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Early tracking of informant accuracy and inaccuracy

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Three- and four-year-old children ($N = 131$) were tested for their sensitivity to the accuracy and inaccuracy of informants. Children were presented with one of three conditions. In the Accurate–Inaccurate condition, one informant named objects accurately whereas the other named them inaccurately. In the Accurate–Neutral condition, one informant named objects accurately whereas the other merely drew attention to them. Finally in the Inaccurate–Neutral condition, one informant named objects inaccurately whereas the other merely drew attention to them. In subsequent test trials, 4-year-olds preferred to seek and accept information in a selective fashion across all three conditions, suggesting that they monitor informants for both accuracy and inaccuracy. By contrast, 3-year-olds were selective in the Accurate–Inaccurate and Inaccurate–Neutral conditions but not in the Accurate–Neutral condition, suggesting that they monitor informants only for inaccuracy and take accuracy for granted.

Several recent experiments have shown that young children attend to the differential accuracy of their informants. When one informant proves to be accurate and the other inaccurate, 3- and 4-year-olds prefer to seek out and accept information from the hitherto accurate informant (Clément, Koenig, & Harris, 2004; Koenig, Clément, & Harris, 2004). This selective trust is quite wide-ranging in its effects. Having observed that informants differ in the accuracy with which they name objects, children display selective trust not just in learning about object names from them but also in learning about object functions (Birch, Vauthier, & Bloom, in press; Corriveau, Harris, & Nelson, 2007; Koenig & Harris, 2005).

Moreover, accuracy-based selectivity can override pre-existing preferences. For example, although 3- and 4-year-olds initially displayed greater trust in an adult informant rather than a child informant, this preference was reversed if the adult but not the child subsequently proved inaccurate (Jaswal & Neely, 2006). Similarly, although 3- to 5-year-olds showed greater trust in their familiar preschool teacher rather than

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an unfamiliar teacher as an informant, this preference was reversed among older preschoolers if the familiar preschool teacher subsequently proved inaccurate (Corriveau & Harris, in press, a).

Accuracy-based selectivity is also stable over time. Three- and 4-year-olds not only show selective trust in a more accurate informant immediately after observing differences in accuracy, they continue to do so the next day and even the next week (Corriveau & Harris, in press, b). Finally, although 3-year-olds only differentiate between informants who are consistently accurate as compared to consistently inaccurate, 4-year-olds are sensitive to relative differences in accuracy. For example, if one informant is predominantly – but not always – accurate and the other informant is predominantly – but not always – inaccurate, 4-year-olds, but not 3-year-olds, display more trust in the former informant (Pasquini, Corriveau, Koenig, & Harris, 2007).

Taken together, these results show that preschoolers track differences between informants in their accuracy and make wide-ranging and persistent use of those differences when seeking and accepting new information. However, despite the robust evidence for such tracking, its exact basis is unclear. In all the experiments described above, one informant was accurate all or most of the time whereas the other informant was inaccurate all or most of the time. Therefore, children might adopt at least three different strategies in tracking relative accuracy. First, they might take an informant's accuracy for granted but track and remember an informant's inaccuracy. Thus, in using this strategy, preschoolers would adopt a stance of default trust but withdraw that default trust when they detect error. This simple model explains all the results described above by assuming that children come to mistrust an informant who is consistently or mostly inaccurate.

A second possibility is that children do the reverse. They do not take accuracy for granted. Instead, they track informants' claims for truth and take notice whenever accurate claims are made. More specifically, they build-up trust in an informant who proves to be consistently or mostly accurate. This strategy is consistent with the possibility that children might register the fact that an informant has erred but keep no record of that error. For example, they might notice when an object has been misnamed – a sensitivity that is displayed by toddlers of 16 months (Koenig & Echols, 2003) – but fail to characterize the speaker as in any way untrustworthy. Again, this model explains all recent results but it does so by emphasizing the accumulation of trust as opposed to mistrust.

A third possibility is that children monitor concurrently for both truth and falsity. Not only do they accumulate trust in informants who produce true claims, they accumulate mistrust in those who make false claims. This model explains the findings reported so far by assuming that earlier studies were optimally, albeit inadvertently, designed to provoke preschoolers into maximal differentiation between the two informants with the accurate informant eliciting trust and the inaccurate informant eliciting mistrust.

Of these three strategies, the first would appear to be the simplest and most plausible. After all, informants generally make true or accurate claims. Obvious inaccuracy in communication is the exception rather than the rule especially in the context of adult–child communication. Accordingly, it makes sense that children would bring to any unfamiliar interlocutor an expectation that he or she will be informative and accurate. Admittedly, that default trust might first be built-up on the basis of encounters with prior, accurate informants and then extended to the claims made by a newly encountered informant – an inductive strategy first identified by Hume (1748/1957) in his discussion of our belief in miracles. Still, it seems unlikely that children treat each

new informant as worthy of trust only after he or she has proved accurate. It seems more plausible that children bring a stock of trust to each new encounter, that they take it for granted when that trust is not violated, but nevertheless notice and record signs of untrustworthiness.

In order to assess whether 3- and 4-year-olds use any of the three strategies just described, particularly the first, we designed an experiment that retained many of the features of earlier studies but the initial familiarization period with the two informants was systematically varied. In condition 1 (Accurate–Inaccurate), the earlier, standard procedure was replicated in that children were presented with one informant who was consistently accurate in naming objects and one informant who was consistently inaccurate. In condition 2 (Accurate–Neutral), a consistently accurate informant was included but the second informant made only neutral remarks (e.g. 'Let me take a look at that') that could not be easily evaluated for their truth. Finally, in condition 3 (Inaccurate–Neutral), a consistently inaccurate informant was paired with a neutral informant.

Subsequently, in all three conditions, children's relative trust in the two informants was probed via three different types of question. In *Ask* questions children were invited to ask one of the two informants for help regarding the names of unfamiliar objects. In *Endorse* questions, they were invited to agree with the name proposed by one or other of the two informants. Finally, in *Explicit Judgment* questions, they were asked to judge how good each informant was at answering questions. Note that *Explicit Judgment* questions were always asked at the end of the test procedure, following the *Ask* and *Endorse* questions. This was to eliminate the possibility that the experimenter's invitation to make explicit judgments about the two informants would cue children with respect to whom they should ask and endorse.

According to our favoured hypothesis, children should bring default trust to each unfamiliar informant but come to mistrust an informant who proves inaccurate. Hence, they should display selective trust in conditions 1 and 3, because in each of those conditions one of the two informants makes false claims. In condition 2 (Accurate–Neutral), by contrast, neither informant makes a false claim so that both informants should retain children's default trust. On the other hand, if children build-up trust on the basis of accuracy, ignoring inaccuracy, they should display selective trust in conditions 1 and 2 but not in condition 3 (Inaccurate–Neutral), where neither informant provides any evidence of accuracy. Finally, if children are sensitive to both accuracy and inaccuracy, they should display selective trust across all three conditions. Moreover, selectivity might be especially marked in condition 1 (Accurate–Inaccurate) because children would have a double opportunity to evaluate the two informants, that is, to simultaneously build-up trust in the accurate informant and to reduce trust in the inaccurate informant.

Method

Participants

One hundred and thirty-one 3- and 4-year-olds (69 girls) were randomly assigned to 1 of 3 conditions. Forty four children (20 3-year-olds) participated in the Accurate–Inaccurate condition. Forty three children (20 3-year-olds) participated in the Accurate–Neutral condition and the remaining 44 children (22 3-year-olds) participated in the Inaccurate–Neutral condition. Six additional children were removed from the study.

Three showed a strong colour preference at the outset of the study for the shirt colour of one of the informants (e.g. 'Pink is my favourite colour so I will always choose pink'.); two spoke English as a second language; and one had an ear infection. Most children (129) were White, although a wide socio-economic range was represented. Children were recruited from four preschools in Lincoln, UK and the surrounding area and they participated with the consent of their caregiver. None of the children tested had a known language and/or developmental delay.

Materials

For each of the three conditions, a short film was created featuring one male and two female informants. All actors spoke British English as their native language. In each film, two female actors who were similar in age and appearance and wearing different, solid-coloured shirts (pink and green) were seated at a table. Each clip began with the male actor standing behind the two female actors and placing an object on the table between them. On *familiarization* trials, the four objects were familiar (e.g. spoon, bottle; see Table 1 for a full list of objects). On *test* trials, the four objects were novel (e.g. a toilet flapper, a sprinkler head; see Table 1 for a full list of test objects). Before each test clip was played, children were presented with a still photograph of the relevant object and were asked if they knew what the object was called. No child ever produced the correct names for the novel objects. The order of trials within accuracy and test periods was maintained across participants, as shown in Table 1.

Table 1. Names provided by two informants for familiar and novel objects

	Informant 1 name	Informant 2 name
Familiar objects		
Spoon	'That's a spoon'	'That's a duck'
Bottle	'That's a bottle'	'That's an apple'
Doll	'That's a doll'	'That's a cup'
Brush	'That's a brush'	'That's a plate'
Novel objects		
Green plastic toilet flapper	'That's a slod'	'That's a linz'
Gold and pink sprinkler attachment	'That's a mogo'	'That's a nevi'
Yellow plastic sprinkler attachment	'That's a tark'	'That's a chab'
Silver bathroom door hook	'That's a lig'	'That's a joob'

Design and procedure

All children were tested individually. To introduce the task, the experimenter pointed to a still frame from the film and said, 'I've got these two friends. See? One has a pink shirt and one has a green shirt. They're going to show you some things and tell you what they are called. I want you to listen very carefully and then I'm going to ask you some questions. Let's watch'.

Familiarization trials

On each familiarization trial, children were presented with a picture of a familiar object and then watched a video clip of the three adults and the familiar object. Trials began

when the male interviewer placed the object on the table between the two female informants and asked one informant, 'Can you tell me what this is called?' In *Film 1* (*Accurate–Inaccurate*), one informant named all four objects correctly and the other informant named all objects incorrectly. In *Film 2* (*Accurate–Neutral*), one informant named all four objects correctly and the other informant responded neutrally (a variant of 'Let me look at that'). In *Film 3* (*Inaccurate–Neutral*), one informant named all four objects incorrectly and the other informant responded neutrally (a variant of 'Let me look at that'). In each film, the order in which the informants were asked to name the familiar object alternated across the four video clips.

Test trials

Following the fourth familiarization trial, all participants were given four successive test trials, each involving a still photograph of a novel object and a corresponding video clip. Over the course of the test trials, children were asked three types of question: *Ask*; *Endorse*; and *Explicit Judgement*. Each trial began with the presentation of a still photograph of a novel object. To confirm that the object was unknown to the child, the experimenter said, 'Do you know what this is called?' Children were given a chance to reply and were then presented with the *Ask* question, 'I expect one of these people can help. Which person would you like to ask, the girl in the green shirt or the girl in the pink shirt?' Children who claimed to know the name of the novel object were told, 'Actually, I don't think that's what it is called. I expect one of these people can help. Which person would you like to ask, the girl in the green shirt or the girl in the pink shirt?' Both verbal (e.g. 'The girl in the green shirt') and pointing responses were recorded.

Next, children watched a video clip which began with the male interviewer placing the novel object on the table between the two female informants and asking one informant, 'Can you tell me what this is called?' The first female informant responded by producing a novel name (e.g. 'That's a slod'). The same question was then posed to the second female informant, who produced a different novel name (e.g. 'That's a linz'). The order in which the informants were asked to name the novel object alternated across the four clips.

The *Endorse* question was asked after viewing each video clip. The experimenter paused the video and questioned children in a similar manner to that used in the accuracy trials (e.g. 'The girl in the pink shirt said it's a slod and the girl in the green shirt said it's a linz. What do you think it's called?').

The *Explicit Judgment* questions occurred after the fourth Endorse question. The experimenter referred to a still frame of the video and asked, 'Was the girl in the green shirt very good or not very good at saying the names of these things?' The same question was posed about the other informant (the girl in the pink shirt). Finally, children were asked to make a judgment about both informants: 'Which person was better at saying the names of these things?'

Children received a point for a correct answer for every *Ask*, *Endorse,* and *Explicit Judgment* question, for a maximum total of 11 points. In the Accurate–Inaccurate and the Accurate–Neutral condition, choice of the accurate informant was treated as correct. In the Inaccurate–Neutral condition, choice of the neutral informant was treated as correct because, unlike the inaccurate informant the neutral informant had made no detectable errors during the familiarization trials.

Results

Table 2 shows the number of appropriate responses to *Ask, Endorse,* and *Explicit Judgment* questions as a function of age and condition. Note that scores for *Explicit Judgment* questions were multiplied by 4/3 to facilitate comparison with scores for *Ask* and *Endorse* questions (maximum = 4, in each case).

Table 2. Mean number of appropriate responses (maximum = 4) as a function of age, condition, and question type (*SD* in parentheses)

	3-year-olds	4-year-olds
Accurate–Inaccurate		
Ask	2.65 (0.58)	3.21 (1.02)
Endorse	2.85 (1.09)	3.20 (1.06)
EJ[a]	2.73 (1.32)	3.61 (1.14)
Accurate–Neutral		
Ask	2.00 (1.12)	2.91 (0.85)
Endorse	2.45 (0.94)	3.00 (0.85)
EJ	2.13 (1.64)	2.84 (1.52)
Inaccurate–Neutral		
Ask	2.55 (0.91)	2.50 (1.01)
Endorse	2.63 (0.90)	2.64 (1.13)
EJ	2.37 (1.36)	2.67 (1.60)

[a] Scores for explicit judgment questions were multiplied by 4/3 to facilitate comparison with scores for ask and endorse questions.

Inspection of Table 2 shows that 4-year-olds tended to perform better than 3-year-olds across all three types of question. However, the size of the age difference varied with condition. Four-year-olds performed better than 3-year-olds in the Accurate–Inaccurate condition and in the Accurate–Neutral condition, but the two age groups performed similarly in the Inaccurate–Neutral condition. To check these conclusions, the proportion of times (with an arcsin transformation) that children appropriately selected the more accurate informant was analysed by means of a 2 × 3 × 3 mixed ANOVA of ages (3-year-olds, 4-year-olds) × conditions (Accurate–Inaccurate, Accurate–Neutral, Inaccurate–Neutral) × question type (Ask, Endorse, and Explicit Judgment). This ANOVA revealed main effects of age ($F(1, 125) = 10.89$, $p < .001$, $\eta^2 = .08$) and condition ($F(2, 125) = 4.55$, $p < .012$, $\eta^2 = .07$) and a trend for an interaction of age × condition ($F(2, 125) = 1.66$, $p = .19$, $\eta^2 = .03$). The main effect of question type was not significant and did not interact with any other variable. Accordingly, the ANOVA was repeated with question type omitted as a variable. This confirmed the main effects of age ($F(1, 125) = 11.96$, $p < .001$, $\eta^2 = .09$) and condition ($F(2, 125) = 5.60$, $p < .01$, $\eta^2 = .078$) as well as the trend for an interaction of age × condition ($F(2, 125) = 2.75$, $p = .07$, $\eta^2 = .04$). This interaction is illustrated in Figure 1.

To further examine the interaction, tests for the simple effect of age were conducted for each of the three conditions. As shown in Figure 1, 4-year-olds performed significantly better than 3-year-olds in the Accurate–Inaccurate ($F(1, 42) = 9.39$, $p < .001$) and the Accurate–Neutral conditions ($F(1, 41) = 7.77$, $p < .01$). However, 3- and 4-year-olds displayed a similar level of performance in the Inaccurate–Neutral condition ($F(1, 42) = 0.01$, *ns*).

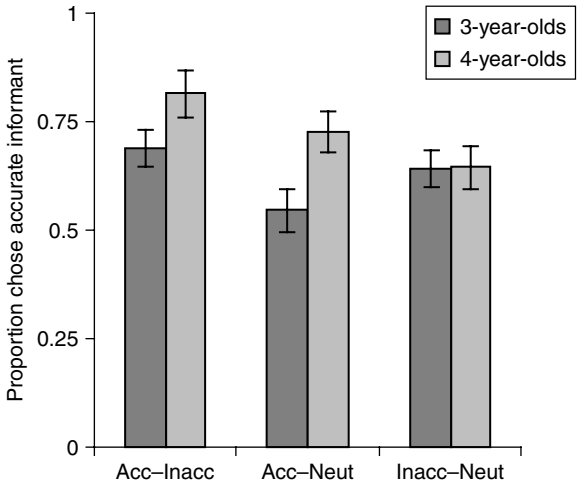

Figure 1. Proportion of choices appropriately directed at the more accurate informant as a function of age and condition.

Post hoc LSD tests were also conducted to explore the differences across conditions within each age group. Three-year-olds performed equally well in the Accurate–Inaccurate and the Inaccurate–Neutral conditions. However, they performed significantly better on each of these conditions than on the Accurate–Neutral condition ($ps < .05$). A different pattern of performance was found for 4-year-olds. They performed significantly better on the Accurate–Inaccurate condition as compared to both the Accurate–Neutral ($p < .01$) and the Inaccurate–Neutral ($p < .01$) conditions. No difference in performance was found between the Accurate–Neutral and the Inaccurate–Neutral conditions.

In summary, 3-year-olds performed well when one of the two informants was inaccurate but they performed less well when neither informant was inaccurate, as in the Accurate–Neutral condition. Four-year-olds performed well when one of the informants was either accurate or inaccurate and they performed especially well if one informant was accurate and the other inaccurate, as in the Accurate–Inaccurate condition.

To further explore the pattern of responding by age and condition, children's total scores collapsed across *Ask, Endorse,* and *Explicit Judgment* questions (maximum = 11) were compared to a chance expectation of 5.5 by means of related samples *t* tests. The means are shown in Table 3 as a function of age and condition together with the results of the *t* test. Inspection of Table 3 shows that both 3- and 4-year-olds performed above chance in the Accuracy–Inaccuracy condition and the Inaccuracy–Neutral condition. However, only 4-year-olds performed above chance in the Accuracy–Neutral condition.

An examination of children's individual scores offered further confirmation of the overall pattern of results. Table 4 shows the percentage of children with a low (0–3), medium (4–7), or high (8–11) number of correct responses by age and condition. Inspection of Table 4 confirms what might be expected from the preceding analyses. In general, a smaller percentage of 3-year-olds than 4-year-olds produced a high number of correct responses but this age change was especially marked for the Accurate–Neutral condition.

Table 3. Mean number of appropriate responses (collapsed across question type; maximum = 11) as a function of age and condition (*SD* in parentheses)

	3-year-olds		4-year-olds	
	Mean	*t*	Mean	*t*
Total scores (out of 11)				
Accurate–Inaccurate	7.55 (2.09)	4.39***	8.96 (2.61)	6.49***
Accurate–Neutral	6.00 (2.49)	0.90	8.00 (2.30)	5.22***
Inaccurate–Neutral	7.05 (2.08)	3.48**	7.09 (2.36)	3.15**

**$p < .01$; ***$p < .001$.

Table 4. Percentage of children with a low (0–3), medium (4–7), or high (8–11) number of correct responses by age and condition

	Total score (0–11)		
	0–3(%)	4–7(%)	8–11(%)
3-year-olds			
Accurate–Inaccurate	5	45	50
Accurate–Neutral	20	55	25
Inaccurate–Neutral	0	55	45
4-year-olds			
Accurate–Inaccurate	4	21	75
Accurate–Neutral	4	31	65
Inaccurate–Neutral	4	41	55

Finally, we examined how children characterized each type of informant. Table 5 shows the proportion of times that children characterized the informant as 'very good' at saying the names of things as a function of age and type of informant (Accurate, Neutral, and Inaccurate). Note that Table 5 shows replies from children appropriately grouped across condition. For example, children in both the Accuracy–Inaccuracy condition and also the Accuracy–Neutral condition were asked to characterize the accurate informant. Hence, their replies were grouped together. Similar considerations apply, mutatis mutandis, to replies concerning the inaccurate informant as well as the neutral informant. Inspection of Table 5 shows that children in both age groups often characterized the accurate informant as 'very good' at naming the objects whereas they rarely characterized the inaccurate informant as 'very good'. This differentiated characterization was more systematic among 4-year-olds than 3-year-olds. Nevertheless, binomial tests confirmed that the pattern of responding by each age group was significantly different from chance for both the accurate and the inaccurate informant. By contrast, both age groups were at chance in judging whether the Neutral informant was 'very good' versus 'not very good' at naming the objects. Given the non-committal remarks of the neutral informant (e.g. 'Let me take a look at that'), this chance performance provides further indirect evidence that children appropriately sought to answer the explicit judgment questions in light of how well the informant had named the objects.

Table 5. Proportion of 'very good' judgments directed at each type of informant (maximum = 1)

	3-year-olds		4-year-olds	
	Mean	Binomial	Mean	Binomial
Accurate	0.70	.02	0.81	.000
Neutral	0.55	.28	0.47	.55
Inaccurate	0.34	.04	0.22	.000

Discussion

In this experiment, we asked which strategy 3- and 4-year-olds employ when determining the trustworthiness of an informant. In the introduction, we proposed three potential strategies: (1) children could start out with a default level of trust in informants and monitor for *inaccuracy*; (2) children could monitor for *accuracy* and thereby build-up trust in informants; and (3) children could monitor for both *accuracy* and *inaccuracy* and increase or reduce their trust in particular informants accordingly. The results suggest that 3- and 4-year-olds employ a different repertoire of strategies when monitoring informants. We discuss each age group in turn and finally discuss potential reasons for this age change.

Three-year-olds' above chance performance in the Accurate–Inaccurate and Inaccurate–Neutral conditions, together with their unsystematic performance in the Accurate–Neutral condition suggests that they focus on informant *inaccuracy* and come to mistrust any informant who has displayed inaccuracy. This corresponds to the strategy that was anticipated in the introduction. Thus, in the Accurate–Inaccurate and Inaccurate–Neutral conditions, 3-year-olds came to mistrust the informant who made errors when labelling familiar objects. When subsequently presented with novel objects, they chose to ask for and endorse the information provided by the other informant, whether she had been accurate or neutral and they differentiated appropriately between the two informants when asked to make explicit judgments. By contrast, in the Accurate–Neutral condition, neither informant had been inaccurate, and so 3-year-olds did not differentiate between them. Thus, 3-year-olds appear to operate with a simple binary coding system. At the outset, both informants are attributed a default level of trustworthiness. However, this default categorization is replaced by untrustworthiness if an informant proves inaccurate.

Four-year-olds' above chance performance in all conditions shows that they did not adopt the strategy of monitoring for inaccuracy only. They not only trusted an accurate informant or neutral informant over an inaccurate one, they also trusted an accurate over a neutral informant. Thus, 4-year-olds appear to monitor for both accuracy and inaccuracy. Their use of each type of monitoring is fully consistent with their relative performance across the three conditions. Thus, they performed significantly better on the Accurate–Inaccurate condition, where they were able to utilize both accuracy and inaccuracy information, than on the Accurate–Neutral or Inaccurate–Neutral conditions, where only one strategy was available to them. Nevertheless, even when only one strategy was available to them, 4-year-olds performed above chance in choosing to ask and endorse information from the accurate (or neutral) informant and in differentiating her from the inaccurate informant when asked for explicit judgments.

The proposal that 3-year-olds monitor for inaccuracy whereas 4-year-olds monitor for accuracy as well as inaccuracy is also consistent with the observed age differences.

If 3-year-olds monitor for inaccuracy whereas 4-year-olds are able to monitor for both inaccuracy and inaccuracy, there should be an age change in performance in the Accurate–Inaccurate condition, where 3-year-olds can deploy only one strategy but 4-year-olds can deploy two. There should also be an age change in the Accurate–Neutral condition, where 3-year-olds have no relevant strategy but 4-year-olds can monitor for accuracy. Finally, there should be no age change in the Inaccurate–Neutral condition, where both 3- and 4-year-olds can monitor for inaccuracy. Inspection of Figure 1 shows that this corresponds exactly to the observed pattern of results.

How can we account for the change in strategy between 3 and 4 years? More specifically, why do 4-year-olds but not 3-year-olds trust an accurate over a neutral informant? One hypothesis is that this shift is related to children's developing understanding of theory of mind. Yet recent evidence shows that false belief understanding is not necessary for children to display selective trust in an accurate as compared to an inaccurate informant. Pasquini *et al.* (2007) report that although 3-year-olds – and some 4-year-olds – were unable to pass a standard false belief task they still performed above chance in selectively choosing a consistently accurate informant over a consistently inaccurate informant. Indeed, both 3-year-olds and 4-year-olds performed above chance although 4-year-olds were more selective.

However, in combination with the present findings, those reported by Pasquini *et al.* (2007) suggest the following counterintuitive, but plausible, two stage hypothesis concerning the development of accuracy monitoring. First, even in the absence of false belief understanding preschoolers can monitor for inaccuracy and accumulate mistrust in an informant who makes inaccurate claims. This is consistent with the results obtained by Pasquini *et al.* (2007). It is also consistent with the current finding that 3- and 4-year-olds show a similar level of differentiation between an inaccurate and a neutral informant. Nevertheless, by 4-years of age, children realize that accurate claims should not be taken for granted – informants can and sometimes do make false claims. Arguably, this realization is facilitated by children's developing insight into false beliefs which improves between 3 and 4 years (Wellman, Cross, & Watson, 2001). At this point, children monitor informants not just for inaccuracy but also for accuracy. Thus, they not only accumulate mistrust in an inaccurate informant, they also accumulate trust in an accurate informant. The availability of this double strategy to 4-year-olds implies that even if selective trust is displayed by 3-year-olds, discrimination between a consistently accurate and a consistently inaccurate informant should be stronger among 4-year-olds. This predicted age difference corresponds to the pattern of results obtained by Pasquini *et al.* (2007) as well as the current study.

In addition to indicating an important age change in the way that preschoolers monitor for accuracy, the present results consolidate and also extend previous findings. First, as noted in the introduction, the Explicit Judgment questions were posed only at the end of the test procedure. Thus, children's selective trust in the more accurate informant – as indexed by their replies to the ask and endorse questions – was displayed spontaneously, with no explicit prompting from the experimenter to characterize one informant as compared to another. This finding is consistent with three other recent reports that preschoolers display selective trust spontaneously even in the absence of, or prior to, explicit questions about the relative merits of informants (Birch *et al.*, in press; Corriveau & Harris, in press, b; Scofield & Miller, 2007).

Second, it could be argued that earlier findings on accuracy monitoring have created a relatively artificial situation. Children have been presented with one informant who is consistently or predominantly accurate and a second who is consistently or

predominantly inaccurate. Such sharp differences in accuracy may not be common in everyday encounters with informants. This feature was present in two of the three conditions of the present study. However, children will be often confronted with a choice between an informant who has made claims that are manifestly true, thereby indexing their accuracy – and an informant who is relatively unfamiliar or who has made only neutral or unverifiable claims. The findings from the Accurate–Neutral condition show that by 4 years of age, children are sensitive to such differences and act on them both when deciding whom to ask and whose claim to accept.

In the present experiment, the neutral informant made a remark that was neither true nor false, and in that respect the neutral informant was indeed neutral as between accuracy and inaccuracy. Moreover, the neutral informant's remark conveyed engagement in the conversation and a potential willingness to answer the experimenter's request for a name. However, it should be noted that the experimenter had asked: 'Can you tell me what this is called?' The reply of the neutral informant – 'Let me look at that' – could be regarded as unhelpful rather than neutral because the remark was not semantically contingent on the experimenter's question. Accordingly, in a future study it will be informative to examine cases in which the neutral informant cannot be easily construed as unhelpful. For example, if the experimenter were to introduce each object by saying: 'I'd like to show you this', the response of the accurate informant ('That's a ball') and of the neutral informant ('Let me look at that') could not readily be seen as differing in helpfulness, even if they ultimately do differ in the information that they convey.

In future research, it will be informative to extend the current findings in two ways. First, it will be important to study older children. Granted the demonstrated sensitivity of 3- and 4-year-olds to relative accuracy, it is plausible that older children show a more refined sensitivity in the sense that less blatant or less consistent errors lead them to mistrust an informant. One preliminary indication of this developing sensitivity has emerged in research on children's reactions to familiar as opposed to unfamiliar informants. Corriveau & Harris (in press, a) report that unlike 3-year-olds, 5-year-olds do not persist in preferring a familiar informant if he or she proves inaccurate. They turn instead to an unfamiliar but accurate informant. A second direction for future research is to explore children's trust and mistrust in the context of naturally occurring activities such as joint reading of a picture book or joint discussion of an unfamiliar museum exhibit.

In conclusion, the present results show that children's monitoring of the relative accuracy of an informant becomes more pervasive in the early preschool years. Even 3-year-olds notice false claims and come to mistrust informants who make them. However, 4-year-olds go further. Rather than taking truth telling for granted, they give credit to accurate informants, trusting them more than those who have provided no confirmation of their accuracy.

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