Supplementary Materials for

Great apes anticipate that other individuals will act according to false beliefs

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Materials and Methods

Participants

A total of 41 great apes (15 bonobos, *Pan paniscus*, 19 chimpanzees, *Pan troglodytes*, 7 orangutans, *Pongo abelii*) participated in this study (Table S1). They were born in captivity and lived with conspecifics in enriched naturalistic environments at the Wolfgang Kohler Primate Research Center (WKPRC) in Leipzig, Germany, and at Kumamoto Sanctuary (KS) in Kumamoto, Japan. The apes have some experience watching naturalistic movies for enrichments and in experiments (*13-14*), although they were never explicitly trained for their gaze behavior.

Ethics statement

All participants were tested in the testing rooms prepared for each species, and their daily participation in this study was voluntary. They were given regular feedings, daily enrichment, and had ad libitum access to water. Animal husbandry and research protocol complied with local guidelines, which strictly adhere to international standards [the Weatherall report "The use of non-human primates in research"] and the national laws of Japan and Germany [KS: Wildlife Research Center "Guide for the Animal Research Ethics" (No. WRC-2014KS001A)] [WKPRC: "EAZA Minimum Standards for the Accommodation and Care of Animals in Zoos and Aquaria", "WAZA Ethical Guidelines for the Conduct of Research on Animals by Zoos and Aquariums", "Guidelines for the Treatment of Animals in Behavioral Research and Teaching" of the Association for the Study of Animal Behavior (ASAB)"].

Apparatus

We used the same set-up that we previously established to record apes' eye movements accurately but non-invasively without a head-restraint device. An infrared eye-tracker was used to record their eye movements [60 Hz; X120 in WKPRC and X300 in KS; Tobii Technology AB, Stockholm, Sweden]. In each facility, we utilized the set-ups that were already established to test apes in this and other experiments. KS chimpanzees participated with a familiar experimenter in the same testing room. Their heads were positioned directly by the hands of the experimenter. The eye-tracker and monitor were installed outside of the testing room. Apes watched the movies on the monitor through a transparent acrylic panel (1-2 cm in thickness). We confirmed that this transparent acrylic panel does not interfere with recording of eye movements (i.e., the infrared reflection from the eyes). KS bonobos and WKPRC bonobos, chimpanzees, and orangutans participated with the experimenter on the other side of a transparent acrylic panel (i.e., not in the same testing room). We therefore installed a nozzle and a tube on the transparent acrylic panel, which kept subjects relatively stationary during testing by allowing them to sip diluted grape juice (via a custom-made juice dispenser made from a medical drip). Apes were allowed to drink juice freely while watching the movies (i.e. irrespective of their gaze behavior). In both facilities, the movies were presented at a viewing distance of 70 cm with a resolution of 1280×720 pixel on a 23-inch LCD monitor (43×24 degree) with Tobii Studio software (version 3.2.1). Their eye-movement responses (first looks and viewing times) to each scene feature (e.g. Target, Distractor)

were coded automatically in the Tobii Studio software based on the Area-Of-Interest (see Data analysis for details).

Two-point automated calibration was conducted for the apes by presenting a small object or movie clip on each reference point. Each time before the recording session, we manually checked the accuracy and repeated the calibration if necessary. Calibration errors are typically within a degree.

Stimuli and procedure

In each experiment (Figure 1 and 2), each ape participant watched videos consisting of two familiarization trials and one test trial. In experiment 1, subjects experienced both familiarization trials and the test trial on the same day. In experiment 2, subjects experienced familiarization trials on one day and the test trial on the next (see below for details). The test trial presented either of two conditions: false-belief 1 (FB1) or false-belief 2 (FB2). Subjects participated in a single trial (i.e., including two familiarization trials and one test trial) for each experiment, with half of the participants randomly assigned to FB1, and the rest to FB2 (i.e. between-subject design). Between subjects, we counterbalanced the order of familiarization trials (L then R or R then L) and, in the test trial, whether the correct location for anticipatory looks (i.e., the Target) was the left or right location. That is, we prepared four patterns of presentation for each condition that counterbalanced the sides where the object was hidden in each familiarization (L then R or R then L), as well as the side (L or R) where the Actor believed that the object was hidden in the test (i.e., four combinations: LRL, LRR, RLL, and RLR). We assigned these sequences to participants as evenly as possible.

Experiment 1 (letters refer to the panels in main text Figure 1) On the first familiarization trial, a human actor (Actor) was positioned between two haystacks with openings in them (such that an object or agent could be hidden within either haystack). The Actor peeked inside both haystacks (to imply that the backs of the haystacks were closed, and that only from his central perspective could one see inside the haystacks) **(a)**. The Actor then turned his back to the camera and walked toward the door in the background of the scene **(b)**. The King-Kong character (a person wearing a King-Kong suit; KK) entered the scene from the foreground and hit the Actor on the back. The Actor then ran through the door, grabbed a long orange stick, and came out from the door. While the Actor watched, KK ran and hid in one of the haystacks **(c)**. The Actor raised his stick above his head, walked centrally to the middle of the two haystacks, paused, and then turned and hit with his stick the top of the haystack containing KK (i.e., Target; the other side was Distractor) **(d)**. KK ran away and the scene faded out. On the second familiarization trial, the Actor came out from the door, and the same actions repeated except that KK hid in **(e)**, and the Actor hit **(f)**, the other haystack.

On the test trials for FB1, the Actor came out from the door without a stick, and watched as KK hid in one of the haystacks (Distractor) **(g)**. The Actor continued to watch as KK moved to the other haystack **(h)**. The Actor then ran through the door and shut it behind him **(i)**. While the Actor was out of the scene, KK left the haystack and ran away **(j)**. The Actor then opened the door with a stick in hand and, as in the familiarization, walked centrally to the middle of the two haystacks **(k)**. During this central-approach, both haystacks flashed once with a ring sound to encourage the ape participants to make

explicit looks to either the Target or Distractor. The Target was the haystack where the Actor had last seen KK hide and should falsely believe KK to still be (i.e., the second hiding location in FB1). The test trials for FB2 were the same as those for FB1 except that after the Actor watched KK hide in the first location (Target) **(l)**, he exited through the door **(m)**. Consequently, the Actor did not see when KK moved to the second location (Distractor) **(n)** or exited that location and ran away **(o)**. As in FB1, after KK had left, the Actor re-emerged from the door and proceeded centrally between the haystacks **(p)**. (total video duration = 53 sec.)

Experiment 2 (letters refer to the panels in main text Figure 2): This experiment relied on the same design as Experiment 1 but employed a new scenario. In these scenes, the Actor was pictured in the background behind a mesh wall. During the first familiarization trial, the Actor attempted to retrieve a stone through an opening in the mesh **(a)**. KK entered the scene on the other side of the mesh from the Actor, took the stone from the Actor **(b)**, and agitated in front of Actor. While the Actor watched, KK then hid the stone in one of two boxes in front of Actor **(c)**, and then framed out **(d)**. The Actor reached ambiguously toward the two boxes (grabbed the string attached to the plate that had the two boxes on it, and dragged that plate toward himself), and then flipped over the correct box and retrieved the stone **(e)**. KK then framed in and stole the stone. The scene faded out. During the second familiarization trial, KK had the stone, and the same actions were repeated except that KK hid the stone in **(f)**—and the Actor retrieve it from **(g)**—the box located on the other side.

During the test trial for FB1, KK hid the stone in one of the boxes (Distractor) while the Actor watched **(h)**. KK moved the stone to the other box (Target), while the Actor was still watching **(i)**. KK held the top of the Distractor box while the Actor watched (control for the last location that the Actor saw) **(k)**. KK threatened the Actor, and the Actor ran through the door in the background and shut it behind him **(l)**. KK retrieved the stone from under the box and framed-out **(m)**. The Actor returned through the door and reached ambiguously toward the two boxes **(n)**. During this central-reach, both boxes flashed several times with ring sounds to encourage the ape participants to make explicit looks to either the Target or Distractor. In FB2 trials, KK stole the Actor's stone **(o)** and hid it in one box (Target) **(p)** while the Actor watched. The Actor then left **(q)** and did not witness KK moving the stone to **(r)**—and removing it from **(s)**—the second box (Distractor) before returning to search **(t)**.

In our pilot test for Experiment 2, we used video files that presented test trials right after familiarization trials (1 min. in duration). When we presented these video files to the apes in one facility (Kumamoto Sanctuary; 11 participants), nearly half of apes (5 out of 11) did not make explicit looks to either the Target or Distractor, presumably because the entire duration of videos was too long to sustain their attention. Therefore, when we tested the apes at the other facility (Wolfgang Kohler Primate Research Center), we split the familiarization trials (42 sec.) and the test trial (39 sec.) across two consecutive days for each participant. The first six seconds of test trials repeated the same scenes of familiarization 1 (KK's agitation) to remind apes of the previously-shown contents. A previous study confirmed that apes can remember video content across days (*14*).

Data analysis

Polygon-shaped Areas-Of-Interest (AOI) were defined for the Target and Distractor haystacks and boxes (Figure 1q and Figure 2u). The AOIs of the haystacks were slightly enlarged to encompass the area just above them, where the Actor hit the top of the haystacks. Eye-movement data were filtered using a Tobii fixation filter. Our primary measure of anticipatory looking was each subject's first-look to the Target or Distractor during the central-approach (Experiment 1) and central-reach (Experiment 2) portions of the stimuli. The time-window was common across familiarization and test trials and also across Experiments 1 and 2. This window began when the Actor started walking or reaching and ended when the Actor stopped walking or reaching (4.5 sec. in duration). We conducted independent binomial tests for each experiment to determine whether subjects looked to the Target significantly above chance, and Fisher's exact test to determine whether a difference in performance existed between FB1 and FB2 conditions. These analyses followed Southgate et al. (*10*). In addition, we performed a combined analysis of performance across experiments for the 29 subjects who participated in both (related samples Wilcoxon signed rank test comparing the number of first looks to the Target vs to the Distractor).

Supplementary Text

Directionality of the Actor's gaze, central-approaches, and central-reaches

It is critically important that participants could not predict the Actor's actions based on the directionality of his gaze, approach, or reach. We controlled this issue in the following manners. First, during filming for both studies, the Actor looked at a marker (not visible in the final videos) that was placed directly between the Target and Distractor (Figure S1). Second, following previous ToM studies (*8,10,19*), the Actor wore a cap in Exp. 1, so that participants could not track any slight changes in gaze direction during the Actor's central-approach. Third, we checked to be sure that the movements of the stick or Actor's arm do not provide any directional cues (Figure S2). Finally, we asked 12 naïve human adults to watch just the central-approaches and central-reaches and to code whether they believed that the Actor was going to hit, or grab, the haystack/box on the left or right. Each coder examined all eight videos used in this study. The order of presenting videos was counterbalanced across coders. The coders couldn't identify the Target (47.9%, one-sample t-test, $t(11) = 0.56$, $p = 0.58$, in Exp. 1; 56.2%, $t(11) = 1.39$, $p = 0.19$, in Exp.2).

Familiarization results

Previous studies with human infants (*10,19*) only included in their false belief analyses subjects who made anticipatory looks to the Target on the second familiarization trial because young infants may vary in their tendency to make anticipatory looks. As we did not expect variation in anticipatory looking across apes based on species or age, consistent with a previous study (*13*), we did not restrict our analyses based on this criterion. However, importantly, following this inclusion criterion (i.e., excluding from FB analyses all subjects who did not make any first looks to the Target in familiarization 2 of both Experiment 1 and 2; $N = 7$) does not change our results. Specifically, with this restricted sample ($N = 22$), in the combined analysis of FB trials, subjects still made significantly more first looks to the Target than to the Distractor (Wilcoxon signed-rank test, Target = 0.95 looks vs. Distractor = 0.41 looks, $Z = 2.37$, $p = 0.017$, $r = 0.35$). This finding ensures that our results mirror those from studies with infants.

The purpose of the familiarization trials was to prepare subjects to anticipate the Actor's behavior by the FB test trial—by exposing them to our novel scenarios and to the Actor's tendency to correctly pursue the object in both the left and right locations. However, to avoid excessive learning or apes losing interest, we minimized the number of familiarization trials to just two. Apes tended to make first looks to the Target more than to the Distractor even on these familiarization trials. Yet, this tendency was not significant (Table S2). Presumably, some subjects required this period of familiarization before they could make accurate predictions of the Actor in our novel scenarios.

As apes in Experiment 1 also participated in a follow-up experiment involving the same stimuli (see below), we analyzed their performances on the familiarization trials of this follow-up experiment. In this follow-up experiment, we obtained similar results (Target 24 vs. Distractor 11 in familiarization 1; Target 15 vs. Distractor 16 in familiarization 2). Importantly, overall —in a combined analysis of the four familiarization trials from Experiment 1 and the follow-up replication— apes tended to make more first looks to the Target than to the Distractor (Wilcoxon signed rank test, Z =

1.89, $N = 40$, $p = 0.059$, r = 0.21, *marginally significant*). Thus, overall, apes also tended to anticipate the Actor's actions in familiarization stimuli.

Species Difference

In this study, we did not find systematic species differences in anticipatory performance. Table S3 summarizes each species' first-look performances in Experiment 1 and 2. No species consistently performed worse than the other species. In the combined analysis, we did not find a statistical difference between species (see the main Text). In the viewing-time analysis (see below; ANOVA including Species as a factor), we also did not find a significant effect of Species (except that in Experiment 1 we found a significant main effect of Species in which orangutans viewed the Target and Distractor for shorter durations than the other species). It should be noted that two previous studies that examined anticipatory looks of bonobos, chimpanzees, and orangutans also did not find any significant differences between species (*13,14*).

Viewing patterns during belief-induction phases

To understand the Actor's false belief and general story plots, it is essential for apes to view the Actor's and KK's actions unambiguously during the belief-induction phases. To confirm if apes indeed viewed the actions, we analyzed their viewing patterns during the belief-induction phases in Experiment 1 and 2. We first defined the Area-Of-Interest for Actor's and KK's main action areas (Figure S3A and S4A), segmented action sequences into multiple 1-sec. action scenes, and then measured the viewing times for those AOI in each action scene (Figure S3B, S3C, Figure S4B, S4C). We confirmed that Apes did view the Actor's and KK's action unambiguously in each action scene.

Viewing times in the anticipatory-look time window

Longer viewing time to Target than Distractor in the anticipatory-look time window is another measure of anticipatory looking, which has often been used in previous studies (*10,13,14,19*). An analysis of viewing times to Target and Distractor during the central-approach and central-reach periods revealed similar results to those based on first looks. We conducted a repeated-measures ANOVA with Answer (Target/Distractor) as a within-subject factor and Condition (FB1/FB2) as a between-subject factor, for Exp. 1 and 2 and also for the combined results from Exp. 1 and 2. We also included Species (bonobo/chimpanzee/orangutan) as a between-subject factor in these analyses.

In Experiment 1 (Table S4), we did not find any significant effect of Answer or Condition, neither main nor interaction effect. We found only the main effect of Species [$F(2,23) = 5.08$, $p = 0.015$, $\eta^2 = 0.30$]; orangutans viewed the Target and Distractor for a shorter duration than the other two species. In Experiment 2 (Table S4), we found the main effect of Answer [$F(1,23) = 6.87$, $p = 0.015$, , $\eta^2 = 0.23$], but not the main effect of Condition, Species, or the interaction effect. In the combined data (Figure S5), we found the main effect of Answer [$F(1,23) = 5.85$, $p = 0.024$, $\eta^2 = 0.20$], but not the main effect of Condition, Species, or the interaction effect. In both cases, subjects looked longer at the Target than at the Distractor.

Follow-up & Pilot tests

We conducted two follow-up tests for Experiment 1 and one pilot test for Experiment 2. The first follow-up test of Experiment 1 was conducted to replicate the same results using the same participants, stimuli and conditions (yet these were differently counter-balanced across participants) and strengthened the main results (see immediately below). The second follow-up test of Experiment 1 was conducted also to confirm the initial results. We used KK as a protagonist and the human actor as an antagonist. This follow-up test failed to elicit explicit looks to either Target or Distractor in a majority of participants (28 out of 41), presumably because subjects were excessively fixated on KK during the central-approaches. The pilot test of Experiment 2 also failed to elicit explicit looks in participants (5 out of 11) presumably because the overall duration of video was excessively long. This pilot test informed our decision to administer Experiment 2 familiarization trials and test trials on separate days, which successfully elicited anticipatory looks (see Stimuli and Procedure for details). The details of the first follow-up are presented below.

Experiment-1 follow-up (replication): In Experiment 1, the binomial test of first looks during the full 4.5 second window revealed only a trend (i.e., $p < 0.1$) in which apes tended to make more first looks to the Target than Distractor. One way to unambiguously confirm this result is to replicate the same result using the same stimuli and participants. We thus tested the same participants again using the same sets of stimuli, but switched the assigned conditions for each participant (i.e. a within-subject design in combination with the initial results). In this follow-up test, we obtained similar results to those in the initial tests (Table S5). The binomial test comparing the number of participants who made first looks to the Target versus Distractor did not reach statistical significance (19 vs. 12, $p = 0.28$, both-sided). However, when the results from this follow-up test were combined with the initial data set, a Wilcoxon Signed-rank test confirmed that apes made more first looks to the Target than the Distractor during the central-approach ($Z = 2.06$, $p = 0.039$, $r = 0.23$). There was no significant difference in performance between the two FB conditions ($Z = 0.48$, $p = 0.62$, $r = 0.05$) in the combined data.

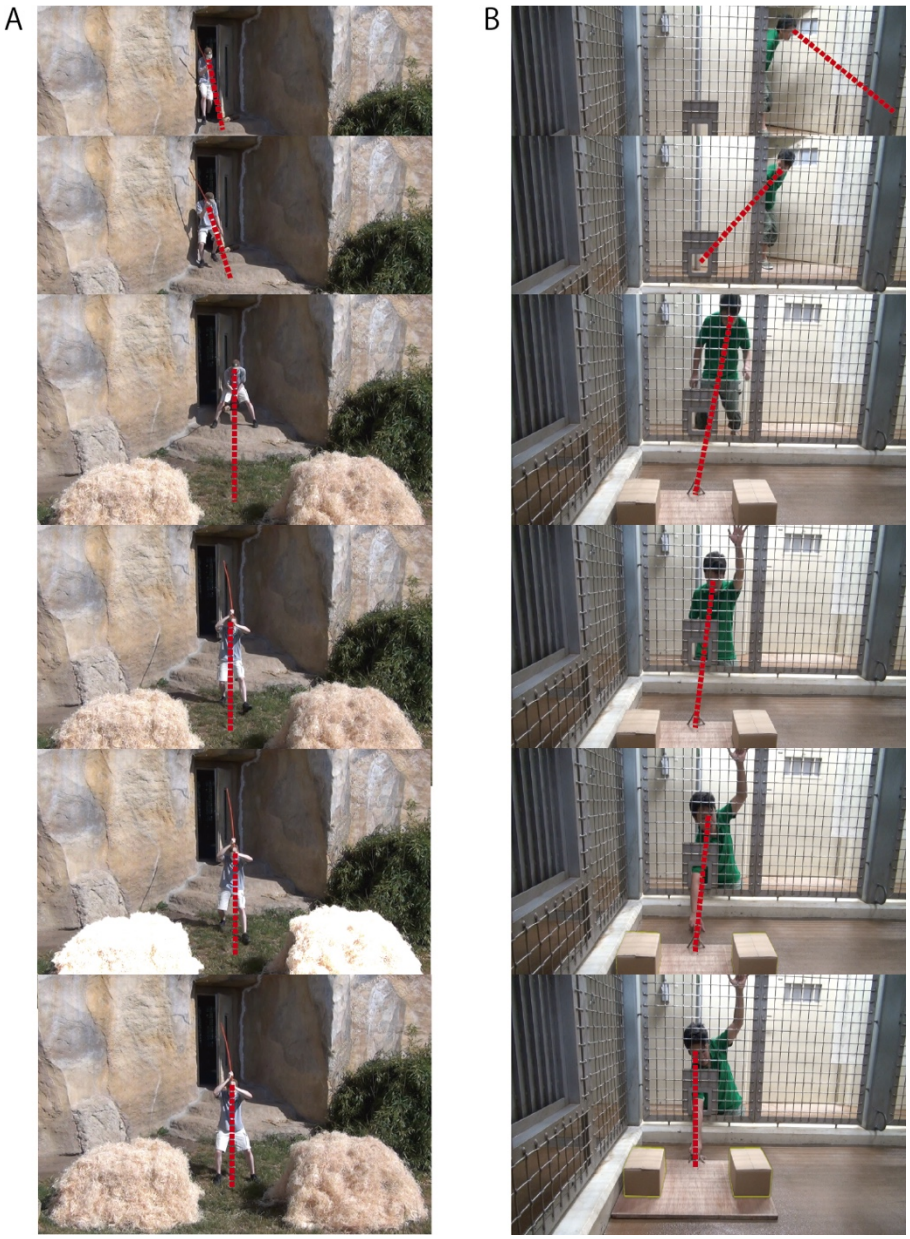

Fig. S1. Gaze control in the videos.

A. In Experiment 1, when the Actor came out from the door, he looked at the floor nearby. The Actor then shifted his gaze directly to a marker placed in between the Target and Distractor. Also note that the Actor wore a cap to hide his eye region. B. In Experiment 2, when the Actor came out from the door, he first looked at the direction where KK ran away and then looked at the hole on the mesh. He then shifted his gaze directly to a marker placed in between the Target and Distractor.

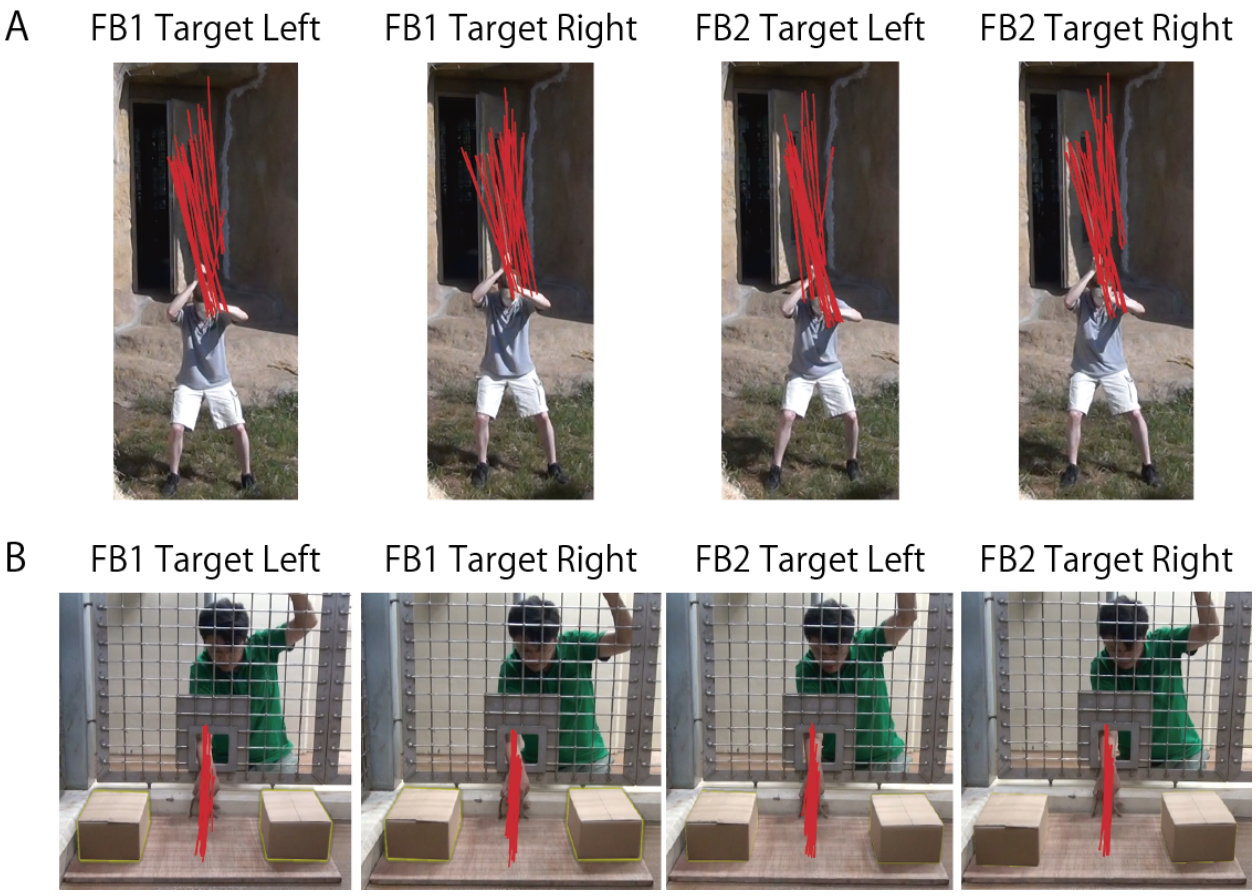

Fig. S2. Action control in the videos.

Red lines indicate the positions of the stick (Experiment 1; A) and of the Actor's arm (Experiment 2; B) during the central-approach and the central-reach, respectively (drawn 5 times per second during the 4.5-sec. time window for each of the eight videos used in this study).

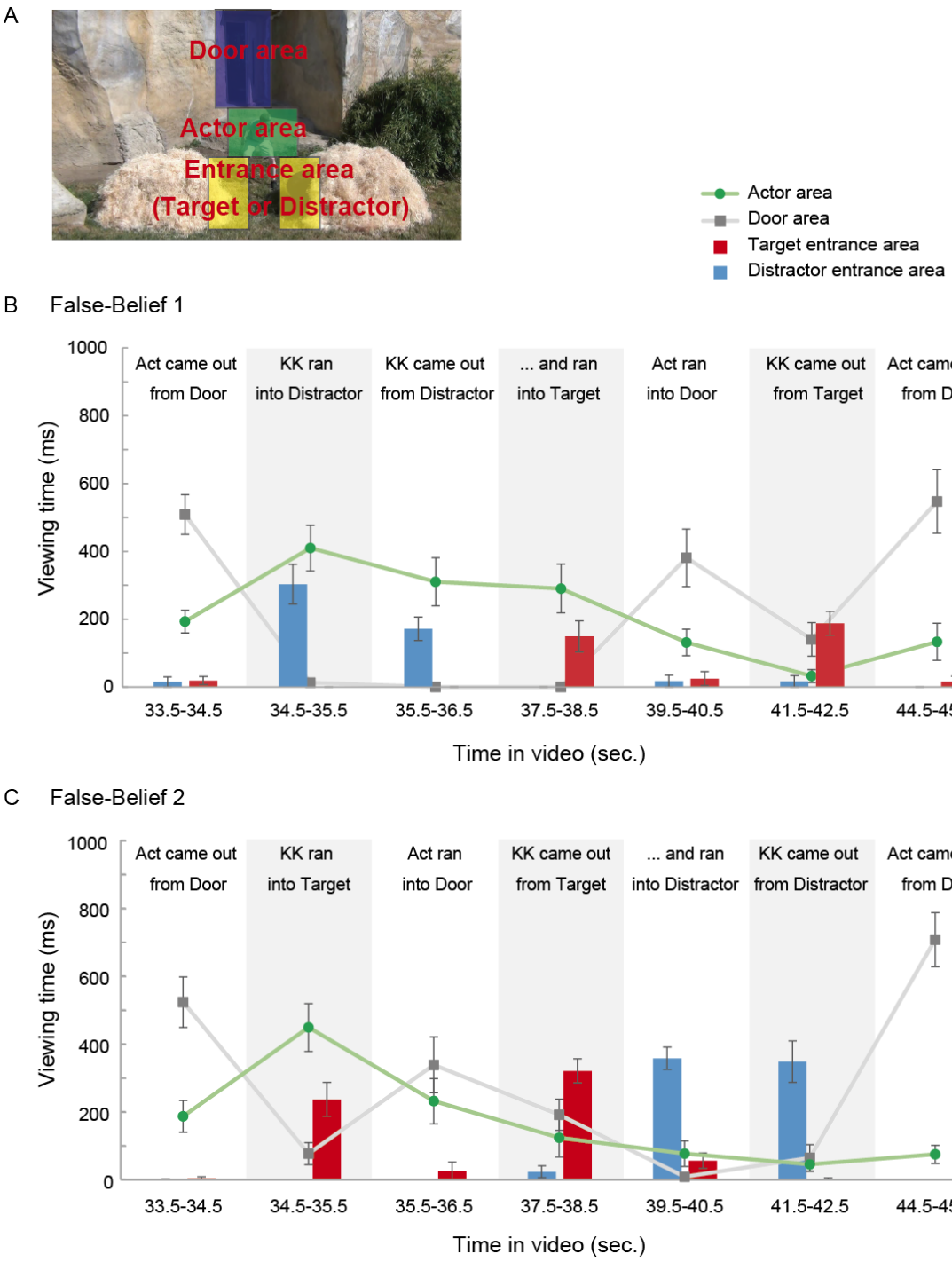

Fig. S3. Viewing patterns during the belief-induction phase in Experiment 1.
Viewing times for each Area-Of-Interest (Actor area, Door area, Target/Distractor entrance area) in each action scene (defined as a 1-sec time-window).

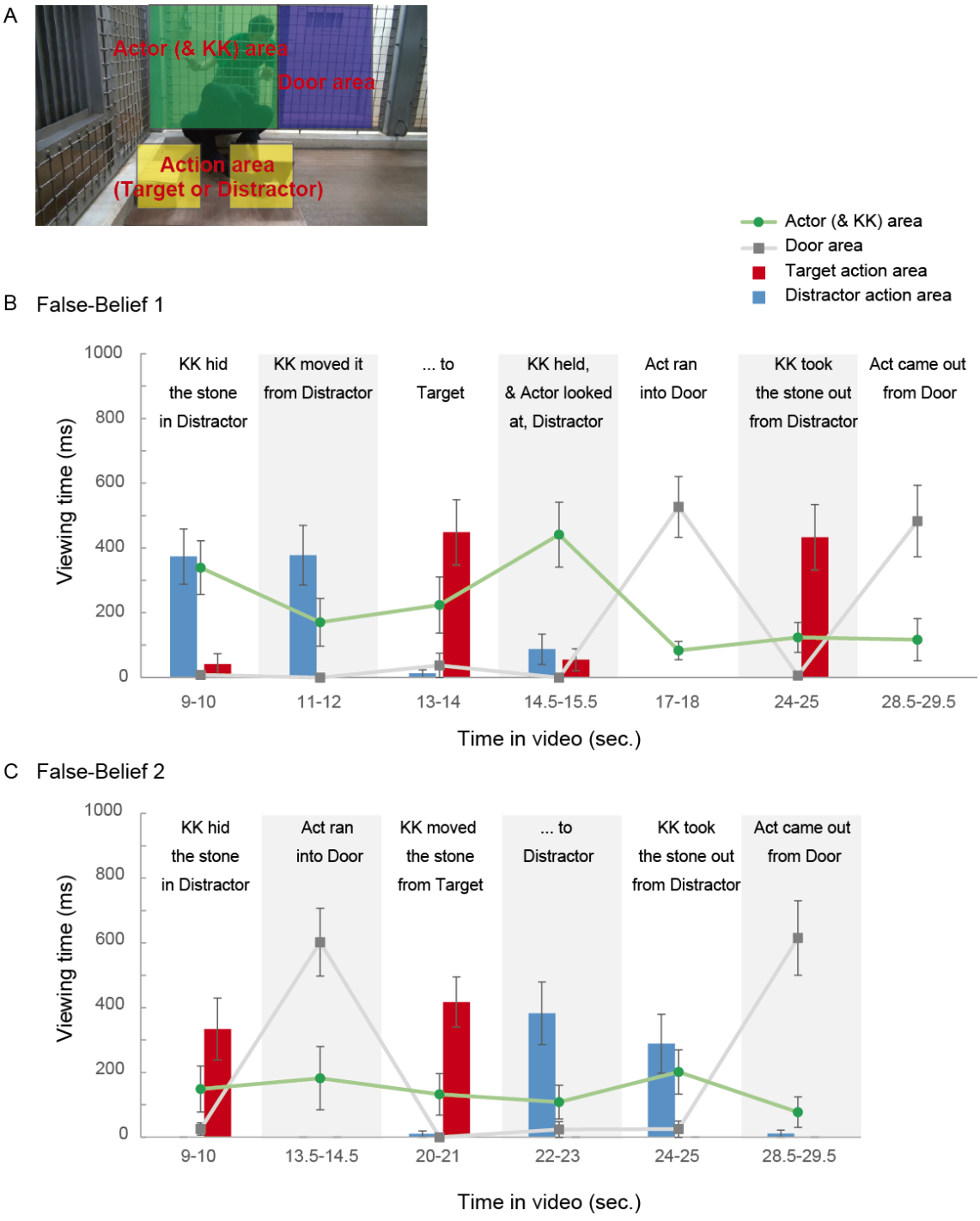

Fig. S4. Viewing patterns during the belief-induction phase in Experiment 2.

Viewing times for each Area-Of-Interest (Actor area, Door area, Target/Distractor action area) in each action scene (defined as a 1-sec time-window).

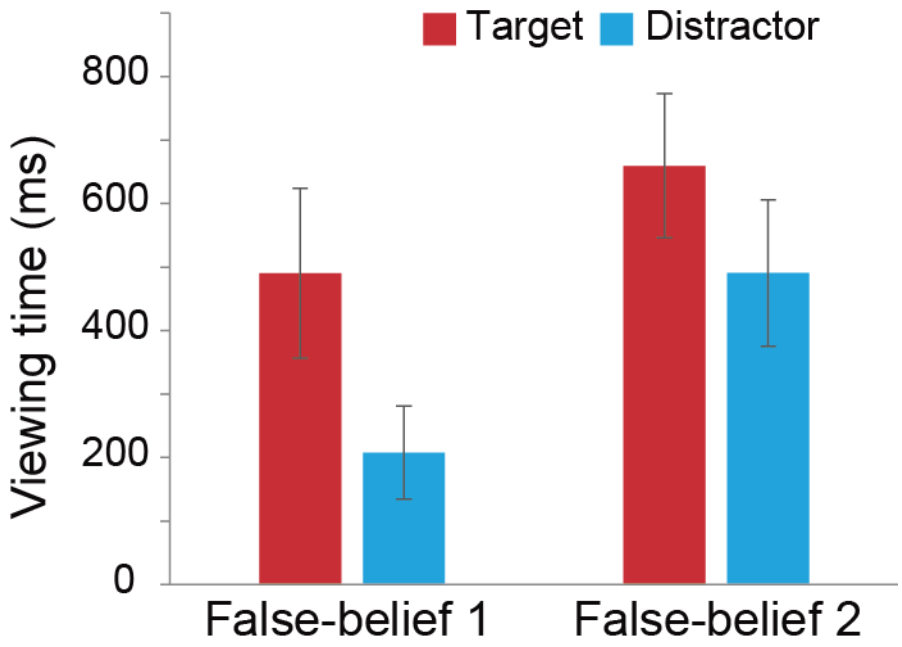

Fig. S5. The combined data for viewing-time results.

The means of total viewing times (ms ± SE) to the Target and Distractor during the central-approach (Exp. 1) and central-reach (Exp. 2).

Table S1. Participant information.

Also shown are subjects' conditions in Exp. 1 and 2.

Subject	Facility	Species	Sex	Age class	Rearing history	Exp. 1	Exp.2
Connie-Lenoire	KS	Bonobo	Female	Adult	Mother	FB 1	Pilot
Ikela	KS	Bonobo	Female	Adult	Nursery	FB 1	Pilot
Junior	KS	Bonobo	Male	Adult	Mother	FB 1	Pilot
Lolita	KS	Bonobo	Female	Adult	Nursery	FB 2	Pilot
Louise	KS	Bonobo	Female	Adult	Nursery	FB 2	Pilot
Vijay	KS	Bonobo	Male	Adult	Nursery	FB 2	Pilot
Hatsuka	KS	Chimpanzee	Female	Juvenile	Nursery	FB 1	Pilot
Iroha	KS	Chimpanzee	Female	Adult	Mother	FB 1	Pilot
Misaki	KS	Chimpanzee	Female	Adult	Mother	FB 2	Pilot
Mizuki	KS	Chimpanzee	Female	Adult	Nursery	FB 2	Pilot
Natsuki	KS	Chimpanzee	Female	Adult	Mother	FB 2	Pilot
Fimi	WKPRC	Bonobo	Female	Juvenile	Mother	FB 1	FB1
Gemena	WKPRC	Bonobo	Female	Adult	Mother	FB 1	FB1
Jasongo	WKPRC	Bonobo	Male	Adult	Mother	FB 1	FB1
Kasai	WKPRC	Bonobo	Male	Juvenile	Mother	FB 1	FB1
Kuno	WKPRC	Bonobo	Male	Adult	Nursery	FB 2	FB2
Lexi	WKPRC	Bonobo	Female	Adult	Nursery	FB 2	FB2
Luisa	WKPRC	Bonobo	Female	Adult	Mother	FB 2	FB2
Yaro	WKPRC	Bonobo	Male	Juvenile	Mother	*	FB1
Yasa	WKPRC	Bonobo	Female	Adult	Mother	FB 2	FB2
Alex	WKPRC	Chimpanzee	Male	Adult	Nursery	FB 2	FB2
Bangolo	WKPRC	Chimpanzee	Male	Juvenile	Mother	FB 2	FB2
Dasa	WKPRC	Chimpanzee	Female	Adult	Nursery	FB 1	FB1
Fraukje	WKPRC	Chimpanzee	Female	Adult	Nursery	FB 2	FB2
Frederica	WKPRC	Chimpanzee	Female	Adult	Nursery	FB 1	FB1
Jahaga	WKPRC	Chimpanzee	Female	Adult	Mother	FB 2	FB2
Jeudi	WKPRC	Chimpanzee	Female	Adult	Mother	FB 2	FB2
Kara	WKPRC	Chimpanzee	Female	Adult	Mother	FB 1	FB1
Kofi	WKPRC	Chimpanzee	Male	Adult	Mother	FB 2	FB2
Lobo	WKPRC	Chimpanzee	Male	Adult	Mother	FB 1	FB1
Lome	WKPRC	Chimpanzee	Male	Adult	Mother	FB 1	FB1
Riet	WKPRC	Chimpanzee	Female	Adult	Nursery	FB 1	FB1
Robert	WKPRC	Chimpanzee	Male	Adult	Nursery	FB 1	FB1
Sandra	WKPRC	Chimpanzee	Female	Adult	Mother	FB 2	FB2
Batak	WKPRC	Orangutan	Male	Juvenile	Mother	FB 2	FB2
Dokana	WKPRC	Orangutan	Female	Adult	Mother	FB 2	FB2
Padana	WKPRC	Orangutan	Female	Adult	Mother	FB 2	FB2
Pini	WKPRC	Orangutan	Female	Adult	Nursery	FB 1	FB1
Raja	WKPRC	Orangutan	Female	Adult	Mother	FB 1	FB1
Suaq	WKPRC	Orangutan	Male	Juvenile	Mother	FB 1	FB1
Tanah	WKPRC	Orangutan	Female	Juvenile	Mother	FB 1	FB1

*not available when Experiment 1 was conducted

Table S2. Familiarization results.

Number of participants who made first looks to the Target and Distractor during the central-approach (Experiment 1) or central-reach (Experiment 2) in the 1st and 2nd familiarizations. Shown in parentheses is the number of participants who did not look to either.

		Target	Distractor	Total
Experiment 1	Familiarization 1	21	14	35 (5)
	Familiarization 2	18	15	32 (8)
Experiment 2	Familiarization 1	13	13	26 (4)
	Familiarization 2	16	10	26 (4)

Table S3. First-look results by species

Number of participants (by species) who made first looks to either the Target or Distractor during the agent's approach in experiments 1 and 2. Shown in parentheses is the number of participants who did not look at either.

			Target	Distractor	Total
Experiment 1	FB1	Bonobo	5	1	6 (1)
		Chimpanzee	5	3	8 (1)
		Orangutan	0	0	0 (4)
	FB2	Bonobo	4	2	6 (1)
		Chimpanzee	5	4	9 (1)
		Orangutan	1	0	1 (2)
Experiment 2	FB1	Bonobo	3	1	4 (1)
		Chimpanzee	3	1	4 (3)
		Orangutan	2	0	2 (2)
	FB2	Bonobo	1	3	4 (0)
		Chimpanzee	5	0	5 (2)
		Orangutan	3	0	3 (0)

Table S4. Viewing times in the anticipatory-look time window.

The mean viewing times (ms) to the Target and Distractor during the central-approach (Exp. 1) and central-reach (Exp. 2). Shown in parentheses is the standard error of the mean.

		Target	Distractor
Experiment 1	FB1	270 (86)	148 (61)
	FB2	339 (95)	335 (85)
Experiment 2	FB1	271 (136)	136 (57)
	FB2	341 (60)	107 (35)

Table S5. Results from the Experiment 1 Replication.

Number of participants who made first looks to either the Target or Distractor during the central-approach. Shown in parenthesis is the number of participants who did not look to either.

	Target	Distractor	Total
Familiarization 1	24	11	35 (5)
Familiarization 2	15	16	31 (9)
FB1	11	5	16 (4)
FB2	8	7	15 (5)
Total (FB1 + FB2)	19	12	31 (9)

Movie S1

Video stimuli from Experiment 1, with one participant's gaze data mapped onto it. (https://www.youtube.com/watch?v=qUkk0hSrT2Q&index=19&list=PLKKVefLuYgZ8tTMu2Zp7shJ5haWWjf3GO)

Movie S2

Video stimuli from Experiment 2, with one participant's gaze data mapped onto it. (https://www.youtube.com/watch?v=kgYNSin3Sfc&feature=youtu.be)