

Gullible's travel:

How honest and trustful children become vigilant communicators.

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“This is the Golden Lasso. Besides being made from an indestructible material, it also carries with it the power to compel people to tell the truth. Use it well, and with compassion.” – Queen Hippolyte to Wonderwoman, *The New Original Wonderwoman*, Marston & Ross, 1975.

The inventor of Wonderwoman and her golden lasso, William Moulton Marston, did not believe that truth devices were only material for fiction. He claimed to have found a lie-detection technique, one that would “end the 6000-years search for a truth test” (Marston, 1938). It all started when William James invited Hugo Münsterberg to join his laboratory in Harvard. The German émigré soon became a popular professor, laying the foundations of applied psychology and attracting many promising students, young Marston among them. Under Münsterberg's mentorship, the undergraduate started a research on systolic blood pressure variations that would inspire what may have been the most widely used “lie detector” in human history: the polygraph deception test. From its first uses outside the laboratory in the 1920s, the technique quickly rose to fame. The polygraph

featured in TV shows and advertisements, became part of popular culture (Adler, 2007; Bunn, 1997). In *Look* magazine, the “disinterested truth finder” was used to read hearts and minds, even to settle marital disputes. Once, the polygraph revealed that a “neglected wife and her roving husband” still had love for one another (Bunn, 1997). The technique was also put to less frivolous use, in police or private investigations, or in job interviews. At the height of his fame, Marston claimed that his lie detector test’s accuracy approximated 100%, and was a “psychological medicine” that would “cure crime itself if properly administered” (Marston, 1938). The polygraph deception test, however, proved quite unreliable, with high rates of false positives and false negatives (National Research Council, (USA), 2003).

Despite considerable research, despite public and private investment, the quest for a reliable lie detector has proven elusive. The popular interest in lie detection techniques, however, seems unshakable. This popularity goes beyond the usual curiosity for weird technological contraptions. It has to do, we think, with a deep-rooted interest in lies, in deception, and in the ways of avoiding them. Part of this fascination could originate from local cultural specificities (Adler, 2007). Still, the cultural success of lie detectors (as well as of stories and games involving deception and dupes) may exploit a more general feature of human psychology. Among other species, humans stand out by their willingness to offer information, and their reliance on information provided by others (Hauser, 1997; Sperber & Wilson, 1989; Tomasello, 2008). This reliance makes us vulnerable to misleading informants. In this context, the possible occurrence of deception raises a particularly thorny issue: unlike mistakes, lies are typically advantageous to those who produce them. This advantage provides leverage for the evolution of strategies based on the production of persuasive lies. The very fact that human communication is, evolutionarily speaking, a stable practice, suggests that some mechanisms allow us to filter misinformation away. Only thanks to these filters is communication advantageous to those who practice it (Dawkins & Krebs, 1978). One may call them mechanisms of “epistemic vigilance” (Sperber et al., 2010).

In this chapter, we turn to the developmental origins of these capacities for, and interest in, spotting liars. We will show that our fascination for deception and lies emerges relatively late, around the age of four. We will review evidence that two- to three-year-old children show remarkable conceptual competence in mentally representing beliefs, and in representing communicated information as false, two capacities that are crucial for vigilance towards deception. Yet, three-year-olds are often remarkably blind to the fact that they may be deceived. Their surprising trustfulness goes along with a robust and remarkable tendency to disregard most opportunities to lie, and to assume that most assertions are true (see also Chapter 9). Around the age of four, children become more likely to recognise the falsity of assertions, more likely to lie, and more likely to be vigilant towards deception. Do these changes spring from the emergence of entirely novel abilities? We doubt it. Rather, they may reflect a change in children's expectations about people and about communication — expectations that they revise as they grow in autonomy and need to interact more with their peers.

Epistemic vigilance grows with difficulties

Lies are not easy to spot. They are much less frequent than honest communication. American adults report producing fewer than two lies per day (DePaulo, Kashy, Kirkendol, Wyer & Epstein, 1996; Serota, Levine & Boster, 2010), a relatively small number if contrasted with the impressive amount of honest (though not necessarily reliable) communicative actions they engage in. Moreover, deceivers have no interest in revealing that they are lying. Conventional wisdom notwithstanding, no simple behavioral marker (such as shifting eyes or blushing faces) reliably indicates deception. Lay people's and experts' performances are remarkably low when asked to spot liars with the help of behavioral cues alone — even for people they know well (Bond &

DePaulo, 2006). Thus, the natural flow of human communication is hard to sift through for lies, deception being both discrete and rare.

How then does epistemic vigilance develop? Cultural training is one possibility, yet the help that children derive from it is surprisingly meager. They are constantly exposed to games involving deception, to jokes and stories of disguise, of tricks, of lies. These could offer a « scaffolding » for the development of vigilance towards deception. Quite surprisingly, young children do not seem to learn at all in such games, simple though they may be. Most three-year-olds show a baffling lack of understanding of hide-and-seek games, for instance. For one thing, they are not proficient hiders; but the problem is deeper: they seem to miss the point of the game entirely. When having to hide, they say where they are going to hide, or hide in full view of the seeker. When playing the role of the seeker, they tell others where to hide, or count with their eyes open (Peskin & Ardino, 2003). This is all the more surprising since three-year-old children are sensitive to knowledge and ignorance (Pillow, 1989; Pratt & Bryant, 1991). Moreover, they possess sufficient perspective-taking abilities to place objects in such a way that others cannot see them (Flavell, Shipstead, & Croft, 1978; McGuigan & Doherty, 2002). They use this knowledge to hide their transgressions: they will perform a transgression less often when they can be seen in the act (Melis, Call & Tomasello, 2009). In spite of this, the pleasure that three-year-olds take in playing hide-and-seek owes, it seems, very little to the experience or practice of deception. Rather they seem to interpret the game of hide-and-seek in a completely different manner — possibly as a game of tag, as a peek-a-boo, or as a game whose enjoyment derives mainly from the thrill of being, first separated, then together again.

Similarly, three-year-old children are remarkably unaware of the fact that they may be lied to in simple games. Couillard and Woodward (1999) designed a task that seems, *prima facie*, an ideal way of training children's vigilance towards deception. In their experiment, three- and four-year-

olds had to find a sticker that could be hidden underneath one of two bowls. Before children could guess the location of the sticker, a confederate pointed to one of the bowls. The game was framed as competitive: children were told that the confederate would keep the sticker for herself if they lost, thus implying that the confederate had an interest in misleading participants. Moreover, the confederate consistently deceived the child by pointing to the empty bowl, and was said to be “tricky”. Despite repeating the game for 10 trials, with feedback about the real location of the stickers, the youngest participants did not learn to select the box that the informant did not point at. In subsequent studies, three-year-old children were found to maintain their trust in misleading informants in similar hiding games. Importantly, three-year-olds extend their trust beyond deceptive informants, to mistaken informants (Call & Tomasello, 1999; Figueras-Costa & Harris, 2001). It is only by the age of four- to five-years-old that children manage to distrust a misleading informant who uses familiar communicative means (Heyman, Sritanyaratana & Vanderbilt, 2013; Jaswal, Carrington Croft, Setia & Cole, 2010; Mascaro & Sperber, 2009; Vanderbilt, Liu & Heyman, 2011).

These results are all the more remarkable since young children appear to filter out potentially deceptive information in other tasks: they selectively learn from benevolent informants rather than from malevolent ones (Mascaro & Sperber, 2009, Doebel & Koenig, 2013; Hamlin & Wynn, 2012; Lane, Wellman & Gelman, 2012). Thus the remarkable gullibility of young children is clearest in tasks of a certain kind — tasks where they have to treat what is conveyed by a single informant as false, and infer that the opposite is true. We shall refer to these tasks as “false communication tasks”, to highlight their commonalities with false belief tasks — both in the capacities they require and in the developmental pattern they exhibit (Mascaro & Sperber, 2009).

As we have already suggested, the development of vigilance towards deception raises a paradox. Lies are rare and hard to detect in human communication. Moreover, many children under four

blissfully ignore the possibility of deception, even in simple artificial situation in which the motivations and strategies of liars are unambiguous. How do children become vigilant towards lies in such circumstances? What cognitive changes (if any) trigger the emergence of vigilance towards deception (and towards misinformation more generally)? And what explains the remarkable trust that three-year-olds manifest in false communication tasks? We consider three plausible answers for these questions. A first hypothesis is that children recognize, from an early age, that they can be misinformed, but lack the proper executive abilities to act on that knowledge. A second hypothesis holds that children's vigilance towards deception increases around the age of four thanks to the development of novel ways of representing representations such as beliefs and utterances (i.e., of novel metarepresentational abilities). According to a third hypothesis, children under four have most if not all the capacities required to be vigilant towards deception, but do not use them because they are trustful.

Does children's trust reflect an executive deficit?

Children's executive abilities increase around four. Moreover, false communication tasks share characteristics with some executive functioning tasks: for instance, they may require children to inhibit accepting communicative cues that have been reliable in the past (Couillard & Woodward, 1999; Jaswal, Carrington Croft, Setia & Cole, 2010). Recent evidence also suggests that executive abilities contribute to the capacity to filter out misinformation (see Chapter 9). Thus, it would not be completely surprising if three-year-olds' heightened trust in communication were underpinned by an inability to resist accepting what one confident informant asserts. Several lines of evidence, however, speak against this hypothesis.

First, evidence for a relation between executive abilities and the capacity to be vigilant towards deception is scarce. In a series of five carefully crafted studies, Heyman, Sritanyaratana and

Vanderbilt (2013) presented young children with tests of vigilance towards deception, and tests of executive functioning. No robust correlation between tasks of the two types (even closely matched pairs of tasks) was found (see also Chapter 7).

Second, in many contexts, children are quite capable of resisting assertions coming from one confident speaker: their executive capacities are sufficient for this purpose. Children as young as three reject statements coming from a single confident speaker, when that statement contradicts their perception (Jaswal, 2010; Lyon, Quas & Carrick, 2012) or their memory (Clément, Koenig & Harris, 2004; see also Ma & Ganea, 2010, although in this case three-year-olds also need exposure to informants' unreliability to disregard their testimony). Likewise, children as young as three are more likely to accept information that contradicts their guesses, when it comes from a better-informed speaker, as opposed to an equally-informed one (Robinson, Champion & Mitchell, 1999; Robinson & Whitcombe, 2003). If young children's executive limitations accounted for their lack of vigilance, then they should make them unable to resist a confident informant, or to consider competing evidence; the data speak to the contrary.

Third, an abundant literature shows that two- to three-year-old children select which information to accept when two testifiers provide contradictory information. For instance, they preferentially learn from benevolent and competent informants (e.g., Birch, Vautier & Bloom, 2008; Corriveau & Harris, 2009; Doebel & Koenig, 2013; Hamlin & Wynn, 2012; Jaswal & Neely, 2006; Koenig & Harris, 2005; Scofield & Behrend, 2008). Were young children prevented by executive limitations from resisting inaccurate testimonies, they would merely trust the last informant speaking in all those studies.

In short, executive functioning abilities play a role in filtering out misinformation, and could contribute to explain inter-individual and age differences in gullibility. Yet, children as young as

three have sufficient executive abilities to refrain from indiscriminately accepting any testimony, and to select, in a pair, which informant they would learn from. This speaks against the executive interpretation of false communication tasks according to which three-year-old children are unable to reject what is conveyed by a single confident speaker. We now consider another possibility: the gullibility found in three-year-olds may reflect a flaw in their manner of representing thoughts, utterances, or beliefs — in their *metarepresentational abilities*.

Does children's trust reflect a metarepresentational deficit?

Vigilance towards deception involves representations of representations: it requires knowing that communication can be used to modify beliefs (mindreading component) by communicating false information (epistemic component). As we will review, children's behavior shows important changes in these two domains around age four. These changes could be explained by the emergence of entirely novel metarepresentational abilities (Leekam, Perner, Healey, & Sewell, 2008; Wimmer & Perner, 1983; Wellman, Cross & Watson, 2001). However, we suggest that a closer look at young children's competence indicates that they have, long before they turn four, a basic grasp of two metarepresentational building blocks of epistemic vigilance : a capacity to represent the effect of communication on beliefs, and an understanding of truth and falsity.

Lessons from the mindreading domain: Three-year-olds are honest

Children's tendency to lie shows an increase around age four. This change occurs in games where young children have to deceive an opponent (e.g. Sodian, 1991; Russell, Mauthner, Sharpe & Tidswell, 1991) as well as in more ecological settings, such as the temptation paradigm (Lewis, Stanger & Sullivan, 1989), in which children are given an opportunity to deny responsibility for a transgression that they committed (e.g. Talwar & Lee, 2002a; 2008). Until recently, researchers

thought that this tendency of three-year-olds to miss blatant opportunities for deception could be accounted for by a simple hypothesis: children of that age did not represent beliefs. This view was supported by the robust increase in performance that is observed on standard false belief tasks at age four (e.g. Wimmer & Perner, 1983; Wellman, Cross & Watson, 2001). This long-held view has been challenged by an impressive number of studies showing that children before age four do possess metarepresentational capacities. Those studies used a variety of measures, including looking behavior, helping, replies to requests, or pointing (for reviews, see Baillargeon, Scott & He, 2010; Perner & Roessler, 2012). Although there is no consensus on the nature of these early competences, these findings make it worth reconsidering the once prevalent explanation of children's lack of awareness for deception opportunities. Is it true that children fail to grasp deception because they fail to understand that communication is used to modify people's beliefs?

Young children seem to possess an incipient knowledge of the way communication affects beliefs. Children as young as eighteen months old expect that truthful communication will correct someone's false belief (Song, Onishi, Baillargeon & Fisher, 2008). Moreover, infants use communication with the intent to act on their audience's mental states. They point to inform ignorant adult experimenters (Liszkowski, Carpenter & Tomasello, 2007) or to correct false beliefs in mistaken adult experimenters (Knudsen & Liszkowski, 2012). Likewise, three-year-olds produce statements that they know to be false, to hide a transgression, or simply to be polite — the increase in lying behavior observed around age of four notwithstanding (Lewis, Stanger & Sullivan, 1989; Polack & Harris, 1999; Talwar & Lee, 2002a, 2002b; Evans & Lee, 2013; see also Reddy, 2007; Wilson, Smith & Ross, 2003 for observational evidence). The literature thus indicates that children younger than four can represent beliefs (or analogues of beliefs). They recognize that communication is used to act on others' mental states. In spite of this, their proficiency as liars shows a sharp increase around age four.

This increase, we think, does not reflect the appearance of enhanced abilities to execute lies, so much as a heightened perception of opportunities for the planning and execution of lies. Three-year-olds have trouble deceiving others in simple games that require them to mislead an opponent about the location of an item, by pointing at an empty container rather than at the real location of the item (e.g. Russell et al., 1991). This difficulty does not result from an executive inability to refrain from pointing at the baited box: three-year-olds easily point at the empty box if asked to (Simpson, Riggs & Simon, 2004).

In one study, Carlson, Moses and Hix (1998) showed that three-year-olds' performances in deception games are improved when participants respond by rotating an arrow (instead of pointing). This result is often interpreted as indicating that children's difficulty with lying comes from an inability to execute lies. This data, however, is open to reinterpretation: perhaps the difficulty lies not in execution but in planning. In a follow-up experiment, Carroll, Riggs, Apperly, Graham & Geoghegan (2012) trained three-year-olds for a deception game where subjects responded with an arrow, and replicated the increase in performance observed in Carlson et al.'s original study. Increased performances also obtained, however, when the same children were later tested, on the same task, but asked to respond this time with a pointing gesture. This result is inconsistent with the view that familiar means of communication prevent children from *executing* lies. What may elude them, rather, is devising a deceiving strategy. Once found, the strategy seems easily implemented (see also Carroll, Apperly & Riggs, 2007).

Three-year-olds thus appear to understand that communication is used to manipulate others' beliefs. What they may lack is a sensitivity to « deception affordances », i.e. situations that afford lying (Mascaro & Morin, 2010): far from being cognitively unable to lie, young children may simply be prevented from deceiving others by sheer honesty. For them, communicative situations seem to

afford the communication of true and relevant information more strongly than they do for adults. In other words: Three-year-olds are honest.

Lessons from the epistemic domain: Three-year-olds are trustful

A similar developmental pattern is observed in the epistemic domain. Children's tendency to assume that what is communicated can be false increases around the age of four. In "false signs tasks", children have to interpret a sign that becomes outdated as reality changes (Parkin, 1994, cited in Leekam et al., 2008), or to predict what will result when a character is given a false piece of information (Bowler, Briskman, Gurvidi & Fornells-Ambrojo, 2005). In these tasks, young preschoolers tend to misinterpret the sign — to claim that it is still telling the truth when it is in fact outdated. Children's performance on this type of task correlates moderately with their performance on standard false belief tasks, even after controlling for various dimensions such as age (Parkin, 1994, quoted in Leekam et al., 2008), verbal mental age (Bowler Briskman, Gurvidi & Fornells-Ambrojo, 2005) and performance on a false photograph task (Leekam et al., 2008) (but see Sabbagh, Moses & Shiverick, 2006).

Yet, there are reasons to believe that young children can assess the match of a message with other sources — with their perception, their memory, their inferences, or with other messages. Infants as young as nine months old are sensitive to mismatches between words and reality (Gliga & Csibra, 2009; Koenig & Echols, 2003; Parise & Csibra, 2012). Toddlers and three-year-olds are more likely to request information from labellers who proved accurate in the past (Begus & Southgate, 2012; Koenig & Harris, 2005). They preferentially learn from such accurate informants; they remember their testimony better (e.g., Koenig & Woodward, 2010). Such modulations of trust by accuracy would be very hard to understand if children paid no heed to the fit (or lack thereof) between reality and what speakers say about it. Additional studies also indicate that, from toddler age, children have

a capacity to assess mismatches between what is communicated and what is really the case. Around age two, children start to produce jokes that consist in misnaming objects (Dunn, 1991). They also show a capacity to assess whether an utterance is right or wrong (Pea, 1982). It is also around that age that toddlers start to use negation to contradict what others say (Hummer, Wimmer & Antes, 1993). Toddlers also interpret others' comments on the reliability of testimonies. In Fusaro & Harris (2012), 24-month-olds are more likely to trust what has been said by an informant when a third party assents to it (by nodding), than when the third party dissents (by shaking her head). If, following the (disputed, but) dominant theory of truth in philosophy, we admit that falsity is a lack of correspondence between facts and representations (see e.g., David, 2009), we are led to conclude that two- to three-years old children have the conceptual wherewithal to treat communicated information as false. Their difficulties with resisting gullibility must lie elsewhere.

These difficulties may reflect a change in baseline expectations about the reliability of assertions. As a direct test of this possibility, one of us (Mascaro), presented three-year-olds with a hiding game where participants had to discover the location of an item on the basis of a misleading informant's testimony. This testimony was, as children were directly told, 'not true' (in another condition, the informant 'made a mistake'). Even three-year-olds were able to reject these testimonies, and to infer the true location of the hidden item. Interestingly, when asked to recall what the informant had said, many mistakenly replied that he had pointed them to the right location. Children showed no such bias when asked to recall which box the informant touched, thus suggesting that they had correctly memorised the puppet's actions (for similar memory effects, see Robinson, Mitchell & Nye, 1995). These data are consistent with the view that three-year-olds can treat communicated information as false, but also have a strong assumption that assertions are accurate. In other words: Three-year-olds are trustful.

We have reasons to think that two- to three-year-old children possess competences that allow them to represent beliefs, and to treat communicated information as false. Yet around the age of four, they become more likely to lie, and less likely to assume that assertions are true. This change coincides with the increase of children's vigilance towards deception and mistakes in false communication tasks. There are reasons to doubt that this change is underpinned by the emergence of entirely novel metarepresentational abilities. Rather, it seems that three-year-olds are more honest, and trustful, than older children and adults. The change in children's trust observed around the age of four, could be due to a revision of children's expectations about the honesty and reliability of communication and communicators. Three-year-olds are competent, selective social learners. Yet, without being completely gullible, they appear as much more trusting than older children and adults. This higher-than-average trust in communication need not take the form of "unlimited" credulity (Reid, 1764/2007, p.120). In fact, baseline trust is always weighted against available counter-evidence, as evidenced by the fact that even three-year-olds reject communicated information if it contradicts what they perceive (or remember with enough confidence). Similarly, to say that young children are more trustful than older humans is not tantamount to saying that they are indiscriminate learners. Young children may have a higher baseline level of trust in communicated information, while still being able to choose between better and worse informants (Shafto, Eaves, Navarro & Perfors, 2012).

What is it that young children trust so much? People, intentional communication, or familiar forms of expression?

Three components could contribute to children's higher-than-average trust in communication. They may be more disposed to place their trust in *people*. Their trust may also be elicited by the recognition of communicative intent. Or else it could be that children set great store by familiar

forms of communication (such as pointing). In our view, a plausible case can be made for each of those three options.

First, young children may have a stronger-than-average assumption that people are generally benevolent and competent. In Corriveau, Meints and Harris (2009), children were familiarized with accurate informants (who named objects by their true names), inaccurate informants (who named objects by wrong names), and neutral informants who merely drew attention to objects. In a subsequent test, three- and four-year-olds learned preferentially from neutral (rather than inaccurate) informants. Four-year-olds also selectively learned from accurate (rather than neutral) informants. However, three-year-olds did not learn preferentially from accurate, as opposed to neutral informants — they seemed to take accuracy for granted. This pattern could reflect a higher baseline level of trust in people's accuracy (see also Doebel and Koenig, 2013 for a similar but more tentative pattern of data, with informants varying in benevolence).

Children's trust in communication, however, is not exhausted by their general trust in people. In Palmquist and Jaswal, (2012), three-year-olds were presented with a hiding game in which one actor hid a ball in one of four cups, while the other actor turned away. Later on, each of the two actors grasped a different cup by the top. In that case, three-year-olds had no difficulty indicating that the actor who hid the cup was the more knowledgeable of the two. On the contrary, when the actors *pointed* at different cups, instead of grasping them, three-year-olds were at chance. They could not tell which actor was the most knowledgeable, though they did remember which one hid the ball. Thus, communication (at least in certain forms) creates an assumption of knowledgeability that is stronger than that elicited by other behaviors (such as grasping). This leads us to two additional possibilities: children may have higher-than-usual expectations about communication as such, or about certain forms that communication takes.

Part of young children's trust may be elicited by the recognition of an intention to communicate (Mascaro & Sperber, 2009; Heyman, Sritanyaratana & Vanderbilt, 2013). By offering information willingly, communicators imply that their input is worth processing, and thus present themselves as benevolent and competent. As a consequence, recognising an intention to communicate could heighten children's trust. For example, in two independent studies, preschoolers who had to interpret an ambiguous request followed pointing 12.5% of the time when its ostensive, or communicative nature was reduced (Jaswal & Hansen, 2006), but did so 97.9% of the time when pointing was clearly ostensive (Grassman & Tomasello, 2010). Likewise, in Leekam, Solomon and Teoh (2010) three-year-olds' tendency to follow an unfamiliar signal (e.g., an arrow, or a toy replica) was stronger when the unfamiliar signal was accompanied by positive facial emotions. Possibly, these positive facial emotions make it easier for children to recognise the experimenter's communicative intention. This, in turn, could prompt children to look more keenly into what the experimenter is trying to convey with the unfamiliar signals that he is manipulating. Similarly, in Heyman et al. (2013), three-year-olds have difficulties mistrusting an informant when he used an unfamiliar signal with an easily identifiable communicative intention.

These last two studies suggest that children's trust in communicated information partly depends on the recognition of communicative intent, regardless of the form of communication employed. That said, some particular forms of communication may be more likely to elicit trust in children — starting with those that have proven reliable in the past, first of all pointing or verbal testimony (Couillard & Woodward, 1999; Jaswal et al. 2010). For example, in Palmquist, Burns & Jaswal (2012), three-year-olds' capacity to learn from the better informed testifier was disrupted when informants used pointing to communicate, but not when they used unfamiliar cues (pictures placed as markers). Why should pointing be more disruptive of children's selective learning? Perhaps because it has been reliable many times before, unlike unfamiliar cues (for similar views and further relevant data, see also Couillard & Woodward, 1999, and Jaswal et al., 2010; however note that in

these two papers training may lead trustful children to reinterpret unfamiliar signals as honest indicators, revealing which box they should not select).

Conclusion: Epistemic vigilance grows in a social environment

Detecting deception on the basis of purely behavioral cues is hard, even with high technology equipment. Yet, in a certain sense, detecting lies and deception is intuitive. In this chapter, we reviewed the early development of capacities that are arguably part of humanity's common toolkit for lies-detection: assessing the truth or falsity of what is said (epistemic component) and anticipating the ploys by which people manipulate others' beliefs (mindreading component).

Despite possessing early competence in these domains, three-year-olds are often oblivious to the possibility that they may be misinformed, or that they may misinform others. Around the age of four, children revise this trustful stance towards others, and towards communication. This revision is what permits their increased vigilance towards misinformation. It could reflect a change in baseline assumptions concerning the reliability of people, of communication, and (possibly) of some familiar forms of communication. This change is also associated with an increased interest for deception in stories, and in games such as hide-and-seek. It has counterparts in children's use of lies. It coincides with a period in most children's social life, when they start to interact more and more with their peers, after many years spent under the care of (usually) benevolent adults.

Caregiving relations are typically characterised by a high level of overlap between the interests of caregivers and « care-receivers » — an alignment of interests and desires that, for children, justifies a stance of trustful dependence. In these circumstances, keeping an eye out for deception (or for malign intentions more generally) is not as important as it will later be. In any event, young children have little choice in the matter. Relations with peers are different. They require a higher level of autonomy and vigilance. The increase in epistemic vigilance observed around the age of four is a crucial ingredient of a child's social savvy.

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