

SUPPORTING INFORMATION

False Belief in Infancy: A Fresh Look

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The following notes concern control procedures and additional experiments which could not be discussed in the main text without exceeding the journal's word limit. References that are cited in these notes but not in the main text are listed at the end of the notes.

¹ Similarly, although the FB-yellow infants saw the toy move to green after it had moved to yellow in the belief induction phase, reappearance of the agent at the beginning of the test phase disrupted memory for the immediately preceding movement of the toy to green. Therefore, observation of the toy's movement to yellow in the belief induction phase had the same effect on test performance in the FB-yellow condition as in the TB-yellow condition – reducing the perceptual novelty of the green test event. Why did FB-yellow and TB-yellow infants look more at the green test event than the yellow test event in spite of the fact they had seen three movements to green in the familiarisation phase and only one movement to yellow in the belief induction phase? Research on habituation indicates that although the novelty of a stimulus declines with repeated presentations (frequency), it increases with time since stimulus presentation (delay; Rankin et al., 2009). Therefore, it is reasonable to suppose that, within the parameters of Onishi and Baillargeon's (2005) experiment, the shorter delay between the yellow event and the test more than compensated for the higher frequency of the green event. This could be tested by varying the number of familiarisation trials, and the familiarisation-to-test and belief induction-to-test intervals in Onishi & Baillargeon's procedure.

² Poulin-Dubois and Chow (2009) gave 16-month-old infants training designed to make them believe the agent was reliable or unreliable prior to a test using the familiarisation, belief induction and test trials presented in Onishi and Baillargeon's TB-yellow condition. The infants given 'reliable' training repeatedly found a toy in a container to which the agent had moved her head, directed smiles and said 'Wow', whereas the infants given 'unreliable' training did not find a toy in this container. As in Onishi and Baillargeon's (2005) experiment, the reliable training group looked longer at the green than the yellow test event, but there was no difference in the unreliable training group. This suggests that the perceptual novelty of the yellow test event was reduced more in the reliable group than in the unreliable group by the immediately preceding TB-yellow belief induction trial. In this trial, the agent "watched" as the toy moved from green to yellow. Onishi and Baillargeon didn't give details of the agent's watching behaviour, but Poulin-Dubois and Chow (2009) made clear that the agent's head moved with the toy. Therefore, it is possible that the belief induction trial was less effective in the unreliable group because these infants were less likely to track the movements of the agent's head and thereby effectively to encode the movement of the toy towards the yellow box. (This interpretation of Poulin-Dubois and Chow's (2009) result does not assume that head movement tracking enhances encoding of a correlated stimulus (e.g. toy movement) because the infant represents what the agent can see. The same effect might occur if the movement of an inanimate stimulus, such as an arrow, tracked the movement of the toy towards the yellow box.)

³ In another pretraining study, Yott and Poulin-Dubois (2012) gave 18-month-olds the familiarisation, belief induction and test trials presented in Onishi and Baillargeon's FB-green condition. (They counterbalanced across subjects whether the agent reached to green or yellow during familiarisation trials, but the logic of their design was otherwise identical to that of Onishi and Baillargeon's FB-green condition.) Like the previous study, Yott and Poulin-Dubois found that infants

looked longer at the yellow event on test than at the green event; a result which is consistent with the reappearance of the agent having disrupted memory for the events presented in the belief-induction trial. Prior to familiarisation, the infants in Yott and Poulin-Dubois's study were given training designed to teach them "that objects are never found in the last place they were seen". During each training trial the infants saw an agent place a toy in one of two containers, differentiated by colour and location, and then found the toy in the other box. We cannot tell whether this training influenced the magnitude of the looking time effect in the FB test because the experiment did not include a group that received different training or no training at all. The low-level novelty hypothesis would predict an effect of training on test performance (i.e. 'stimulus generalisation') (Pearce, 1987) to the extent that the relatively low-level perceptual features of the training arrays resembled those used in the FB test. This resemblance was limited in the study by Yott and Poulin-Dubois. For example, rather than yellow and green boxes, orange and blue containers, of unspecified shape, were used during training.

⁴ In one of these control experiments (Experiment 7), Kovács, Téglás and Endress (2010) found that the difference between the Novel-Absent and Novel-Present conditions remained when the test event was presented with a pile of boxes rather than agent Smurf in the left of the frame. This meant that, at the transition between the belief induction and test sequences, in the Novel-Absent condition infants saw boxes suddenly appear in what had previously been empty space, and in the Novel-Present condition they saw boxes replace the Smurf. It is possible that both transitions caused retroactive interference, but the former – an abrupt visual onset (Egeth & Yantis, 1997) – is likely to have resulted in weaker encoding of the events at the end of the belief induction sequence, and thereby in a stronger expectation that the belief induction sequence would end in the same way as the familiarisation sequence. In the other control experiment Kovács et al. found comparably low looking times in the Novel-Absent and Novel-Present conditions when the test event consisted purely of presentation of the occluder in its upright position. The occluder did not fall, and therefore the infants did not see whether there was or was not a ball behind the occluder. The low-level novelty interpretation would not predict a difference between conditions in this experiment because the infants were not presented with a test event that would either confirm or violate their expectations based on their familiarisation and belief induction experience.

⁵ Surian, Caldi and Sperber (2007) counterbalanced the locations of the cheese and apple behind the left and right screens, and had half of the infants observe apple choice and half observe cheese choice in the familiarisation phase. However, for clarity, I have described the procedure used for infants in just one of the counterbalancing groups.

⁶ Surian et al. (2007) called the TB condition the 'Seeing condition' (Experiment 1) and the 'Knowing condition' (Experiment 2), and the FB condition the 'Not-seeing condition' (Experiment 1) and the 'Not-knowing condition' (Experiment 2).

⁷ Luo (2011a) asked whether 10-month-old infants can attribute FBs about the number of objects – one or two – available for selection. A human agent faced the infant across a table. Between the agent and the infant there were two square-shaped occluders, one on the infant's left and one on the infant's right. In FB conditions, the left occluder was opaque and the right occluder was transparent, and in TB conditions both occluders were transparent. Luo's hypothesis was that infants would appreciate that agents could see, and therefore would know about, events occurring in front (relative to the infant) of a transparent occluder, but not see or know about events occurring in front of an opaque occluder.

In the belief induction phase of Luo's first experiment, which preceded the familiarisation phase, infants saw the agent place a block in front of the left occluder, and, when the agent was invisible, saw a cylinder appear in front of the right occluder, and the block removed from the scene by a human hand. In the three familiarisation trials, infants saw the agent reach towards the

cylinder in front of the transparent occluder on the right, and away from the other occluder on the left. In the test trial, the occluders were absent, the cylinder was on the infant's left and the block was on the infant's right. The test event consisted of the agent reaching for the block on the right (Old Path – New Object), or for the cylinder on the left (New Path – Old Object). The results indicated that in the FB condition (when the left occluder was opaque during belief induction and familiarisation) the infants looked longer at the Old Path-New Object event than at the New Path-Old Object event, and in the TB condition (when both occluders had been transparent) they looked at the two events for a roughly equal duration. Luo's second experiment was the same as the first with two exceptions: 1) In the belief induction phase, the agent placed the cylinder in front of the right (transparent) occluder and, in the agent's absence, a hand placed a block in front of the left occluder. Recall that the left occluder was opaque in the FB condition and transparent in the TB condition. 2) In familiarisation trials, the agent reached towards the cylinder in front of the transparent occluder on the right, and away from the block and the other occluder on the left. In the test phase, infants in the FB condition looked equally long at the Old Path – New Object and New Path – Old Object events, but the infants in the TB condition looked longer at the Old Path – New Object event.

Note that each test event in these experiments was novel on one dimension (path or object) and familiar on the other dimension relative to the events observed in familiarisation trials. Therefore, the fact that infants looked equally long at the two events in the TB condition of Experiment 1 and the FB condition of Experiment 2 suggests that, in those conditions, the path novelty and the object novelty were equally surprising. So why did object novelty win out in the FB condition of Experiment 1 and the TB condition of Experiment 2, making the infants look longer at the Old Path-New Object event, when the agent moved towards the block, than at the New Path-Old Object event, when the agent moved towards the cylinder? The FB interpretation suggests that it was because in the FB condition of Experiment 1 the infant thought that the agent had falsely believed she was choosing against the block during familiarisation, and in the TB condition of Experiment 2 she had truly believed she was choosing against the block during familiarisation. However, the conditions that would support these belief attributions by the infant were confounded with low-level features of what the infants saw during familiarisation. Specifically, in the FB condition of Experiment 1, the infants saw the agent moving away from a block-like object, i.e. the square opaque screen, and in the TB condition of Experiment 2 the infants saw the agent moving away from a clearly discriminable block; a block that was visible against a plain, light background, rather than the brown mottled background of the opaque occluder. Therefore, it is likely that infants were more surprised by movement towards the block in these conditions because, relative to the TB condition in Experiment 1 and the FB condition in Experiment 2, respectively, the infants had more clearly seen movement *away* from the block during familiarisation. This could be tested by, inter alia, varying the discriminability of the surface features of the block relative to those of the opaque occluder.

⁸ In the familiarisation phase of their 'ball' study, Song, Onishi, Baillargeon and Fisher (2008) allowed 18-month-old infants to see an agent (Agent 1) placing a ball in a box (the equivalent of the green box in Onishi and Baillargeon's 2005 study) rather than a cup (the equivalent of the yellow box), and repeatedly reaching towards the box and away from the cup in subsequent trials. During belief induction they saw a second agent (Agent 2) move the ball to the alternative container while Agent 1 was not visible, and at test they saw Agent 1 reaching towards the box or the cup. However, the infants in this study received an 'intervention trial' after belief induction and before the test. In this trial, Agent 2 pointed to the cup while Agent 1 was watching, or said to Agent 1 "The ball is in the cup" or "I like the cup". The results showed that after Agent 2 had said "I like the cup", infants looked longer at the 'new' test event – the one that contrasted with familiarisation trials (reaching to the cup) - than at the old test event – the one that matched familiarisation trials (reaching to the box). However, when Agent 1 had pointed at the cup, or said "The ball is in the cup", the infants looked longer at the old test event than at the new one.

In each of the three intervention conditions (“I like the cup”, pointing, and “The ball is in the cup”), Agent 1 reappeared after a period of absence at the end of the belief induction trial. Therefore, due to retroactive interference, it is unlikely the events presented in the belief induction trial were remembered or had an effect on looking times. However, during the intervention trial the infants in the pointing condition and “The ball is in the cup” condition had experiences that reduced the novelty of the ‘new’ test event. The former group saw movement of an agent towards the cup, reducing the perceptual novelty of the new test event, and the latter heard words provoking them to imagine the ball in the cup, reducing imaginal novelty. In contrast, “I like the cup” would not be expected to reduce either perceptual or imaginal novelty, leaving infants at their default setting; looking longer at the new test event, the one that contrasted with their familiarisation experience, than with the old test event.

⁹ In a series of ‘penguin’ experiments with 18-month-old infants, Scott and Baillargeon (2009) used both the presence versus absence of the agent during critical events and the obstacle versus no obstacle variable in attempting to manipulate infants’ attribution of true and FBs about object identity. In the familiarisation trials, a human agent faced the infant across a table on which there were two toy penguins. One penguin was whole, and the other started each trial in two parts. Sometimes the two-part penguin was on the infant’s left and the whole penguin on the right, and sometimes their positions were reversed. In each familiarisation trial, the agent reached towards the two parts and away from the whole penguin, placed a key in the bottom half of the two-part penguin, and put the two parts together. In the belief induction phase, infants in the FB condition saw a human hand assemble the two-part penguin and cover it with a transparent box, and cover the whole penguin with an opaque box, when the agent was not visible. In the TB condition, these events occurred when the agent was visible. In the test trial, FB infants looked longer when the agent reached for the transparent box in which a whole penguin was visible than when she reached for the opaque box (Experiments 1 and 2), whereas infants in the TB condition (Experiment 1) showed the reverse effect. This pattern of results is consistent with retroactive interference in the FB group due to reappearance of the agent at the end of the belief induction phase. If they were less able than the TB infants to remember that the penguin in the transparent box was, until recently, the two-part penguin, they should be more surprised than the TB infants that the agent reached towards the whole penguin on test, rather than away from the whole penguin as they had during familiarisation.

It could be argued that, on the low-level novelty account, infants in both conditions should have been more surprised when the agent reached towards the opaque box because reaching towards the transparent box more closely resembled what the infants had seen during familiarisation, i.e. reaching towards a penguin rather than a box. However, this interpretation in terms of perceptual rather than imaginal novelty is not compelling because, in each familiarisation trial, infants saw the agent reach towards one penguin and away from another, and towards one opaque box (the platform on which one penguin was standing) and away from another (the platform on which the other penguin was standing).

The imaginal novelty interpretation is consistent with the looking behaviour of infants in several control conditions reported by Scott and Baillargeon (2009). The No-key condition (Scott & Baillargeon, 2009, Experiment 2) was the same as the FB condition except that the agent performed her actions without a key; for example, during familiarisation trials she did not wave a shiny key, or place it in the bottom half of the two-part penguin before assembling the parts. Infants in the No-key condition did not look longer when the agent reached for the penguin in the transparent box, suggesting that, in the TB and FB conditions, key flourishing helped the infants to learn the discrimination in the familiarisation phase; that is, it drew their attention to the fact that the agent reached for the two-part penguin and away from the whole penguin. The FB Ignorance and TB Ignorance conditions (Experiment 3) were the same as the FB and TB conditions, respectively, except that both boxes were either transparent or opaque on test. Thus, in the test trial, the infants saw the agent reach towards the left box when both boxes were transparent and contained a whole,

visible penguin, or both boxes were opaque. The left box was where the experimenter had assembled the two-part penguin in the belief induction trial. Remembering this, infants in the TB Ignorance condition were more surprised when the agent reached towards the right box, i.e. away from what they imagined as the two-part penguin. In contrast, with weak or absent memory for the belief induction events, the infants in the FB Ignorance condition were equally surprised when the agent reached for the left and the right boxes.

¹⁰ In two experiments involving rattling cups, Scott, Baillargeon, Song and Leslie (2010) used a procedure in which the initial phase involved both familiarisation and belief induction. In this initial phase the 18-month-old infants saw the experimenter repeatedly pick up and shake each of three cups in the presence (TB condition) or absence of the agent (FB condition). Two of the cups were of the same colour and pattern, red with silver stars. One of these (AL) was located on the infant's left, and the other on the infant's right (AR). The third cup was green with orange stripes, and located on the infant's right (BR), between AL and AR. In Experiment 1, AR and BR rattled when shaken (AR+, BR+) but AL did not rattle when shaken (AL-). In the test trial, after the experimenter had demonstrated again that AR rattled when shaken (AR+), the infants saw the agent reach for AL or BR. Those in the TB condition looked longer when the agent reached for AL than BR, but the infants in the FB condition looked longer when the agent reached for BR than AL.

Note that in this study reaching to a cup was usually followed by a rattling sound; it was comparatively rare for a shaken cup to make no sound. Therefore, the infants should be more surprised if the test movement is towards a cup that the infants, on the basis of their pre-test experience, would not expect to rattle (or imagine rattling). Thus, infants in the TB condition were more surprised when the test movement was towards AL because they remembered that, during familiarisation / belief induction, AL did not rattle. In contrast, the FB infants did not remember, or remember so well, that AL did not rattle because their encoding of the familiarisation / belief induction events was disrupted by the appearance of the agent at the beginning of the test trial. Therefore, the FB infants were more surprised when the test movement was towards BR because BR looked different to AR, the cup that was lifted and rattled immediately before the test event.

The results of the second experiment by Scott et al. (2010) can be explained in the same way. In the initial phase of Experiment 2, the infants saw AR+, BR+ and AL-, as in Experiment 1, and then they saw AR+, BR- and AL+. In the FB condition, appearance of the agent at the beginning of the test trial should, via retroactive interference, disrupt encoding of the latter events more than the former events. Consequently, like the TB infants in Experiment 1, the FB infants in Experiment 2 remembered AR+, BR- and AL+, and therefore looked longer at the AL test event than at the BR test event. In contrast, the TB infants looked longer at the BR test event because BR looked different to AR, the cup that was rattled immediately before the test event. This AR+ experience at the beginning of the test trial tipped the balance because the full set of events in the initial phase (AR+, BR+, AL- and AR+, BR-, AL+), which the TB infants were able to encode, supported equally strong expectations that B and A would rattle.

¹¹ An intriguing follow-up study found that, in the test used by Southgate, Senju and Csibra (2007), neurotypical adults show the same pattern of anticipatory looking as infants, but adults with Asperger's Syndrome look equally often to the left and to the right (Senju, Southgate, White, & Frith, 2009). If the low-level novelty interpretation is correct, this suggests that, in adults, the anticipatory looking effect in the FB test depends on explicit mentalising, or, more likely, that people with Asperger's Syndrome are less susceptible to distraction by an agent turning her back. The latter possibility is consistent with Senju et al.'s observation that neurotypical adults spent more time than people with Asperger's Syndrome looking at the agent's face. It also suggests a novel interpretation of recent evidence, from a neurotypical sample, that performance at 18 months on a variant of Southgate's procedure predicts performance at 48 months on a verbal FB test (Thoermer, Sodian, Vuori, Perst, & Kristen, 2012): Infants who are more 'distracted' by an agent – more attentive to

adults' head and eye movements – may acquire explicit theory of mind more rapidly than infants who are less attentive to these cues.

¹² In the familiarisation phase of the study by Träuble, Marinović and Pauen (2010), 15-month-old infants saw an agent place a ball in one of two opaque boxes at either end of a balance beam, and tip the balance so that the ball rolled from its original location to the other box and back again. During the belief induction trial, this sequence was repeated. In the TB condition, the agent faced the infant throughout, tracking the movements of the ball with her head. In the FB condition the agent watched the first movement of the ball (e.g. from the right to the left box), but before the second movement (e.g. left to right), a bell began to ring and she turned her head and body away from the infant. The manual-control condition was the same as the FB condition except that, while turned away, the agent reached behind her back and manipulated the balance beam, causing the second movement of the ball. In the test trial, which immediately followed belief induction, infants in the FB looked longer when the agent reached for the ball box (the box in which the ball had been placed at the beginning of belief induction), and infants in the TB and manual-control conditions looked longer when the agent reached for the other box. The results from the FB condition replicate those of Southgate et al. (2007), and, like the original finding, could be due to the infants being distracted by the bell and/or turning so that they didn't notice the ball rolling back to its original location. In this case, the TB result confirms that infants look longer when the agent reaches for the box that they, the infants, imagine to be empty, and the manual-control data suggest that action on the apparatus, by the agent while her back is turned, is sufficient to offset the distracting effect of turning away. For example, it may draw the infant's attention back from the agent's head to her hand, and thereby to the region where the ball is moving. Träuble et al. (2010) did not indicate whether the bell rang when the agent was turned away in the manual-control condition. If it did not, the absence of this additional distraction could also explain why the infants' looking behaviour in the manual-control condition resembled their behaviour in the TB rather than the FB condition.

¹³ Surian & Geraci (2011) used an anticipatory looking procedure very similar to that of Southgate et al. (2007) in a study reporting the attribution of FBs to a geometric shape – a red triangle – in 17-month-old infants. In familiarisation trials, the infants saw the triangle 'chasing' (following at a constant distance on an unpredictable trajectory) a blue disc, before the disc disappeared into a Y-shaped tunnel, emerged at one of two exits (left/yellow or right/green), and entered the box adjacent to the exit. The triangle then entered the same box. The belief induction trial began in the same way, but after entering the first box (e.g. left/yellow), the disc moved to the second box (e.g. right/green), while the triangle was (TB condition) or was not (FB condition) visible to the infants. In the test trial, Surian and Geraci recorded the infants' first eye movement after they saw the triangle enter the Y-shaped tunnel, and before it emerged from one of the exits. They found that 17-month-old infants in the FB condition tended to make their first eye movement towards the box originally entered by the disc (e.g. left/yellow), whereas those in the TB condition tended to make their first eye movement towards the second and final location of the disc (e.g. right/green). It is possible but unlikely that the reappearance of the triangle at the end of the FB induction sequence was solely responsible for the difference in looking behaviour between the TB and FB infants in this study because in the TB condition the triangle also disappeared and then reappeared just after the disc moved between the boxes. Unfortunately, however, the triangle in the FB condition made a distracting movement - rotated 180 degrees and disappeared at the bottom of the screen - just before relocation of the disk at the top of the screen. Therefore, it is possible that many of the FB infants failed to encode the movement of the disc between boxes, and that both TB and FB infants merely looked towards the box where they had last seen the disc. (Surian and Geraci stated that examination of gaze plots confirmed that all infants had attended to 1) the disc's initial and final hiding locations, and 2) the exit and return of the triangle, but did not report data comparing TB and FB infants on these attentional measures.) This analysis suggests that deaf infants 'failed' Surian and

Geraci's FB test (Meristo et al., 2012) not because they were unable to attribute a FB, but because they were less distracted than hearing infants of the same age.

¹⁴ A widely cited study using helping behaviour to test for the attribution of FB apparently corroborates the results of looking time experiments (Buttelmann, Carpenter, & Tomasello, 2009). In this study, 16-19-month-old infants saw an agent place a toy – a green caterpillar – in either a pink box or a yellow box. Box colour and location were counterbalanced but, for clarity, I'll describe the counterbalancing condition in which the caterpillar was placed in the pink box. In the FB condition, the agent left the room after placing the toy in the pink box and, while he was away, the experimenter involved the infant in the process of "sneakily" moving the toy to the yellow box. In the TB condition, the agent remained in the room and watched while the toy was moved from the pink to the yellow box, via the same sequence of steps, but not in a sneaky way. After this belief induction sequence, the agent tried unsuccessfully to open the pink box, and the infants were instructed by the experimenter, and sometimes also by a parent, to "help" him. Buttelmann et al. recorded which box the infant approached (by touching or opening) after this instruction. Eighteen-month-old infants in the TB condition were more likely to approach the pink than the yellow box, but those in the FB condition were more like to approach the yellow than the pink. A similar pattern was found in the 16-month-olds.

These results could, as the researchers suggested, indicate that the infants in the TB condition assumed that the agent knew the toy was in the yellow box, but helped him with the pink box because they thought he must have a good reason to be trying to open it, and that infants in the FB condition assumed the agent had a false belief that the toy was still in the pink box, and approached the yellow box in an attempt to show the agent the toy's true location. However, it is at least equally plausible that the belief manipulation – the presence or absence of the agent during relocation of the toy – influenced the infants' behaviour by tipping the balance between two competing motivations: the intrinsic motivation to see and handle the caterpillar toy, which they knew (or imagined) to be located in the yellow box, and the extrinsic motivation to help the agent, who was working on the pink box. It is possible that the desire to help dominated in the TB condition, but not in the FB condition, because the infants were more inclined to approach / help the agent when he had been continuously present and attentive (TB), than when he had been absent for part of the procedure and the butt of a "trick" by the experimenter. If so, the results of this experiment suggest that infants are sensitive to some subtle social cues, but they do not provide compelling evidence that infants of 16-19 months can attribute false beliefs.

A study of referential pointing in 17 month old infants (Southgate, Chevallier, & Csibra, 2010) used a test procedure similar to that of Buttelmann et al., and can be interpreted in a similar way. In this case, the intrinsic motivation to open each box could have been equal because they both contained interesting objects. However, relevant to extrinsic motivation, the agent was absent for longer and the butt of a more extended display of trickery in the FB than in the TB condition.

¹⁵ Inanimate control sequences would have to be used in all phases of the experimental procedure (familiarisation, belief induction and test), but for illustration let's consider the familiarisation trials of Onishi and Baillargeon's (2005) original nonverbal test for FB attribution in infancy. In these trials, infants saw a human agent reaching towards a green box on the left or a yellow box on the right (see Figure 1). In inanimate control sequences they might see a geometric shape, with the same average hue and surface area as the human agent, making a lateral movement with constant velocity - not the minimum jerk velocity profile characteristic of biological motion – that brings the geometric shape into contact with the yellow or the green box. Alternatively, instead of bringing the shape into contact with one of the boxes, the shape's movement might signal 'flashing' of the box (disappearance swiftly followed by reappearance); that is, shape movement would precede box flashing by the same interval that separates action initiation and box contact in the animate sequences.

¹⁶ Thus, in the TB conditions the agent would wear the red (translucent) visor while the yellow box shuffled (TB-green) or the toy moved from green to yellow (TB-yellow); in the FB-green condition she would wear the blue (opaque) visor as the toy moved from green to yellow; and in the FB-yellow condition she would wear the red (translucent) visor as the toy moved from green to yellow, and the blue (opaque) visor as it moved back again to green. One would need to think carefully about the potential low-level effects of the colour change in the middle of the FB-yellow belief induction trial. Although helpful in many ways, the use of a self-informed belief induction variable cannot compensate for the fact that the belief induction trial lasted three times as long in the FB-yellow condition as in the other conditions of Onishi and Baillargeon's (2005) experiment.

¹⁷ These details of the pretraining procedure are given in Meltzoff and Brooks (2008). Senju, Southgate, Snape, Leonard and Csibra (2011) published their findings as a brief report, and referred to Meltzoff and Brooks procedure as a model for their own.

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