involves sanctions when the learner performs incorrectly (e.g., Thornton & McAuliffe, 2006). Even cultures that appear to engage in relatively little explicit teaching impose sanctions on individuals who do not follow social rules appropriately, for example, by teasing them or reporting norm violations to third parties (Hewlett, Fouts, Boyette, & Hewlett, 2011).

Although social pressure can be exerted directly by the model and other group members through the use of sanctions, it can also be internally felt by individuals without any explicit behavior on the part of those around them (Turner, 1991). In adults, for example, the mere presence of an audience is often sufficient to increase conformist behavior. Similarly, when 4-year-olds were tested using a modified version of the Asch paradigm, they conformed to the majority's incorrect judgment in approximately 40% of trials. However, when children were allowed to give their responses in private rather than in public, conformity dropped to almost zero (Haun & Tomasello, 2011).

RESOLVING THE PARADOX

We have presented evidence demonstrating that imitation in children is a much more deeply social process than previously thought, and that this can explain seemingly paradoxical

findings in the developmental literature on imitation. Thus, when children have a goal to be like the model and/or experience strong social pressure to imitate, they tend to copy observed actions faithfully. However, when children simply seek to learn from the model, trust their own abilities, and experience little social pressure to match the behavior of those around them, they are more inclined to copy selectively.

DEVELOPMENT

When do the different motivations outlined above emerge in development? Unfortunately, there is relatively little research investigating the developmental path of social motivations and their relation to children's imitation (although see Nielsen, 2006). The perspective outlined here sets out clear directions for future research. It implies that developmental changes in how children understand the social context and their position within it exert a powerful influence over their own motivations within imitative situations, and thus over what they copy. For example, children's developing understanding of group membership, social norms, and how their own behavior will be perceived by others are key to explaining imitation.

THE BIGGER PICTURE

Imitation in Autism
Research has shown that, although children with autism may copy object-directed actions, they tend not to copy the specific style with which a model performs an action (Hobson & Hobson, 2008). This may be because children with autism lack a strong social motivation to be like others. This perspective is further supported by findings that children with autism are capable of imitating, but tend not to do so spontaneously (Carpenter, 2006). In addition, recent evidence suggests that individuals with autism may be less susceptible to social pressure: For example, they do not take the presence of an audience into account when deciding how much money to donate to charity (Izuma, Matsumoto, Camerer, & Adolphs, 2011).

Imitation in Nonhuman Primates
Our account suggests that relatively subtle differences in social motivation between humans and other primates may lie at the heart of explaining forms of culture that are unique to humans. Carpenter and Call (2009) have argued that the drive to be like others may be unique to humans. However, there are some hints that imitation in nonhuman primates may be more social than previously thought. Some capuchin monkey groups, for example, show social traditions in behaviors such as hand-sniffing and eye-gouging (Perry, 2011). Furthermore, capuchins are sensitive to being imitated, choosing to sit closer to and exchange more tokens with an experimenter who has imitated them than to an experimenter who has engaged in socially contingent, but nonimitative behavior (Paukner, Suomi, Visalberghi, & Ferrari,

2009). However, it is not yet clear whether subjects' responses in this study were motivated by affiliation, dominance, or some other factor (Call & Carpenter, 2009).

In contrast to research with human children, there is not yet any unambiguous evidence that nonhuman primates experience social pressure to imitate in particular ways. Chimpanzees do not appear to actively teach their offspring new skills (Tomasello, 1999). Furthermore, although behavioral traditions may spread through chimpanzee groups (Whiten, Horner, & Waal, 2005), there is not yet convincing evidence to suggest that chimpanzees feel social pressure to adopt techniques used by their group members.

CONCLUSIONS

Throughout this article, we have stressed the importance of viewing imitation through a social lens. We have argued that understanding the broader social context is key to explaining imitation, and that the social motivations and pressures children experience within imitative interactions exert a profound influence over what they copy. Viewing imitation in this way helps resolve the paradox of why children sometimes copy selectively and sometimes copy faithfully. Furthermore, it helps to explain why children copy some individuals over others, and why they are more likely to imitate in some situations than in others.

Situating imitation within this broad social-psychological framework also helps to explain the profound differences between culture in humans and in nonhuman primates. Relatively subtle differences in social motivation might be the key to explaining human-unique forms of culture. Furthermore, this account provides a bridge between developmental and comparative work on imitation and social-psychological work on mimicry, conformity, and normativity. In doing so, it also adds a new perspective to social psychology, outlining the developmental and evolutionary roots of social influence.

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