

The Development of Social Trust

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Abstract

Trust is the currency on which all human interactions are based. This entry reviews a diverse body of literature on the development of trust. We begin by describing foundational theories linking early experience to trust, and then discuss how violations of trust affect children. We turn next to a particularly active area of trust research in cognitive development—namely, trust in information learned from what other people say (testimony). Children’s willingness to believe what they are told is essential for the cultural transmission of knowledge; it allows them to learn about things they have not experienced themselves. We describe research showing that, in fact, young children have a great deal of difficulty not believing testimony. We suggest that this credulity is the manifestation of a bias to trust testimony specifically rather than a more generic, undifferentiated trust, and speculate about the origins of this bias. Finally, we offer several suggestions of areas for future research, including whether children (like adults) make judgments of trustworthiness based on an individual’s facial features, how culture influences trust and trustworthiness, and how children learn to evaluate the credibility of digital sources of information.

INTRODUCTION

In many places in the world, you can approach a stranger to ask for directions without fear of bodily harm. You can assume that the stranger will offer directions that she or he believes will lead you to where you want to go. And if you stop in a cafe on your way there, you can enjoy an espresso without worrying that it has been poisoned. These are rather unremarkable observations, but they illustrate a remarkable characteristic of human nature: We are, by and large, a trusting species. We trust that other people will behave in helpful (or at least benign) ways, and we are surprised and often outraged when they do not.

It is probably not an overstatement to say that trust is the currency on which all human interactions are based. We entrust our children to caregivers, our health to doctors, and our secrets to confidants. We trust that spouses will be faithful, that contracts will be honored, and that scientists will accurately report their data. Countries in which citizens respond in the

affirmative to a survey question asking whether most people can be trusted tend to have lower levels of corruption, more efficient judicial systems, and a higher GDP per capita (e.g., Knack & Keefer, 1997).

Given its importance to interpersonal relationships, knowledge acquisition, and even institutional integrity, it is not surprising that trust has been studied by scholars from philosophy to economics to psychology and neuroscience, and, increasingly, in interdisciplinary ways. Among the questions being asked: When one party makes a promise to the other, what are the implied rights and responsibilities of each one? What are the conditions under which cheating or lying are likely to occur? What is the neural basis of trust?

This entry concerns the development of trust in children. As we shall see, there is no simple answer to the question of how or when trust develops. It depends on who is being trusted, the thing that they are being trusted with or about, and how that trust is being measured. Furthermore, there is no end-point to the development of trust: Even as adults, new experiences and the vicissitudes of daily life shape how, when, and whom we trust. Despite these complexities (or perhaps because of them), the study of social trust in children is a thriving research area. The overarching research questions are the same as those that drive the rest of developmental science: What is a child's "starting state" with regard to trust? What qualitative and quantitative changes occur over time? What experiences influence these developments?

Answers to these questions are interesting in their own right, of course, but they also have important theoretical and practical implications. On the theoretical side, for example, understanding the topography of trust in children is essential to understanding how cultural knowledge is transmitted. We know that Thomas Jefferson wrote the Declaration of Independence, and that the earth is round not from personal experience, but because trusted informants provided this information. On the practical side, studying the variables that influence children's trust is likely to be important for, among other things, understanding how to foster critical thinking skills.

We begin by summarizing a few pieces of the large and diverse literature on the development of social trust, and then turn to describing some of the cutting-edge work. We end by outlining a few key questions for future research.

FOUNDATIONAL RESEARCH

Where does trust come from? Do we learn to trust other people, or are we born trusting? It is unlikely that newborns make a deliberate decision to put their faith in other people. However, some of their behavior suggests

that they are naturally inclined toward trust. For example, they accept nourishment and comfort from their caregivers, and they do so without any experience or training (Baier, 1986). Of course, the young of all species accept nourishment, apparently without suspicion, so this innate disposition toward trust (if we can call it that) is clearly just a starting point in the profile of human trust.

The most explicit theoretical treatment of the development of trust can be found in Erik Erikson's (1950) theory of psychosocial development. The first stage of his theory centers on the tension between trust and mistrust. From birth to 2 years of age, children learn whether their caregivers can be counted on to meet their basic needs. When caregivers do so in a consistent, supportive, and nurturing manner, children learn that they can be trusted. When caregivers are unpredictable, children learn that they cannot be trusted. The resolution of this initial trust–mistrust “crisis,” Erikson argued, will influence that individual's willingness to trust other people throughout his or her life.

Attachment theorists, including John Bowlby (1969) and Mary Ainsworth (1967), also argue that the predictability and adequacy of early child–caregiver relationships have important long-term psychological consequences, including consequences for trust. Ainsworth found that mothers who responded to their infants in a sensitive and contingent manner tended to have infants who were securely attached: They used the mother as a base from which to explore, and returned to her for support and encouragement when faced with uncertainty. Mothers who did not as readily meet their infants' emotional needs were more likely to have infants who were insecurely attached: They explored less and were less easily soothed.

Attachment theorists believe that this early child–caregiver relationship serves as the foundation for an internal working model of the social world. Although the infant's internal working model does not dictate how we view the social world later in life, there is evidence to suggest some continuity in attachment security across development. The relevance of this work to the development of trust should be clear: Early caregivers' responsiveness and predictability may influence how trusting someone is.

Without denying the importance of early interactions, other researchers have highlighted experiences beyond infancy that are likely to play a role in the development of trust. Building on social learning theory, for example, Rotter (1967) suggested that children learn about trust from the behavior of parents, teachers, and peers. If in one's experience, promises by these people are routinely kept, then the result will be an orientation toward trust, whereas if they are routinely broken, then the result will be a wariness about the word of others.

In one recent experimental study on the relationship between promise-keeping and trust (Kidd, Palmeri, & Aslin, 2013), 4-year-olds about to begin

an art project were offered the opportunity to use some well-worn crayons or to wait 2.5 min as the experimenter went to get a brand new set of “cool” art supplies. (The crayons were in a container that the children could not open themselves, so in fact, all children ended up having to wait.) In the unreliable condition, the experimenter returned empty-handed and apologized, explaining that she had been mistaken about the other art supplies. In the reliable condition, she returned with the art supplies, thus fulfilling her promise. After a second, similar experience in which the same experimenter was again either unreliable or reliable, all children participated in a delay of gratification task (e.g., Shoda, Mischel, & Peake, 1990): They could eat a single marshmallow placed on a plate in front of them or they could wait (an unspecified amount of time) until the experimenter returned with an additional marshmallow, at which point they could eat two. The researchers measured how long children waited (up to 15 min) before tasting (licking or biting) the marshmallow in front of them.

Results were striking: Children in the unreliable condition waited, on average, just 3 min, whereas those in the reliable condition waited, on average, four times as long—12 min. It seems that children in the unreliable condition, who twice had experienced a broken promise, did not trust that the experimenter would follow through on her pledge to bring an additional marshmallow. This study, of course, raises many additional questions, particularly about how far this mistrust extends: Were children making inferences about the reliability of the environment or about the specific experimenter who had earlier broken promises? Could the experimenter do anything to become trustworthy again? Would children growing up in an “unreliable world” with unpredictable caregivers and situations be more or less forgiving in this experimental setting?

Trust is necessary for (and presumably shaped by experiences in) domains other than promise-keeping, as well—domains such as emotional trust and honesty (e.g., Rotenberg, 2010). Emotional trust is just what its name implies—the expectation that other people (especially friends) will refrain from causing you emotional distress. They will not, for example, share your secrets or criticize you. Even kindergartners seem to have some understanding of the dynamics of emotional trust in that they are more likely to disclose personal information to individuals they consider friends than nonfriends (Rotenberg & Sliz, 1988).

Needless to say, violations of emotional trust can be devastating. A salient example comes from the “mean girl” phenomenon that many believe is pervasive in US middle schools especially—spreading rumors about supposed friends, setting up a trusting and unsuspecting lower status girl for humiliation, and so on. From a preschool age, girls are more likely than boys to engage in “relational aggression,” including gossip and social exclusion

(e.g., Crick, Casas, & Mosher, 1997). These kinds of behaviors have demonstrable psychological consequences, including depression and anxiety, and it is not difficult to imagine how betrayals of friendship would undermine one's willingness to trust.

Honesty, of course, is the expectation that people will tell the truth, or at least that they will say what they believe to be true. The section titled "Cutting-Edge Research" is devoted to the relationship between truth and trust in childhood, and so we will put off our discussion of honesty until then. For the time being, we will simply point out that there is an etymological link between "trust" and "true" in English: They share a common Germanic source, although "trust" came into English in the thirteenth century and "true" is Old English (Ayto, 1990).

We close this section by describing the "trust game," a popular research paradigm used by economists to study trust in adults (Berg, Dickhaut, & McCabe, 1995), and which some have argued could be a useful tool for developmentalists (Gummerum, Hanoch, & Keller, 2008). In the trust game, participants are given a certain amount of money, which is theirs to keep. If they choose to, however, they can give some or all of it to an unseen stranger (another participant or a confederate). The amount they give to the stranger (if any) is tripled, and the stranger can then return however much she/he wants back to the participant. For example, suppose a participant starts out with \$10 and decides to give half to the "trustee." That \$5 will be tripled so that the trustee now has \$15, and the "truster" has just \$5. The trustee could return anywhere between \$0 and \$15. In this game, "trust" is operationalized in terms of how much the truster is willing to give in the initial turn to the trustee, and "trustworthiness" is operationalized as how much money (after the tripling) the trustee transfers back.

The trust game in its classic form is played just once; neither participant expects to meet the other or to interact with him or her again. The most rational thing for the truster to do, arguably, is to keep all of the initial endowment, whereas the most rational thing for a trustee who does receive a donation (which is the tripled) is to keep it all. However, this is not what participants do. Although there is variation within and across cultures (Johnson & Mislin, 2011), most trusters tend to give the trustee some of their initial endowment, and most trustees tend to give something back. For example, in Berg *et al.*'s (1995) original study conducted with American undergraduates, 30 of 32 trusters gave some money to the trustee (on average, \$5.16, tripled to \$15.48), and 24 of the 30 trustees who received money returned some (on average, \$4.66, or about 30% of their total).

One interesting question concerns the developmental course of trust and trustworthiness in the trust game. One might expect individuals to become

more cynical or selfish with age, as they have more experience with violations of trust and disappointments when trust is not reciprocated. In fact, however, the data show just the opposite: A recent large study that included participants from 8 to 68 years of age found an increase in trust from primary school students to undergraduates, and asymptotic levels throughout adulthood (Sutter & Kocher, 2007). Trustworthiness tended to increase with age, with the oldest trustees returning the largest share to the truster. In the section titled “Key Issues for Future Research,” we will describe a research program that has made use of the trust game to begin to study the role of culture in the development of trust.

CUTTING-EDGE RESEARCH

One area of research on trust that has recently been the focus of a good deal of attention concerns children’s trust in what other people say. A moment’s reflection will reveal that much—maybe most—of what we know has been learned not from direct experience but from what philosophers call the “testimony” of others. Consider how you know that the earth is round or that the President is at Camp David this weekend or that Thomas Jefferson wrote the Declaration of Independence. You know these things because people told you, not because you gathered that information autonomously. Relying on other people to provide us with information means, of course, that we often have to take their word “on faith.” Indeed, we often trust testimony even when it conflicts with first-hand experience—we believe testimony that eels are fish, for example, even though they look like snakes, or that the earth is round, even though it looks flat.

At first glance, these observations may seem unsurprising. But, as Paul Harris (2012) has pointed out, children’s reliance on testimony as a primary source of information conflicts with an influential metaphor in cognitive development of the child as scientist (e.g., Gopnik, Meltzoff, & Kuhl, 2000). According to this metaphor, children form and test hypotheses in a mostly autonomous march toward objective truth. A more appropriate metaphor, Harris argues, is the child as anthropologist, whose goal is not objective truth, but enculturation—that is, becoming a full-fledged member of the culture. And often, the best source of information about the culture will be what other people say rather than first-hand experience.

One compelling example Harris offers concerns the beliefs children in many cultures come to hold in supernatural beings (e.g., God, witches, and spirits). These beings are supernatural in the sense of possessing powers and affecting events in ways that conflict with children’s everyday experiences and observations. For example, preschoolers growing up in communities where God is endorsed by their caregivers expect that God would know what was inside a

closed box without looking—even though they would deny that they (or anyone they know) could do so (Barrett, Richert, & Driesenga, 2001). In fact, in some cases, children's belief in deities and their supernatural powers actually increases with age (e.g., Mead, 1932). This is counter-intuitive because with age comes the accumulation of more first-hand experience grounded in the physical world. So how could belief in the supernatural increase with age? It must be based on the testimony they hear from members of their community.

These observations do not address why children are so trusting of what they are told in the first place. Perhaps their credulity simply reflects the general orientation toward trust described at the start of the previous section—the trust that allows them to accept nourishment, for example. A recent study, however, suggests that although children may have a general orientation toward trust, their willingness to believe what they are told is more specific (Jaswal, Croft, Setia, & Cole, 2010). In this study, 3-year-olds played a game in which an experimenter who had been described as “tricky” hid a sticker under one of two cups (outside the child's view), asserted that the sticker was in the cup opposite to the one where she had actually hidden it, and then invited the children to search. If children found the sticker in the first cup they searched, they got to keep it; if they did not, the experimenter got to keep it.

On the very first trial, all children looked in the cup the experimenter mentioned and found that it was empty. This is, perhaps, to be expected given that it was an unfamiliar game with an unfamiliar experimenter. However, most children continued to look under the cup the experimenter mentioned on the subsequent seven trials (involving different pairs of colored cups), even though this meant that they never found or got to keep any stickers. It was almost as if they could not keep from searching the location identified by testimony.

The crucial comparison involved a different group of 3-year-olds who participated in a very similar game. Rather than hearing the experimenter assert that the sticker was in the empty cup, however, these children watched as the experimenter placed an arrow on top of it. On the first trial, all children searched in the cup indicated by the arrow—presumably because they expected the experimenter would be helpful. However, unlike in the testimony condition, children in the arrow condition quickly learned to search in the cup opposite to the one indicated by the experimenter. They caught on that a reverse contingency was in effect and found significantly more stickers than children in the testimony condition.

Although children in both the arrow and testimony conditions initially expected the experimenter's words or actions to be veridical, those in the testimony condition continued to expect that the experimenter's testimony would be veridical despite the fact that they were repeatedly misled. This

suggests that, above and beyond any general orientation toward trust, children have a robust, highly specific bias to trust what people say.

Where would this specific bias to trust testimony come from? Most of the time, people say what they believe to be true. Indeed, as a number of thinkers have pointed out, communication is possible only because it usually involves the transmission of true beliefs (e.g., Bok, 1978; Dennett, 1981; Grice, 1975; Reid, 2000). So by the time children are 3 years of age (as they were in the Jaswal *et al.*, 2010 study), they will have had an opportunity to learn that there usually is a tight correspondence between what people say and what is actually the case (Hume, 2004). Ignoring or discounting testimony requires inhibiting this learned expectation that testimony will be true, and inhibitory control is one area in which young children have well-known difficulties (Carlson, 2005). By the time they are 4 or 5 years of age, children are less likely to be repeatedly misled on the sticker game (and they are more likely to be able to demonstrate inhibitory control). But, it should be noted that even adults find it difficult not to trust a piece of testimony when their cognitive resources are taxed (Gilbert, 1991).

From the discussion so far, one might have the impression that young children are completely gullible, unable to discriminate between reliable and unreliable sources of information. In fact, however, although they are often credulous, recent work has shown that from a very young age, children's trust in testimony can be selective. In one frequently used procedure, children are presented with two informants, one who refers to familiar objects using the wrong names (e.g., calls a cup a "fish") and the other who refers to the same objects correctly. Later, children as young as 2 years of age prefer new information from the informant who had been correct about the familiar objects rather than the one who had been incorrect (e.g., Koenig, Clement, & Harris, 2004; Koenig & Woodward, 2010). This basic procedure has been used to investigate a range of variables that can influence who children expect is a trustworthy source of information (for a review, see Harris, 2012)—an adult versus a child (answer: an adult), a familiar teacher versus an unfamiliar one (answer: familiar), someone who speaks with a native accent versus a foreign accent (answer: native), a group versus an individual (answer: the group), and so on. Thus, although children are generally a trusting lot when it comes to testimony, their trust can be sensibly moderated by a number of factors.

KEY ISSUES FOR FUTURE RESEARCH

There are clearly many outstanding questions concerning the development of social trust, several of which we have alluded to in the previous sections. Indeed, the number of questions remaining is an indication of the health and vitality of the field. In this final section, we describe a few areas of research

that we think are especially important for the field moving forward and many of which cross traditional disciplinary boundaries.

Although most adults would agree with the old adage “Don’t judge a book by its cover,” appearance nevertheless can automatically influence the judgments that we make about a person. Adults, for example, judge attractive individuals (about whom they know nothing else) as more intelligent and social than less attractive individuals (Feingold, 1992). Even 2- to 3-month-old babies look longer at pictures of women whom adults judge to be attractive (Langlois *et al.*, 1987).

Adults also make judgments about trustworthiness on the basis of what someone looks like. In a typical experiment, participants are asked to rate the trustworthiness of a series of faces, on a scale from very untrustworthy to very trustworthy. The faces are derived from a few standardized faces that have had their features varied in parametric ways. Alexander Todorov and his colleagues have shown that there is a great deal of consistency among adults as to what constitutes a trustworthy face—among other things, one with high inner eyebrows and pronounced cheekbones (e.g., Oosterhof & Todorov, 2008). There is some overlap between trustworthy and attractive faces, but it appears that the two are separable, meaning that the most trustworthy face is not necessarily the most attractive. To be clear, there is no relationship between faces judged to be trustworthy and actual trustworthiness; a face that is judged to be trustworthy may well belong to someone who is not. It is interesting that although adults would have experienced disconfirming evidence (i.e., untrustworthy faces belonging to trustworthy individuals or vice versa), the initial judgment is so automatic as to continue to exert an influence. There has yet to be any systematic study of when or how children judge trustworthiness based on facial features (but see Bascandziev & Harris, 2014), so this is clearly an area deserving of further study.

A second area where we would like to see additional study concerns the role of culture on the development of trust. Culture is the set of practices, beliefs, language, government, and legal and institutional structures shared by members of a community. There is now a substantial amount of research showing that culture can have a major influence on how people perceive and reason about the world and the people in it (e.g., Nisbett, 2003). As we have been emphasizing throughout, trust is shaped by experience, and so it is unquestionably influenced by culture. One recent study conducted in China made this point in an extremely dramatic fashion (Cameron, Erkal, Gangadharan, & Meng, 2013). In 1979, China implemented a one-child policy, restricting the number of children most couples could have to one. Conventional wisdom has been that the one-child policy has created a generation of “little emperors,” children who are more selfish and less concerned about the well-being of others than previous generations.

Cameron *et al.* (2013) used a version of the trust game described in the section titled “Foundational Research” to investigate whether the data would bear this out. They compared the responses of adult participants born 1 or 4 years before the implementation of the policy (who had, on average, 0.72 siblings) with others born 1 or 4 years after (who had, on average, 0.16 siblings). Results showed that those born under the one-child policy sent less of their initial endowment to the trustee and returned less to the truster than those born before the policy. In the vocabulary of the trust game, they were both less trusting and less trustworthy. This effect held even when controlling for several demographic and family background factors, and it could be attributed statistically to being born under the one-child policy (as opposed to simply being an only child, which did of course happen before the policy as well). One explanation is that growing up in a culture in which most of one’s peers are also only children means that very few playmates will have learned about selflessness and sharing from experience with siblings, and this lack of experience appears to have cascading effects on trust.

There are several interesting questions that could be addressed about the relationship between culture and trust in testimony. For example, Jaswal (2004) found that 4-year-old American children were more skeptical than 3-year-olds on a task that required contradicting an experimenter who said something that was unlikely to be true. Would children growing up in cultures where deference to adults is explicitly emphasized go through this transition at a later age? Another question concerns how language influences trust in testimony. Some languages, such as Turkish, make use of a grammatical element called an *evidential*. This device is used to indicate whether something that happened in the past is known from personal observation or from hearsay or inference. Turkish children understand the direct experience marker by the age of 3 years and the indirect experience marker around 1 year later (Aksu-Koç, 1986). One interesting question is whether children who speak a language that makes use of evidentials would be more likely to trust testimony that is said to be based on direct observation than that which is based on hearsay.

Finally, an area of research where we would like to see additional study and one that has clear practical importance concerns how children assess information they obtain from digital sources. Children in industrialized societies are “digital natives” (Palfrey & Gasser, 2010), who expect to be able to access facts at the touch of a button. Sitting in a kindergarten classroom, it is not uncommon to hear a 5- or 6-year-old say, “Let’s ‘Google’ it.” Yet children are not adept at assessing the objectivity of information they find online—they may not even recognize that a webpage has an author, let alone that the author may not be credible or may be biased in some way. Even adults fall victim to the “if it’s in print, it must be true” heuristic, assuming

that if something has made it into print, it will have been vetted by the appropriate authorities and deemed accurate. (As instructors of college classes, we are often struck by students who have difficulty believing that a textbook or journal article might contain factual errors or be written in a biased manner.) But, of course, there are no gatekeepers who monitor the credibility of online information, and so learning to think critically about online sources is an important skill to develop. As a first step, it would be interesting to know how children just learning to read evaluate the trustworthiness of the printed word (see, e.g., Robinson, Einav, & Fox, 2013).

CONCLUSION

The development of social trust is a complex, multi-faceted topic. We are entirely dependent on other people as children, and so may be innately predisposed toward trust. However, as we have described, experiences in childhood and throughout our lives will shape how trusting (and trustworthy) we are. Understanding the factors that influence the development of trust is important because trust is central to all of our interactions with other people.

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