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Definitions and Developmental Processes in Research on Infant Morality

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Abstract

Key terms in research on moral development also exist in everyday language. Tafreshi and her colleagues (2014) propose that researchers should use terms in ways consistent with their usage by non-researchers. This commentary questions this claim, and argues for the importance of providing clear and explicit definitions of terms such as “morality” and “innate,” of showing caution when attributing evaluations and judgments to infants, and of considering developmental processes preceding and succeeding the abilities demonstrated using looking-time and related measures. Progress is unlikely to result from conceptual analysis alone. However, conceptual clarity will make it easier to see what theories agree and disagree about as well as how opposing claims can be tested empirically.

Keywords

moral development; looking time methodology; infancy

Say what you choose, so long as it does not prevent you from seeing the facts. (And when you see them there is a good deal that you will not say.)

Wittgenstein (1953, p. 37)

Key terms used by researchers on early moral development often exist in everyday language. Consequently, when researchers say “innate,” “morality,” or “antisocial,” these terms are subject to interpretations that may stray from the intended meaning. While “innate” probably means “typically present at birth” for most people, some researchers use it to mean “[not] gotten into the head by means of the extraction of information from the environment” (Bloom, 2012, p. 72). In their target article, Tafreshi, Thompson, and Racine (2014) argue that (1) researchers are responsible for using terms in a way consistent with the colloquial usage of these terms and (2) researchers using looking-time measures to support claims about infants’ early socio-moral abilities do not live up to this responsibility. Tafreshi and her colleagues focus their critique on two lines of looking-time research on false belief understanding (e.g. Onishi & Baillargeon, 2005) and infant socio-moral evaluations (e.g. Hamlin, Wynn, & Bloom, 2007; Hamlin & Wynn, 2011).

This is not the first time that researchers have cautioned against attributing advanced or adult-like abilities in infants (Allen & Bickhard, 2013; Aslin, 2007; Fischer & Bidell, 1991; Haith, 1998; Kagan, 2008). However, such a cautionary note seems particularly appropriate in reference to research on infant morality based on preferential looking and reaching paradigms. First, the indices used (looking and reaching) have limited face validity, i.e. they would not appear to the layperson as measuring the construct they purport to measure (Nevo, 1985. This is not to say that the indices necessarily lack *other* forms of validity.) Second, the construct under investigation (morality) is notoriously subject to varying interpretations among researchers and non-researchers (see below).

While I thus agree with one central tenet of the target article, I am less convinced that the conceptual analysis proposed by Tafreshi and her colleagues (2014) will bring us closer to understanding early moral or social development. Their solution to the problem of using everyday concepts in scientific discourse is to force researchers to follow common usage of terms: “If Hamlin and colleagues wish to apply an everyday sense of preference to the interpretation of looking time studies, it is worth considering how adults go about speaking about preferences” (Tafreshi et al., p. 23). I imagine that Hamlin and her colleagues (e.g. 2007) would simply respond that they do *not* wish to use the word “preference” in its everyday sense. Technical usage of everyday terms exist in most areas of research without seemingly causing much confusion. For instance, the word “resistance” is used in electronics without leading anyone to think that carbon resistors endorse a particular political ideology. (Not all proponents of conceptual analysis insist that scientific and everyday usage of terms coincide [Machado & Silva, 2007].) I am also not convinced that a conceptual analysis by itself can do much to resolve “enduring disagreement” about major issues, as proposed by Tafreshi and her colleagues (2014, p. 20). Rather, conceptual clarity serves to make researchers see theoretical differences more clearly and then determine which studies are needed to test the conflicting views.

This commentary builds on the target article by discussing an alternative yet critical approach to the attribution of morally relevant capacities to infants. I argue for the need to provide clearer definitions of key terms (whether or not those definitions align with non-scientific definitions), for caution before attributing complex abilities based on a limited set of dependent measures, and for consideration of developmental processes that precede and succeed the abilities in question.

Two Key Terms: Morality and Innateness

The starting point for any research inquiry is the posing of a question, for instance, “Do infants possess an innate moral sense?” In order to know how to answer that question, it is necessary to know what those words mean. This is not to say that researchers must adopt the definitions from everyday language use or from the *Oxford English Dictionary* (contrary to the view of Tafreshi and her colleagues [2014], and also to that of Greene [2007], who argues that those who study moral psychology do not need to define the realm of morality). However, if the researcher engaged in the inquiry does not state what the words “morality” or “innateness” refer to in the question posed, there would be no way of knowing what kind of evidence is needed to answer the question.

Psychologists have defined morality in a variety of ways. Each of these definitions is associated with certain theoretical assumptions. Some have defined morality as the capacity to follow virtually any type of norm endorsed in a society (Haidt, 2008; Kochanska & Aksan, 2006; Skinner, 1971). These researchers have typically proposed, implicitly or explicitly, that the processes leading to the acquisition of norms is relatively independent of the content of the norm. Others have defined morality entailing substantive issues such as others' rights and welfare, justice, or fairness (Gray, Young, & Waytz, 2012; Turiel, 1983a, 1983b, in press). These definitions are often associated with the idea that the interactions through which children develop moral concerns differ from the interactions through which children acquire concerns with social conventions or other norms (for a review, see Smetana, 2013).

Many nativist approaches to morality have endorsed a broad definition of a *moral sense* as the "tendency to see certain actions and individuals as right, good, and deserving of reward, and others as wrong, bad, and deserving of punishment" (Hamlin, 2013, p. 186; see also Wynn & Bloom, 2014). This moral sense is argued to be innate (at least partly). The definition raises two noteworthy questions. The first question is whether this moral sense is supposed to be tied to particular forms of transgressions, such as harming or helping/hindering others. Most of the research on infant evaluations of others' actions has relied of scenarios involving helping/hindering or fairness, yet the definition of moral sense is not limited to such scenarios (Geraci & Surian, 2011; Hamlin et al., 2007; Hamlin, Wynn, Bloom, & Mahajan, 2011; Hamlin & Wynn, 2011). The question is then whether the innate moral core is hypothesized to comprise additional moral concerns not yet investigated, such as the prohibition against harming others, or whether the hypothesized moral sense consists of multiple distinct tendencies, only some of which are proposed to be innate.

A second question regarding the nativist definition of a moral sense is whether infants' moral sense is to be applied to the child's own actions or whether it only is activated upon observing the actions of others. According to most views, morality pertains to one's own actions as well as that of others. A person who thinks that he or she is generally permitted to steal, but that no one else is, would seem to have a deficient moral sense by most definitions. Yet, there is currently no evidence that infants are evaluating their own transgressions negatively around or before the first birthday. Sign of negative reactions following own transgressions is usually not seen until around the second birthday or later (Barrett, Zahn-Waxler, & Cole, 1993). The seemingly late emergence of guilt and shame reactions is not due to the lack of opportunity. Infants engage in a large number of transgressions during the second year of life, and there is an increase in provoked *and unprovoked* aggressive incidents during the first half of the second year (Dahl, 2014a; Dunn, 1988; Hay, 2005; Kuczynski, Kochanska, Radke-Yarrow, & Ginius-Brown, 1987).

On the surface, the concept of "innateness" seems to have a more obvious definition ("present at birth") than the concept of morality. However, as noted by Tafreshi and her colleagues (2014), the term has been used differently among different researchers endorsing variants of nativist or core knowledge views. The above-mentioned definition by Bloom (2014) requires that the ability not be learned through the extraction of information from the environment for it to be innate; it does not need to be present at birth. Notably, this definition

of innateness does not distinguish between types of processes by which children develop knowledge through social experiences. In research on social and moral development, it has been common to distinguish between transmission models and construction models of how children acquire social knowledge (Damon, 1999; Piaget, 1932; Turiel, 1983b).

Transmission refers to children's internalization of norms held by authority figures, whereas construction involves the generation of novel forms of thought through interactions with the environment. It would seem that construction of forms of thought is not just "extraction of information," yet such construction also does fit well with a nativist approach since it involves development through distinct forms of interactions with the world.

Other researchers talk about core knowledge systems that are proposed to be constant across development (Spelke & Kinzler, 2007). Yet others suggest that concepts of innateness should be avoided altogether (Racine, 2013; Spencer et al., 2009). Rather than going as far as the latter writers, the purpose of the present discussion is to encourage those who use the concept of innateness to provide a definition of this term along with criteria for deciding whether some property is innate or not.

Attribution of Evaluations and Judgments to Infants

A main point in the article by Tafreshi and colleagues (2014) is that looking behavior does not license claims about evaluations, judgments, or understandings. They argue looking behavior can have a multitude of different meanings and that it is difficult or impossible to decide empirically what a specific act of looking means: "To ask the question of *what it means* for an infant to look at an object is to delve into the realm of philosophical inquiry" (Tafreshi et al., 2014, p. 16). By this, the authors mean that only an analysis of the term "looking" will tell us whether we can ever infer moral evaluations from looking behavior. The authors argue that "on the everyday usage of concepts, the act of looking in itself cannot tell us what looking means for the infant" (p. 17). In other words, their conceptual analysis lead the authors to conclude that looking can never tell anything about how an infant is evaluating a social situation.

There is no doubt that looking behavior can reflect different psychological states and serve different functions (Aslin, 2007). However, researchers are (almost) never left to interpret looking behavior (or other behavior) in isolation from the context in which it occurs and the other behaviors exhibited in the same or similar contexts. On the contrary, it is often possible to set up a context in which infants' looking behavior can be interpreted with a high level of confidence. Two compelling and well-known examples include infant anticipatory looking to a location where an event has previously taken place (Acredolo, 1978), which reflects an anticipation that the event will occur again, and the inverse U-shaped relation between stimulus complexity and infant looking (Kagan, 2008; Kidd, Piantadosi, & Aslin, 2012), which reflects a tendency to seek out information that is neither too novel nor too familiar.

Ambiguity does arise when there are multiple plausible explanations of infant looking that are equally consistent with the data. One common variant of this situation occurs when one cannot tell whether infant looking behavior reflects a lower-level perceptual process or a higher-level cognitive process because both explanations are consistent with the data (Aslin,

2000; Haith, 1998). Criticisms based on lower-level perceptual confounds have in fact been leveled against at least one of the studies by Hamlin and her colleagues (2007; Scarf, Imuta, Colombo, & Hayne, 2012; see Hamlin, Wynn, & Bloom [2012] for a reply). Yet, Tafreshi and her colleagues (2014) do not concern themselves with possible lower-level explanations for the findings taken as evidence for socio-moral evaluations in infants. Rather, they focus on the discrepancy between “technical uses and everyday aesthetic usage” (p. 23). As already mentioned, I do not see why researchers are necessarily obliged to comply with everyday usage of terms.

Nevertheless, important questions can be raised about the type of evaluations infants are demonstrating via preferential looking and reaching toward “prosocial,” “antisocial,” or “neutral” puppets. First, it will be remembered that the definition of a moral sense used by Hamlin (2013) referred to a tendency to see actions or agents as good/bad, right/wrong, and so on. This seems like a reasonable feature of a moral sense, yet it is not one that is required in order to prefer one puppet over another, or even to distribute resources to one puppet rather than another (Hamlin et al., 2011). Indeed, it is possible that the children do not see anything wrong with what an antisocial puppet is doing – it is just that the child has a more positive evaluation of the prosocial or neutral puppet than the antisocial puppet. For instance, when forced to choose, 26-month-olds and preschoolers (but, curiously, not 17 or 22-month-olds) tended to help a prosocial human agent rather than an antisocial agent (Dahl, Schuck, & Campos, 2013; Vaish, Carpenter, & Tomasello, 2010). Yet, most children in these studies were still willing to help the antisocial agent when there were no other potential recipients of help.

In contrast to the above preferences or relative evaluations, judging something as wrong is an absolute evaluation that does not depend on comparing one agent to another. For instance, we do not just put violent criminals at the bottom of the list of people we want to spend time with – we send them to prison. Similarly, preschoolers protest against moral transgressions, and judge them as wrong, by the third or fourth year of life (e.g. Schmidt, Rakoczy, & Tomasello, 2012; Smetana & Braeges, 1990). The current evidence does not reveal whether infant looking and reaching preferences are driven by the kinds of categorical evaluations or judgments required by the above definition of a moral sense.

A separate issue concerns the basis on which the infants form preferences. Like adults, older children distinguish between decisions about whom to interact with and moral, impartial considerations for instance about basic rights (Killen & Stangor, 2001). In contrast, data on infants’ social evaluations do not tell us whether infants’ preferences simply reflect who they want to interact with or whether these preferences reflect impartial third-party evaluations. In the first scenario, infants would be engaging in “friend-and-foe-detection,” as suggested by Hamlin (2014). The results from one study seems particularly consistent with the idea that infants are searching for potential “collaborators” (Hamlin, Mahajan, Liberman, & Wynn, 2013). Here, 9- and 14-month-olds were found to exhibit preferential reaching toward puppets who hindered a puppet who did not share infants’ food preference (as opposed to puppets who helped a puppet who did *not* share the infants’ food preference) (see also Kinzler, Dupoux, & Spelke, 2007). Alternatively, infants could be evaluating the actions of others without a regard for their own potential cooperation with those being evaluated. This

is presumably what preschoolers do when judging about hypothetical scenarios and when distinguishing between personal and moral considerations (Nucci & Weber, 1995; Smetana & Braeges, 1990; Tisak, 1993). Only the latter, impartial third-party judgments require a moral sense of right and wrong. From a moral point of view, there is a key distinction between shared food preferences (which might indicate whether we want to have dinner with a person) and transgressions (which indicates whether someone is deserving of opprobrium). Yet, it is not clear that preverbal infants make this distinction.

Developmental Predecessors and Successors

The argument is sometimes made that a certain skill is present before children could have had any relevant (social) experiences contributing to the development of this skill. For instance, Hamlin and Wynn (2011) stated: “It is unlikely that infants have been sufficiently socialized, by 3, 5, or even 9 months of age, to distinguish between the positive and negative intentions of social others to an extent that would explain our results, yet infants take this difference into account when choosing whom to interact with, based on their reaching and looking behavior.” (p. 38). Arguing that infant helping emerged without specific social experiences, Warneken and Tomasello (2006) proposed that “[i]nfants 18 months of age are too young to have received much verbal encouragement for helping from parents” (p. 1302). While these are testable hypotheses, history suggests that it is very difficult to know how much, or even what kinds of, relevant experience organisms have during given periods without investigating these experiences directly (Gottlieb, 1997; Spencer et al., 2009). For instance, a systematic investigation of the social context of infant everyday helping found that most infants help in everyday life by early in the second year and that most infant acts of helping are accompanied by encouragement, praise, thanking, and participation from family members (Dahl, 2013, 2014b). Without investigating the relation between early experiences and the development of infant preferential looking and reaching we do not know what role (if any) early experiences play.

It is equally important to study developmental *successors* as it is to study developmental predecessors of infant preferential looking and reaching (following observation of various social scenarios). Most nativist accounts propose that the moral sense argued to be present in infants is a building block for subsequent moral development (Bloom, 2013; Hamlin, 2014). Yet, this kind of developmental continuity cannot be taken for granted, especially if the nature of the abilities present in infants is qualitatively different from that present later (for instance “friend-and-foe-detection” vs. impartial concepts of right and wrong). The neonatal empathic cry – often taken as a prime example of an innate moral propensity (although see Campos et al. [2008]) – appears to disappear over the course of the first year, before prosocial, behavioral responses to distress emerge in the second year of life (Hay, Nash, & Pedersen, 1981; Hoffman, 2007; Sagi & Hoffman, 1976). To my knowledge, only one study has investigated and documented a relation between infant performance on a socio-cognitive looking time task and socio-cognitive abilities (performance on a theory of mind task) in preschoolers (Yamaguchi, Kuhlmeier, Wynn, & vanMarle, 2009). However, given the time span between the two assessments (3.5 years) even this study reveals little about *how* early socio-cognitive abilities documented in looking-time studies contribute to subsequent morally relevant abilities.

One key topic – both intriguing and daunting – is how infants’ seemingly prosocial and antisocial tendencies become integrated over the course of early development. In addition to whatever skills are documented by the above-described paradigms relying on preferential reaching and looking, infants’ empathic and helpful tendencies become increasingly frequent and flexible during the second year (Dahl, 2014b; Svetlova, Nichols, & Brownell, 2010; Warneken & Tomasello, 2006; Warneken, 2013; Zahn-Waxler, Radke-Yarrow, Wagner, & Chapman, 1992). During this same period, there are increases in parent-child conflict and in infant aggressive behaviors (Hay, 2005; Rijt-Plooij & Plooij, 1993). Some studies have even found positive correlations between prosocial and aggressive tendencies at these ages, even though these two behavioral tendencies are generally found to be negatively correlated (Eisenberg, Fabes, & Spinrad, 2006; Gill & Calkins, 2003; Hay, Castle, & Davies, 2000). How do these seemingly opposed tendencies become integrated into concerns with welfare, rights, and fairness? Does the preferential reaching and looking toward prosocial non-human agents translate into similar orientations toward human agents (Dahl et al., 2013)? If so, do they facilitate infants’ grasp of their own and others’ transgressions? Whether one takes a nativist or a constructivist point of view, these questions are of major importance, not only in themselves but also because they concern the ways in which early (even prenatal) developments set (or do not set) the stage for subsequent moral development.

This commentary has discussed ambiguities in key concepts in some nativist approaches to early moral development. These ambiguities point to important areas of future research. Unlike Tafreshi and her colleagues (2014), I believe that researchers are free to define their key terms, but that those definitions should be made explicit. Once the definitions *are* made explicit, it may turn out that not all ways of defining terms like “morality,” “innate,” and “evaluation” are equally conducive to understanding how children think and act. For instance, there are good reasons for distinguishing between different types of normative concerns, some of which may be called moral (welfare, rights, fairness, and justice) while others may be called conventional (see Turiel, in press). Importantly, this view is not based on a notion of how most people use the term “morality” but rather on work in moral philosophy along with a large body of empirical research showing that children draw qualitative distinctions between these normative concerns from preschool-age, if not before (Turiel, 1983a; for a review, see Smetana, 2013). Insofar as researchers choose different definitions of morality, these choices too would have to be based on close attention to the phenomenon under investigation.

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