

William James, 'The World Of Sense' and Trust in Testimony

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Abstract: William James argued that we ordinarily think of the objects that we can observe—things that belong to 'the world of sense'—as having an unquestioned reality. However, young children also assert the existence of entities that they cannot ordinarily observe. For example, they assert the existence of germs and souls. The belief in the existence of such unobservable entities is likely to be based on children's broader trust in other people's testimony about objects and situations that they cannot directly observe for themselves.

1. Introduction

In *The Principles of Psychology*, William James (1890/1983) devotes a chapter to our perception of reality. He starts from the premise that we all know the difference between 'imagining a thing' on the one hand and 'believing in its existence' on the other. Yet he insists that this evident difference is not necessarily apparent to the young child. He asks us to consider a newborn entertaining the mental image of a candle in the absence of an actual candle. Such a newborn, he claims, would assume that the candle is real rather than imaginary. Citing the earlier claims of Spinoza concerning a boy who imagines a winged horse, he argues that when an entity is conjured up in the imagination, there is a natural or default tendency to assume—in the absence of any idea that contradicts it—that the entity exists. James writes: 'Any object which remains uncontradicted is ipso facto believed and posited as absolute reality' (James, 1890/1983, Vol. II). He then proceeds to discuss 'the many worlds' that we contemplate—among them, the world of sense, the world of science, and the various supernatural worlds (including the Christian Heaven and Hell, the world of Hindu mythology, etc.). He argues that despite the multiplicity of these worlds, we elect from among them one that has an ultimate or unquestioned reality and for most of us, it is observables—the 'things of sense'—that generally have this preemptive or superior position. We will discuss two of the claims advanced by James: his developmental claim that children are likely to treat imaginary entities as if they were real, and his larger, non-developmental claim that, for most of us, it is 'things of sense' that occupy a privileged position among the various worlds that we contemplate.

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1.1 Children's Differentiation between Fantasy and Reality

Casual observation does, at first sight, lend credence to the assumption made by James that young children are prone to mistake the products of their imagination for reality. Consider, for example, the case of two young children who pretend that a monster is lurking behind the door or inside a box, and then display a fearful reaction to their own pretence. Alternatively, consider the case of a child with an imaginary companion who becomes distraught when the companion gets lost, left behind, or ignored by other family members. It is tempting to conclude that in such cases children are confusing the product of their imagination with reality. They come to think of the imaginary monster as a real monster, poised to attack them; or they come to think of the imaginary companion as a real companion, accompanied by the joys and woes of a real companion. However, various findings and considerations undermine this proposal.

First, when children are invited to imagine an entity, whether it is a relatively prosaic entity, for example a pair of scissors, or a more exotic entity, for example a witch who is chasing after them, preschoolers correctly judge that the imagined entity is not real and they correctly judge that it cannot be seen by other people (Harris *et al.*, 1991; Wellman and Estes, 1986). This capacity for differentiating between the products of the imagination and reality is present even among children who display a relatively elaborate imaginative life. For example, children who invent an imaginary companion and play with that companion for weeks or months are clear nonetheless that the companion is merely imaginary (Goy and Harris, 1990; Taylor, Cartwright and Carlson, 1993). Finally, the fact that children show emotional reactions such as fear or concern toward the products of their own imagination is not convincing evidence that they think of those products as real. After all, adults display similar reactions to fictional representations in novels, plays, and films. Yet, it is unlikely that their emotions spring from any confusion between what is imaginary and what is real. Rather, it is plausible that children and adults alike, particularly when they are absorbed in a fictional world, display emotional reactions to the contents of that world but are still able to acknowledge that they are responding to mere fictions (Harris, 2000). In short, young children, like adults, can conjure up an imaginary world, and at any give moment they can easily become emotionally involved in that fictional or make-believe world. Nevertheless, that absorption is not an obvious indication of ontological confusion.

1.2 Accepting the Existence of the Invisible

To the extent that children rarely, if ever, confuse what they have imagined with what is real, it might be thought that their ontological dilemmas are over. However, there is another potential confusion that might assail them. If children set up a dichotomy between what they can observe, as compared to what they cannot observe but can entertain in their imagination, they might be tempted to draw the conclusion that what really exists is what is accessible to first-hand observation—all

the rest is merely imaginary. Wellman and Estes (1986) report comments by young children that are consistent with this conflation. For example, one child said: *'If it's not real you can't see it'*. Wellman and Estes also discussed various entities with children, for example *'an ant crawling on the ground'* and *'an ant riding a bicycle'* and asked children questions about each item, including: *'Have you ever seen (item)?'* and *'Really, are there (item)?'* Three-, 4-, and 5-year-olds performed very accurately. More specifically, they answered both questions positively for the real items and negatively for the imaginary items, raising the possibility that there is a strong association in their mind between what can be observed and what is real on the one hand and what cannot be observed and what is imaginary on the other.

On the basis of the proposals made by James, it would, in fact, be fairly unsurprising if children connect what can be observed with what is real. He himself endorses just such a connection in the minds of all of us—children as well as adults. If children do make such a connection, it is plausible that they adopt a simple empirical strategy whenever they are invited to make a reality judgment. Thus, they might effectively decide that: *'What exists is what I have observed—or could observe. Things that I cannot observe do not exist'*. Yet, many of the creatures, objects, and events that exist in the world—or have existed—cannot be easily encountered or observed, particularly by young children. They are not *'things of sense'*—to borrow the phrase used by William James. Consider the existence of germs or oxygen. Children do not ordinarily have an opportunity to see these things, and yet they undoubtedly exist. This simple point about *'invisibles'* has wide application. Children cannot ordinarily see Hannibal or Abraham Lincoln. They cannot easily contemplate the destruction of Carthage or the war in Vietnam. Yet obviously these personages and events are, or were, real. If James is correct about how we perceive reality, children should assign these invisibles to a different world from the *'things of sense'*. At best, these invisibles might gain some weaker or second-hand infusion of reality by dint of their association with entities that are observable.

However, it is also feasible that James has over-stated the role of first-hand observation. Children, like adults, learn about many ordinarily invisible entities thanks to others' testimony. They hear warnings about germs, narratives about the life of Abraham Lincoln, or recollections of the war in Vietnam. Conceivably, then, children do not simply adopt a strategy for assessing what is real that is narrowly grounded in actual or potential, first-hand observation but a broader strategy, one that is deeply influenced by others' testimony. More specifically, children may come to use others' testimony as a way to expand their conception of reality. Thus, they come to rely on testimony as a time machine enabling them to contemplate the past or as a microscope enabling them to contemplate germs. This contemplation takes place within the confines of their imagination but it is, nevertheless, a contemplation of reality.

To examine whether children are restricted to a narrow, empiricist strategy or also use a strategy that is based on others' testimony, we presented two age groups of young children—4-5-year-olds and 7-8-year-olds—with three different types

of entity: 'Impossible' entities (e.g. Flying Pigs, Barking Cats); 'Real' entities (e.g. Rabbits, Giraffes); and 'Scientific' entities that are ordinarily invisible to the naked eye (e.g. Germs, Oxygen) (Harris *et al.*, 2006). Children were asked: 'Are there really (flying pigs/rabbits/germs) in the world?' Following their yes or no answer, they were asked whether they were 'very sure' or 'not very sure' about their answer. Children were given scores of 0 to 3 for each item where 'No, there are no...in the world—I'm very sure about that' was coded as 0 and 'Yes, there really are...in the world—I'm very sure about that' was coded as 3. So, higher scores indexed a stronger belief in the existence of the entity in question.

If children assess the reality status of these various entities using an empiricist strategy, they should conclude that rabbits and giraffes clearly exist—after all they can be seen—whereas they should conclude that impossible entities such as flying pigs and scientific entities such as germs do not exist—since they cannot be seen. On the other hand, if children are guided by others' testimony, they should acknowledge the existence of germs. Indeed, they might be just as convinced about the existence of germs as they are of giraffes. Our findings are displayed in Figure 1.

Inspection of Figure 1 provides strong evidence against the claim that children rely exclusively on an empiricist strategy. Children appear to make use of a testimony strategy as well. They differentiate sharply and appropriately between non-existent, impossible entities such as flying pigs and ordinary, real entities such as giraffes. They confidently dismiss the existence of flying pigs but confidently assert the existence of giraffes. In addition, however, they also insist on the existence of scientific entities that ordinarily they would not have seen. Thus, notwithstanding the speculations and findings discussed above, both age groups avoid the potential error of treating unobservable entities (e.g. germs) as not real. Indeed, it is striking to note that their existence judgments for unobservable 'scientific' entities (e.g. germs) are just about as confident as their existence judgments for observable 'real' entities (e.g. giraffes).

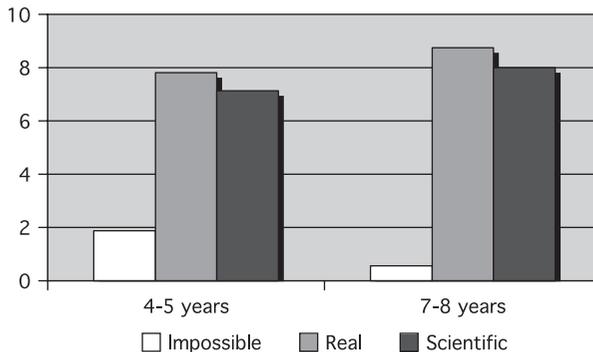


Figure 1 Total existence scores (maximum = 9) by age and type of entity

Children were also asked to justify their existence judgments and these justifications were assigned to three different categories. Children sometimes mentioned an *encounter* (or lack of *encounter*) with the entity, for example, 'I saw them at the zoo', or 'My uncle has one', or (to justify a non-existence judgment) 'I've never seen one'. Children also occasionally mentioned the *source* of their judgments: 'Because I know that—my Mum and Dad told me that' or 'I learnt that at school'. Finally, children sometimes provided a *generalization* about the entity in question: 'Because animals can have germs' or 'They give (you) diseases'. Figure 2 shows the frequency with which children offered these three types of explanation for real as compared to scientific entities. Since the pattern of justification was similar across the two age groups, scores in Figure 2 are collapsed across 4-5 and 7-8-year-olds. In addition, justifications for impossible entities are not included since they were essentially included as control items to make sure that children would offer non-existence judgments.

Figure 2 shows that for real entities, children focused primarily on possible encounters rather than offering generalizations. They effectively adopted an empiricist strategy. They explained that they knew that giraffes were real: 'Because I saw them at the zoo'. By contrast, for scientific entities, they frequently offered generalizations but rarely mentioned an encounter. They explained, for example, that germs were real because 'They give (you) diseases'. The pattern of justifications therefore underlines the fact that despite children's similar level of confidence in the existence of giraffes and germs, the origins of that confidence appears to be quite different. Whereas children think of giraffes and rabbits as creatures that they could meet and observe, in line with the empiricist strategy, they do not think of germs and vitamins in the same way. They mention their properties—presumably properties that they have heard people refer to, in line with the testimony strategy. Indeed, an interesting feature of children's generalizations about scientific entities is that they often invoked causal properties. Consider, for example, the two generalizations cited above: 'Because animals can have germs' and 'They give

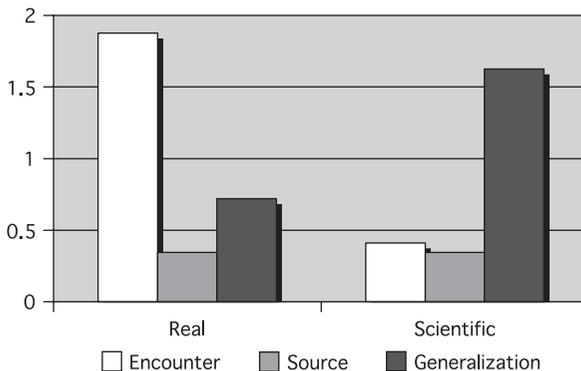


Figure 2 Mean number of three different types of justification by type of entity

(you) diseases'. The first simply refers to carriers of germs but the second refers to the causal powers of germs. When we examined the generalizations that children provided, half of them included such reference to causal powers.

One final result deserves comment. Figure 2 shows that children rarely mentioned the source of their knowledge (e.g. 'My Mum and Dad told me'). Prima facie, this might be taken as counter-evidence to the claim that children rely on others' testimony for learning about the existence of unobservable entities. If children do learn about scientific entities from other people, why do they not say so? However, a plausible interpretation of the paucity of references to particular sources—given the other indications that children do indeed rely on testimony—is that children suffer from what is often referred to as *source amnesia*. They know something, but they do not know how they know it. Research with young children has shown that when they are taught a new fact—for example that tigers' stripes provide camouflage—they often claim immediately afterwards that they had known that fact for a long time (Esbensen, Taylor and Stoess, 1997; Taylor, Esbensen and Bennett, 1994). Control questions confirm that this is not due to some generalized difficulty with time estimation. They know, for example, whether they have just received a gift or received it long ago. By implication, the rarity of children's references to others' testimony should not be taken as evidence that they do not learn from testimony.

Summing up, this initial experiment provided evidence that children do not rely exclusively on an empiricist strategy for deciding what exists. For these young 4–8-year-olds, entities that cannot be observed—germs and vitamins—have as much reality as entities that belong, much more straightforwardly, to 'the world of sense'. Entities that they cannot observe and can therefore represent only in their imagination are nevertheless taken to be real.

1.3 An Alternative Interpretation

On reflection, this apparently clear result might actually stem from another potential ontological muddle. Suppose that young children do attend to others' testimony but in a relatively superficial or indiscriminate fashion. Suppose that whenever they hear people refer to some unfamiliar entity or being—germs or monsters, Spartans or Lilliputians, Napoleon or Santa Claus, they take it to be a reference to something real. Such a heuristic would explain the pattern of results observed so far. After all, children will have heard references to giraffes and also to germs but rarely, if ever, to barking cats.

To examine, and hopefully reject, this proposal, we can examine children's conception of objects that do get talked about but not as if they were real. Equally, we can examine children's conception of objects that do get talked about and are talked about as if they were real. If children differentiate between these two types of entity, judging the latter to be real and the former not, it would be strong evidence that children attend to the pattern of discourse that they encounter. Indeed, the evidence for the impact of patterns of discourse would be especially

persuasive if children differentiated between these two types of entity even though neither type is actually real. That would indicate that the pattern of discourse that they are exposed to ‘trumps’ the actual status of the entity so far as young children are concerned. Accordingly, children aged 5–6 years were asked about three different type of entity: ‘Non-endorsed’—entities that are referred to but not generally spoken of as real (e.g. mermaids, ghosts); ‘Endorsed’—entities that are generally spoken of as real, at least in conversation with young children (e.g. Santa Claus, Tooth Fairy), even if they are not; and, finally, ‘Scientific’ entities (e.g. germs, oxygen) that are generally regarded as real. If children adopt a ‘what-gets-mentioned-is real’ strategy, they should believe in the existence of all three types of entity. On the other hand, if they are sensitive to whether or not the pattern of discourse surrounding each entity implies its reality or lack of reality, they should differentiate between non-endorsed and endorsed entities, and indeed they should regard endorsed and scientific entities as quite similar.

As in the preceding experiment, children were asked to say whether or not the entity really exists and to say whether or not they were sure of that judgment. As before, children proved to be confident about the existence of scientific entities. In addition, however, they were almost as confident about the existence of endorsed beings such as Santa Claus. On the other hand, they were skeptical about the existence of extraordinary beings such as ghosts and mermaids—creatures that are ordinarily met in the context of fairy stories rather than everyday conversation.

We again asked children to justify their claims about existence and classified the justifications that they provided into three different categories: *Encounter*, *Source* and *Generalization*. Figure 3 shows how often children offered each type of justification for the three types of entity. There are two noticeable features to Figure 3. First, the way that children justify their existence claims for non-endorsed entities differs from the way that they justify them for endorsed and scientific entities. For non-endorsed entities, children’s justifications are spread across all three categories, with some emphasis on (the absence of) encounters. Second,

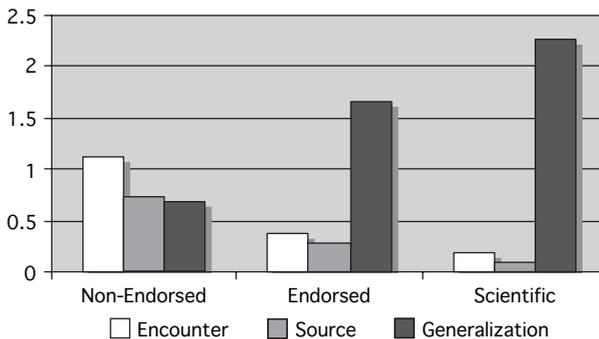


Figure 3 Mean number of three different types of justification by type of entity

children's pattern of justification is quite similar for endorsed and scientific entities. Thus, whether they seek to justify their assertions about scientific entities such as germs or endorsed entities such as Santa Claus, the most frequent justification is to offer a generalization about the entity.

Taken together, the findings for judgments and justifications indicate that young children are not prone to indiscriminate credulity in anything that they hear people talk about. When they hear an unobservable entity mentioned, they take some cognizance of the surrounding discourse. They differentiate between those entities that the community discusses as real and those that it invokes but only as imaginary or fictional. Follow-up studies have confirmed that this pattern is quite stable across different cultures. The results just described come from English-speaking children interviewed in Oxford and Boston. However, a similar pattern has emerged among Spanish-speaking children (age-range 4–8 years) in Madrid (Guerrero and Harris, 2008) and from Tzeltal-speaking children (age-range 6–13 years) from the Mayan community of Tenejapa, in Mexico (Abarbanell, 2006). In each community, children asserted the existence of various ordinarily invisible scientific entities as well as culturally endorsed special beings. At the same time, they were likely to deny the existence of non-endorsed or impossible creatures.

2. Mind and Soul

The results presented so far show that children believe in the existence not just of scientific entities but also of endorsed entities such as Santa Claus and the Tooth Fairy. Still, it could be objected that entities such as Santa Claus and the Tooth Fairy constitute a very narrow and special class. After all, children are effectively duped about their existence. In the first place, despite knowing that they actually do not exist, adults imply that there really are such extraordinary beings—at least when talking to children. Yet they do not imply their existence when talking to their fellow adults. Second, adults conspire to leave evidence for the existence of these special beings in the form of gifts and money. Thus, it might be argued that children ordinarily do not have much credence in beings or entities that they cannot observe. They only do so in those rare cases in which the adult community conspires to systematically offer them misleading testimony and evidence. Indeed, children do eventually realize that they have been misled because virtually all of them eventually judge that Santa Claus and the Tooth Fairy do not really exist.

There are two answers to this objection. First, children also believe in the reality of invisible, scientific entities—as we have seen. Yet they have not generally been provided with any misleading testimony about their existence. Moreover, adults do not doctor the evidence about germs and vitamins in the way that they do for Santa Claus and the Tooth Fairy. By implication, children are credulous toward the testimony they receive whether adults do or do not conspire to mislead children. A further reply to this objection is that there are also non-scientific entities for which the available discourse is not obviously disingenuous. Yet

children—and indeed adults—frequently believe in such entities. We discuss a notable example of one such entity in the next section: the soul.

2.1 The Concept of the Soul

Richert and Harris (2006, Study 1) studied children's concept of the soul by asking 6-, 8-, and 10-year-olds about the effects of a religious ritual, namely baptism. The majority of children in all three age groups claimed that the ritual would bring about a change in the baptized baby; and more specifically, they claimed that the change would be on the inside of the baby, it would be invisible, and it would be intangible. In addition, most children appeared to regard the soul as the seat of this imperceptible transformation. Thus, they were more likely to say that the soul would be affected by the ritual than either the mind or the brain. By implication, the majority of these young children believed in the existence of the soul, even though the soul is not part of 'the world of sense'.

More direct support for this initial conclusion emerged in a follow-up study. Children aged 6-, 9-, and 11-years were asked about the existence of the soul, the mind and the brain (Richert and Harris, 2006, Study 2). Most children, irrespective of age, claimed that all three entities exist. At the same time, children differentiated among them. They were more likely to say that the soul remains unchanged over time as compared to either the mind or the brain. Children also differentiated among the three entities with regard to their function. The mind and the brain were primarily linked to cognitive functions whereas the soul was primarily linked to spiritual functions (e.g. as a life-giving force: 'It makes the baby alive'; or as something continuing in the afterlife: 'It goes to Heaven when you die').

A further study with adults extended this developmental story (Richert and Harris, 2008). A large, diverse sample of US students ranging from 17 to 51 years was interviewed about their conception of the ontological and functional properties of the mind as compared to the soul. The pattern of replies showed that participants generally tied the existence of the mind to the human lifecycle of conception, birth, growth, and death, and primarily associated the mind with cognitive as opposed to spiritual functions. By contrast, the existence of the soul was less systematically tied to the lifecycle and frequently associated with spiritual as opposed to cognitive functions.

The ontological questions are especially pertinent to this differentiation. Participants were first asked whether the soul and mind exist. The majority asserted the existence of both entities even though a sizable minority did acknowledge that they were uncertain about the soul. When asked when the soul and the mind begin, whether they change in the course of a lifetime, and whether they continue after death, participants gave a different pattern of replies for the two entities. In the case of the mind, almost all participants claimed that it begins either at conception or later in the course of the pregnancy (91%), that it changes over time (86%), and that it ceases to function at death (71%). By contrast, in the case of the soul, although most participants claimed that it begins at conception or later (68%),

a sizable minority claimed that the soul begins prior to conception (26%) and remains unchanged over the lifetime (28%). In addition, a large majority claimed that the soul continues on in some way after death (84%).

Thus, most participants offered a secular view of the mind. They readily conceptualized its beginning, development, and cessation in relation to the human lifecycle, constrained by the biological cycle of conception, growth and death. The soul, on the other hand, was regarded as a more constant and enduring entity, less evidently tied to the lifecycle. A minority of participants claimed that it exists prior to conception and remains invariant across the lifespan. The majority asserted its continued functioning after death. More generally, the findings showed that many adults do not espouse a simple mind-body dualism. They have distinct conceptions not just of the mind as compared to the body but also of the mind as compared to the soul. Indeed, surveying participants' replies across a larger set of seven questions, the majority gave different replies for at least two of the seven questions when asked about the mind as compared to the soul. In other words, the differentiation between mind and soul was not confined to a minority of theologically sophisticated participants.

The belief in an enduring, soul-like essence, distinct from mentation and cognition does not appear to be confined to Western, Christian communities. The Lohorung of Eastern Nepal make a related distinction between a person's *lawa* and their *niwa* (Hardman, 2000). Like the US respondents just discussed, the Lohorung think of *niwa* as slowly increasing in strength during childhood. It is linked to cognitive processes insofar as the Lohorung invoke its increasing strength to explain the emerging capacity for reflection and awareness shown by older children and adolescents as compared to toddlers and young children. A person's *lawa*, by contrast, is regarded as having a more obvious connection to their individual essence or identity. It can occasionally leave the body even during the person's lifetime, especially during dreams, but death signals its permanent departure from the body.

As a further example, consider the Vezo of Western Madagascar who distinguish three different aspects of a person: *vata*, *say*, and *fanahy*. The term *vata* is approximately equivalent to the English term 'body' whereas the terms *say* and *fanahy* refer to non-corporeal aspects of the person. As is the case for *niwa* among the Lohorung, a person's *say* is thought to vary in magnitude or power and its growth or decline is invoked to explain variation in the capacity for intelligent or competent behavior. Thus, like *niwa* it can be tentatively regarded as equivalent to the English term 'mind'. The *fanahy* of a person is associated with their spiritual and social qualities rather than their cognitive competence. Individuals are said to have a beautiful or good *fanahy*—implying that they are generous—or a bad *fanahy*—implying that they are stingy or mean. Adults typically assert that when people are asleep their *fanahy* may wander around detached from the body and that it leaves the body permanently at death. Thus, like the Lohorung term *lawa* the term *fanahy* can be regarded as approximately equivalent to the English word 'soul' or 'spirit'.

Following up on these ethnographic observations, Astuti and Harris (2008) obtained quantitative evidence for the way that Vezo distinguish between mind and soul and for their conception of the afterlife. Children and adults were asked various questions about which specific mental and bodily processes, if any, continue to function after death. After answering these questions about specific processes, participants were asked three more global questions, namely whether the body, the mind and the soul continue to function after death. Figure 4 shows the percentage of children and adults who asserted that functioning stops with respect to each entity. Inspection of Figure 4 shows that there is universal agreement that the body ceases to function at death. There is some belief in the continued functioning of the mind. Finally, in line with the findings presented so far, belief in the continued functioning of the soul after death is widespread. Moreover, this belief is noticeably more frequent among adults than children.

These various findings show that a belief in the existence of the soul—or some near equivalent—is widespread. That belief is not confined to Christian cultures, and it is found among both children and adults. More generally, these findings underline the point that a belief in the existence of invisible entities is not confined to scientifically proven entities, nor to the special beings that adults invoke for children.

3. Theoretical Implications

How should we account for the above pattern of findings? More specifically, how should we explain that fact that children and adults alike have little hesitation in endorsing the existence of entities that evidently do not belong to the world of sense? Some of these entities are not altogether excluded from that world. For example, germs and vitamins can be observed with the help of a microscope. Yet it seems unlikely that children pay much heed to that fact. They are unlikely to know much about what can and cannot be seen with the help of a microscope. In any case, as we have just seen, there is ample evidence for a belief in entities that

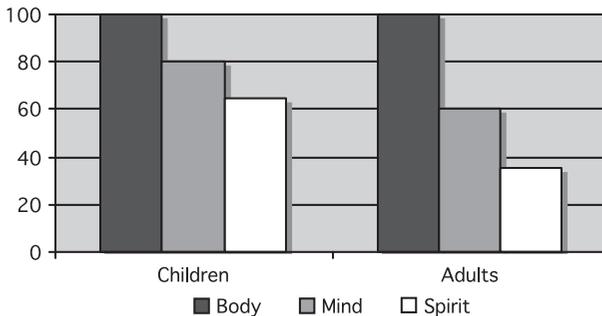


Figure 4 Percentage of children and adults claiming that the body, the mind or the soul cease to function at death

cannot be seen even with the help of a microscope. Both children and adults believe in the existence of the soul but not presumably because they or anyone has ever seen one.

There are two broad avenues of explanation that might be pursued. One possibility is that the widespread belief in unobservable entities—such as germs or souls—is part of a natural tendency to give credence to hidden, causal mechanisms or essences. On this argument, the belief in such entities draws its strength from a pervasive but dedicated cognitive disposition to explain and interpret observable phenomena in the light of unobservable mechanisms, be they occluded or occult. Arguably, that disposition is innate or at least heavily prepared for functioning in early childhood. The main limitation of this account is its very specificity. It invokes a relatively narrow and dedicated mechanism for what appears, on reflection, to be a widespread and heterogeneous phenomenon. It is true that the widespread belief in the soul seems to imply an inclination to think about hidden essences. Yet other examples of religious and non-secular belief in unobservables seem too ornate and narrative-like to rest on such a pared-down mechanism. Is a belief in the Virgin Birth, the caste system, or the power of witchcraft all to be attributed to a localized capacity for thinking about hidden mechanisms?

A different possibility is that the belief in unobservable entities is not the consequence of a dedicated and specific capacity. Instead, it is part of a more general and wide-ranging tendency to entertain and trust in the truth of testimony. As discussed earlier, children learn about many events via testimony because they were not present at the event in question. For example, they learn about the historical past via testimony. In addition, however, they can learn about the unseen present or the immediate past or future. In these latter cases, it is often feasible for children to check the testimony they receive. For example, when they are told about some enterprise or mishap that is taking place in the garden or the kitchen they can go and see for themselves. Yet it seems unlikely that their belief is held in suspense until they check the situation with their own eyes. Rather, it seems likely that they approach the scene already convinced of the existence and reality of what they are about to see. What they do eventually see is, so to speak, 'recognized'—given its correspondence with that they have already been told. Stated differently, it is unlikely that children hold testimony in abeyance, waiting for its confirmation, before they start to construct a mental representation of what they can eventually observe. To the extent that the mental representation is taken to be a representation of reality and not of some fictional or possible world, we arrive at the conclusion that much of the world of sense privileged by William James, already enjoys a prefigured or precognized existence in the minds of children who are in receipt of testimony. On this account, children's faith in what they are told about the secular world is not so dissimilar to the faith of religious believers in what they are told about the spiritual world. Testimony to the effect that the soul endures, that there is an afterlife, and that the world of the ancestors truly exists need not be assigned to the mental box marked 'pending'. That testimony can simply be regarded as a true description of an unobserved hinterland, eventually

accessible perhaps but for the moment to be taken on trust. In the next section, I review recent evidence suggesting that this hinterland is accepted and understood almost as soon as language is acquired.

3.1 Children's Early Understanding of Testimony

When and how do children start to update and enrich their conception of the world on the basis of others' testimony? So long as other people's remarks are mainly tied to the context of the utterance, children derive no major benefit in terms of information from what people tell them. What people tell them is more or less equivalent to what they can immediately observe for themselves. However, when children are told about events and entities displaced from the utterance that equivalence is reduced and may even be eliminated.

When do children start to understand such displaced utterances? The available research remains tantalizing and fragmentary but we can begin to trace a developmental path. In a pioneering study, Huttenlocher (1974) found that children around the age of 13 to 14 months display clear signs of understanding references to an absent object or person. Provided the absent object is located in its customary place, children go in search of it. For example, when Wendy was 13 months, she was asked: 'Where are the fish?' In response, she went around a large barrier to another room where the fish tank was located. Similarly, when asked, 'Where is the mirror', Kristen at 13 months, was able to crawl from any position in her parents' bedroom and enter the closet where the mirror was housed.

Soon after, infants start to respond appropriately even when the absent object is in an unusual or temporary location. For example, at 14 months Wendy had been feeling cranky and her mother gave her a blanket. This was eventually discarded and put on the couch. Some 10 minutes later, when she was asked, 'Where is your blanket?' she crossed the room to the couch in order to retrieve it. Similarly, at 16 months Craig was in the kitchen when he was asked if he wanted a cookie. He went to the living room and returned with a pile of cookies that had been left on the floor where he had spilled them earlier.

Recognizing that someone is talking about a missing referent and retrieving that referent is just one step on the road to learning from testimony. When we acquire information from someone via testimony, we not only appreciate that they are referring to something absent, we also appreciate that they are providing us with information about that referent, information that we have probably had no opportunity to gather for ourselves, but generally speaking information that we can take to be true. When do children start to appreciate this fundamental aspect of other people's testimony? In particular, when do children update or alter their beliefs about the world merely on the basis of someone else's say-so?

Some initial clues are buried in a report by Jacqueline Sachs (1983) on the emergence of displaced speech in her daughter Naomi. At 22 months, Naomi asked: 'Where's Daddy?' Her mother replied: 'Daddy is working. Daddy will be home tonight. You'll see him tomorrow morning'. One month later, a similar

exchange occurred: 'Where's Daddy? Daddy's in work?' Her mother replied: 'Daddy's at work, honey'. Notice the subtle but telling difference between the two conversations. In the second exchange, Naomi asks where her father is but also proposes an answer: 'Daddy's in work?' The most plausible explanation of this suggestion is that she has learned where Daddy usually is from what her mother has told her on past occasions. She has, in short, learned from testimony. More exotic examples of the same phenomenon appear around the same period. At 22 months, Naomi asked: 'Where's the moon?' and received the following reply: 'Where's the moon? The moon is sleeping. The moon is not out now'. It looks as if Naomi accepted this whimsical reply. During the same month, the following exchange took place. Adult: 'Where's the moon?' Naomi: 'Moon'. Adult: 'Uh huh. Where is it?' Naomi: 'Moon sleeping'.

These two examples suggest that even before their second birthday, children can acquire new information via testimony. They can encode and retrieve information that they could not easily discover for themselves: when Daddy is away from home, he is working; when the moon cannot be seen it is 'sleeping'. Still, it might be objected that Naomi is doing little more than 'echoing' what she has been told earlier. Indeed, traditional criticisms of children's learning from verbal input have frequently implied that such knowledge remains superficial—it is something that the child can repeat back but it is not something that genuinely alters the way that the child thinks about the world. In the case of the two examples involving Naomi, it has to be acknowledged that this objection may have some force. In what sense does she really understand that Daddy is 'working' or that the moon is 'sleeping'?

One way to demonstrate that children's learning from testimony goes beyond mere parroting is to show that it has an impact on the way that children subsequently behave. Patricia Ganea and her colleagues recently reported a compelling experimental investigation of this type of learning (Ganea, Shutts and Spelke, 2007). First, children were taught the name of a stuffed animal—for example, they learned that a toy frog was called Lucy. Lucy was then put to sleep in a basket and the children went to an adjacent room to listen to a story. As they listened, an adult passed by with a bucket, explaining that she was going to clean the table in the room with the toys. She soon came back saying: 'I'm so sorry! I was washing the table, and I spilled water all over Lucy. Lucy is wet now! She's covered with water'. The experimenter reiterated this piece of information: 'Oh no! Did you hear that? Lucy got wet! She's all covered in water' and invited the child to go see Lucy. Once back in the toy room, children were asked to pick out Lucy from three choices: a wet frog, a dry frog and a wet pig. Nineteen-month-olds generally chose at random, but most 22-month-olds successfully picked out the wet frog. This set-up, simple though it is, offers persuasive support for the claim that very young children are not just able to understand and repeat other people's testimony, they also update their knowledge or beliefs about the world on the strength of testimony. When children left Lucy the frog in the toy room, she was dry. When they returned to look for her, they realized that she was now wet. Hence, they

chose the wet frog rather than the dry one. Their only clue to the change in Lucy's state was the testimony provided by the two adults. These findings provide strong evidence that by the end of the second year, children can learn from, and act upon, others' testimony about the way things stand in the world.

4. Conclusions

Human beings have the capacity to learn via testimony from other people's experience. A precondition of learning via testimony is the ability to think and talk about objects and events that are 'displaced'—that are not being experienced as the communication takes place. Children display that ability from the onset of language acquisition. Starting in the second year of life, they talk about absent objects, properties and actions. In thinking about children's learning from testimony, we may ask if children can be told about an event that they have not experienced, and come to treat it *as if* they had experienced it. More specifically, can they treat what other people tell them as a source of information about the world—equivalent in certain respects to first-hand observation? This simple but fundamental question has received little attention but scattered findings indicate that children are able to do this toward the end of the second year. When they are told about some invisible property of a person or an object—be it a parent, the moon, or a toy—they assimilate that information, they repeat it, and they act on it. Arguably, this early faith in the existence of a real hinterland corresponding to the testimony that they hear provides the basis for a larger faith in invisibles that lie beyond the world of sense.

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