Individual Intentions in Shared Intention[1]

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0. Abstract

There is disagreement among philosophers about the following claim: when we share an intention to perform some action, we each have an intention towards that action. That disagreement turns on the interpretation of thought experiments, specifically whether reports of a shared intention are accurate in cases in which one of the participants lacks a participatory intention. We subject the standard interpretations of thought experiments to empirical testing. Our results suggest that attributions of shared intentions are appropriate only when each individual has a participatory intention, supporting accounts of shared intention that include participatory intentions as a necessary component.

Key words: Collective Action, Shared Intention, Normativism, Joint Commitment, Experimental Philosophy

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1   1. Introduction

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3   When we intend to act together, does each of us need to have an intention to participate?

4   It may appear obvious that we do. How could we intend to do something together without

5   each of us intending to do it? But here is a story told by Annette Baier aimed at casting doubt on that

6   initial thought. Imagine someone at a family gathering sitting on a porch while everyone else is

7   dancing. Asked about what she is doing, she says, apparently felicitously, "We are dancing a reel, but

8   I quickly had enough of it, so I am sitting out" (Baier 1997). There are, no doubt, plausible

9   references for that "we" other than the parties to the action. But, if she does mean to include herself

10 in that group, her lack of intention to dance with the others does not make her utterance

11 unintelligible.

12 This possibility has been defended by Margaret Gilbert. Her commitment to it is most

13 explicitly stated in her Disjunction Criterion:

14   An adequate account of shared intention is such that it is not necessarily the case
15   that for every shared intention, on that account, there be correlative personal
16   intentions of the individual parties (2009, p. 172).

17 Gilbert motivates this criterion with another story (2009, 171-2). Ned and Olive plan to hike to the

18 top of a hill. On the day, they get to the hill and start up. Ned realizes that he isn't going to make it all

19 the way to the top. So, he decides to go about halfway and then turn back. But he thinks it's best to

20 wait until they're a little farther along to tell Olive. Before he has the chance to do so, they encounter

21 another person on the trail, who asks them how far they intend to go. Olive says they intend to hike

22 to the top. Because Gilbert does not find this report inconsistent, she concludes that people may

23 share an intention without each of them having a participatory intention.

24 Contrarily, Michael Bratman (2014) argues that shared intentions are constituted by

25 interrelated individual intentions with special contents. He points out that intentions, in general, are

26 such that if an agent has one, they are set to perform the action in their content. That is, the practical

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1 question of whether to perform that action is closed for the moment, the answer is affirmative, and

2 that affirmation is operative in the agent's psychology. But a collection of people without individual

3 participatory intentions is not set on performing an action together.[2]

4   Both Gilbert and Bratman appeal at times to intuition to motivate or develop their theories.

5 Gilbert, in particular, explicitly states that her account is grounded in 'observations on the way

6 people think and talk about shared intention in everyday life' (2009, 171). In part because of the

7 intuitional methodology employed, there is an impasse. If Gilbert is correct that Ned and Olive share

8 an intention, Bratman's theory of shared intention can't be the whole story. But we would also need

9 to rethink the relationship between shared intention and intention in general, since it would make it

10 such that people can share an intention to do something that they are not psychologically settled on

11 doing. Moreover, since according to Gilbert, shared intention entails that each person is obligated to

12 behave in certain ways with respect to that intention, the presence of a shared intention changes the

13 normative status of some of our behaviors.

14   We aim to advance this debate by subjecting Gilbert's motivation for the Disjunction

15 Criterion to empirical testing. More generally, under certain assumptions, our results suggest that

16 shared intentions are in part constituted by individual participatory intentions.

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18 2. Experimental Study

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20 In our studies, a motivating thought experiment is singled out and developed into a series of

21 vignettes that highlight its salient features.[3] Participants are asked questions designed such that

22 competing theories answer in different ways. Common intuitions then help guide our interpretation

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[2] We restrict our focus to Bratman and Gilbert in particular because their accounts are prominent, their theoretical commitments contrast sharply on this point, and they have engaged with each other's work extensively, in ways that highlight the points of divergence.
[3] This is a methodology established in Gomez-Lavin and Rachar (2019, 2022, 2023). For a critique, consult Löhr (2022).

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of the thought experiments being used to motivate, develop, and, at times, defend a particular philosophical theory.

Our studies extend earlier experimental work by Michael and Butterfill (2022) in four ways: (i) we test normative measures, which reveal the presence of obligations in our everyday judgments of shared agency, even when a shared intention is no longer present; (ii) we ask about different perspectives, which allows us to offer a novel explanation of conflicting intuitions; (iii) we directly compare Gilbert's and Bratman's theories, thereby explaining the philosophical consequences of the falsification of predictions derived from Gilbert's theory; and (iv) we use non-parametric statistical tests. These changes lead us to draw different conclusions than those drawn by Michael and Butterfield.

2.1 Methods

Our experiment features a 2x2 between-subject design in which 398 adult participants (50.7% self-identified as women) were randomly assigned to one of four conditions as specified in Table 1 below.[4] After instructions, participants were asked to read a vignette specific to their assigned condition and respond to our nine dependent measures. Of the nine total measures we tested, this paper discusses the four that have direct philosophical implications. The other five measures are part of a related project to develop a psychological model of joint action.[5]

Each condition features a vignette that has been adapted from Gilbert's thought experiment:[6]

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[4] Participants were English-speaking adults from the US recruited from Prolific.co and paid the equivalent of 12USD an hour for their participation.

[5] A full description of all measures, predictions, and analyses is located in our anonymized preregistration which can be accessed at https://osf.io/z6vcj?view_only=4c37f7be627a485a94b80f84eb9d5b00. All data, materials, results and analytic code for the project can be found on our anonymized OSF repository: https://osf.io/tvs5p/?view_only=0750dbe13f884a219e03fe04c5944fea.

[6] We focus on Gilbert's thought experiment because of its importance in the literature and its relevance to the question whether shared intentions are constituted by individual participatory intentions. But there are two issues arising from this choice, both of which present interesting avenues for future research. First, consider the difference between the stories of Gilbert and Baier: Gilbert's story involves a dyad, while Baier's involves a

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1   C<small>ONTROL</small>: No intention change and no notification

2 The first condition serves as a control as neither the character's intention changes nor do they notify

3 their partner:

4   'Ned and Olive plan to hike to the top of the hill. They arrive at the hill and start up.
5   They encounter Pam, who asks how far they intend to go. Olive says, "We are going
6   to the top of the hill."'
7
8 T<small>EST</small>: Intention Change and No Notification

9 This condition is crucial as it is the closest to the original vignette. The condition presents

10 participants with a scenario in which Ned changes his intention to continue in the joint action of

11 their hike but does not notify Olive:

12   'Ned and Olive plan to hike to the top of the hill. They arrive at the hill and start up.
13   After a while, Ned realizes that it would be too much to go all the way, but doesn't
14   plan to tell Olive until they are at least halfway up the hill. Before then, they
15   encounter Pam, who asks how far they intend to go. Olive says, "We are going to the
16   top of the hill."'
17
18 D<small>ISREGARD</small>: Intention Change and Notification

19 In this condition, Ned changes his intention and notifies his partner:

20   'Ned and Olive plan to hike to the top of the hill. They arrive at the hill and start up.
21   After a while, Ned realizes that it would be too much to go all the way, and tells Olive.
22   After that, they encounter Pam, who asks how far they intend to go. Olive says, "We
23   are going to the top of the hill."'
24
25 L<small>YING</small>: No Intention Change and Notification

26 The fourth condition, provided for logical completeness of the hypothesis space, features a scenario

27 where Ned notifies Olive of a change of intention despite no change of intention occurring:

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larger group. In dyadic groups, when one person defects, there is no majority, which differs from what happens when a person defects from a larger group that carries on with the action. Perhaps then for bigger groups people are more likely to judge that someone is a participant without a participatory intention. We find this intriguing and plan to investigate it. Second, Gilbert's thought experiment concerns what may be an atypical act-type. Going for a hike is governed by norms responsive to the potentially dangerous nature of being in the wilderness. We are currently conducting research on the special nature of certain kinds of joint actions. Our initial thought is that in addition to norms governing sharing an intention in general, there are special norms attached to different kinds of shared actions. A major part of this project will be to see which normative judgments generalize across different collective act-types. We are grateful to an anonymous referee for both of these suggestions.

1 'Ned and Olive plan to hike to the top of the hill. They arrive at the hill and start up.
2 After a while, although Ned hasn't changed his mind about hiking to the top, he
3 decides to tell Olive otherwise, saying that he doesn't plan on going to the top. After
4 that, they encounter Pam, who asks how far they intend to go. Olive says, "We are
5 going to the top of the hill."'

8 **Table 1.** *Participant Assignment*

	No Intention Change	Intention Change
No Notification	CONTROL $n = 100$	TEST $n = 98$
Notification	LYING $n = 100$	DISREGARD $n = 100$

22 Participants were then asked a series of questions which correspond to our measures:

23 1. *Accuracy From Olive's Perspective:* 'From Olive's perspective, how accurate is her report to
24 Pam?' on a 100-point scale anchored at 0 (Not at all) and 100 "Completely".

26 2. *Accuracy All Things Considered*: 'All things considered, how accurate is Olive's report to
27 Pam?' on a 100-point scale anchored at 0 (Not at all) and 100 (Completely).

29 3. *Notification*: This measure changes between conditions as Ned's notification to Olive is not
30 consistent throughout the vignettes. When Ned does *not* notify, the question reads as
31 follows: 'Should Ned notify Olive (if he were to change his [CONTROL]) / (about his change of
32 [TEST]) mind about hiking to the top of the hill?' When Ned does notify, the question states:
33 'Is Ned correct in notifying Olive (about his change of [DISREGARD]) / (that he changed his
34 [LYING]) mind about hiking to the top of the hill.' All questions were asked on a 100-point
35 scale anchored at 0 (Not at all) and 100 (Completely).

37 4. *Commitment*: 'Are Ned and Olive committed to the same plan?' answered on a 100-point
38 scale anchored at 0 (Not at all) and 100 (Completely).[7]

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[7] In addition to the *Accuracy All Things Considered* measure, which captures participant judgments about reports of shared intention, we wanted to include this measure to capture participants' judgments about the presence of shared intention. Since, however, we do not think there is a unified everyday understanding of the phrase "shared intention", we attempted to construct this question in a way that does justice to Bratman and Gilbert's theories of shared intention using more familiar language. We should note that there are many distinct understandings of commitment in the broader literature, not all of which see them as having the relation to intention we assume here (Chang 2013, Geurts 2019).

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1 Each participant saw these measures presented on the same page in random order. Participants

2 were then given the option to explain their reasoning. Lastly, participants were asked demographic

3 questions and completed a comprehension and 'bot' check. Participants who failed both the bot and

4 attention check were omitted.

5

6 2.2 Predictions

7 The focus of our present study is whether we can find evidence of Margaret Gilbert's Disjunction

8 Criterion in folk perceptions and judgments of joint action. Additionally, our results have

9 consequences for the assessment of her Obligation Criterion (2009, 175), which states that those

10 with a shared intention are subject to certain obligations and her Concurrence Criterion (2009,

11 174), which states that even those without an individual intention are bound to the joint project

12 until they complete it or receive permission to exit.

13 Consistent with prior research (Gomez-Lavin & Rachar 2019, 2022, 2024), we expect that

14 participants' intuitions will diverge from what Gilbert's theoretical framework would predict. We

15 predict that participants' judgments about whether the characters are committed to their joint

16 project of going on a hike depend on the individual intentions of the characters.

17 In addition to asking about the relative level of commitment displayed by the characters in

18 each scenario, we also request that participants respond to our three further measures. The first

19 asks participants to consider the accuracy of Olive's report to Pam in each condition *from Olive's*

20 *perspective*. This differs from a second measure which asks participants about the accuracy of

21 Olive's report *all things considered*. We are asking two variants of this question to help tease apart

22 an ambiguity in Butterfill and Michael's (2022) paper, where they ask participants: 'To what extent

23 would you agree that Olive's statement to Pam at the end was accurate (i.e., "Our intention is to hike

24 to the top of the hill")?' This phrasing does not distinguish between possible perspectives when

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1   making judgments of accuracy. Finally, we have a third measure that asks whether Ned is required

2   to notify Olive of his change of mind.

3   We expect that *Accuracy from Olive's Perspective* ratings will track whether Ned notifies

4   and makes explicit his intention change. As such they will be high in CONTROL and TEST and

5   significantly lower in DISREGARD and LYING. In contrast, when asked to rate Olive's statement for

6   *Accuracy All Things Considered*, we expect that Olive's report will only be deemed accurate in our

7   CONTROL condition, with scores in other conditions coming in significantly lower. This differs from

8   what Gilbert would predict, namely that from an all things considered perspective participants will

9   give high scores for the accuracy of Olive's report in all instances, with the exception of LYING.

10   Participant ratings on our *Notification* measure should be similar to what Gilbert's

11   Obligation Criterion would predict. That is, participants are likely to give high scores for the

12   'correctness' of Ned's notification in all cases except for LYING.

13   Also important for our interpretation of Gilbert's theory are participant intuitions elicited by

14   our *Commitment* measure. Here we expect significantly different responses than what Gilbert's

15   theory would predict. If she is correct that individuals cannot unilaterally end or change a joint

16   commitment, then participants should rate the characters as being committed to the joint action

17   unless one co-actor notifies the other about their intention change and the other accepts. So, a

18   proponent of Gilbert's view would expect high ratings on CONTROL and TEST, and significantly lower

19   ratings on the other two, whereas we expect that *both* notification and intention change will

20   significantly dampen participants' judgments that the characters are committed to the same plan.

21   Hence, we expect significantly higher ratings for commitment scores in CONTROL compared to other

22   conditions.

8

1 3. Results

2 Results were consistent with our predictions. Descriptive statistics are presented in Table 2. Similar

3 to prior work in experimental philosophy, samples were not normally distributed, justifying our

4 anticipated and preregistered use of non-parametric analyses.[8]

5
6
7 **Table 2. Descriptive Statistics**
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	CONTROL $n = 100$	TEST $n = 98$	DISREGARD $n = 100$	LYING $n = 100$
Accuracy Olive's Perspective	$\bar{x} = 93.65$ $\sigma = 13.95$ $mdn = 100$	$\bar{x} = 86.54$ $\sigma = 23.47$ $mdn = 100$	$\bar{x} = 49.76$ $\sigma = 33.61$ $mdn = 50$	$\bar{x} = 39.07$ $\sigma = 31.87$ $mdn = 32$
Accuracy All Things Considered	$\bar{x} = 89.71$ $\sigma = 20.03$ $mdn = 100$	$\bar{x} = 46.97$ $\sigma = 31.97$ $mdn = 50$	$\bar{x} = 28.30$ $\sigma = 25.44$ $mdn = 24$	$\bar{x} = 51.25$ $\sigma = 32.41$ $mdn = 50$
Notification	$\bar{x} = 88.04$ $\sigma = 21.45$ $mdn = 100$	$\bar{x} = 90.48$ $\sigma = 17.95$ $mdn = 100$	$\bar{x} = 83.28$ $\sigma = 24.04$ $mdn = 95$	$\bar{x} = 39.57$ $\sigma = 37.68$ $mdn = 26$
Commitment	$\bar{x} = 90.30$ $\sigma = 17.39$ $mdn = 100$	$\bar{x} = 15.77$ $\sigma = 21.98$ $mdn = 7.5$	$\bar{x} = 16.48$ $\sigma = 20.36$ $mdn = 9.5$	$\bar{x} = 41.60$ $\sigma = 32.82$ $mdn = 35$

9   This table shows the mean, standard deviation, and median, represented as $\bar{x}$, σ, and *mdn*
10   respectively, for participant ratings in all measures across all conditions.
11

12 3.1 Accuracy from Olive's Perspective
13 As expected, scores are higher in the two conditions where Ned does not notify than those in which

14 he does notify Olive, as can be seen clearly in Figure 1. Kruskal-Wallis tests suggest a significant

15 main effect and pairwise tests show that scores in both CONTROL and TEST are significantly higher

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[8] All Shapiro-Wilks *W* values for all measure and condition assignments $\leq .94$, $p \leq .0002$.

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1   than in other conditions.[9] Other comparisons did not approach statistical significance. Interestingly,

2   the shape of the distributions differs between the first two and final two conditions.[10]
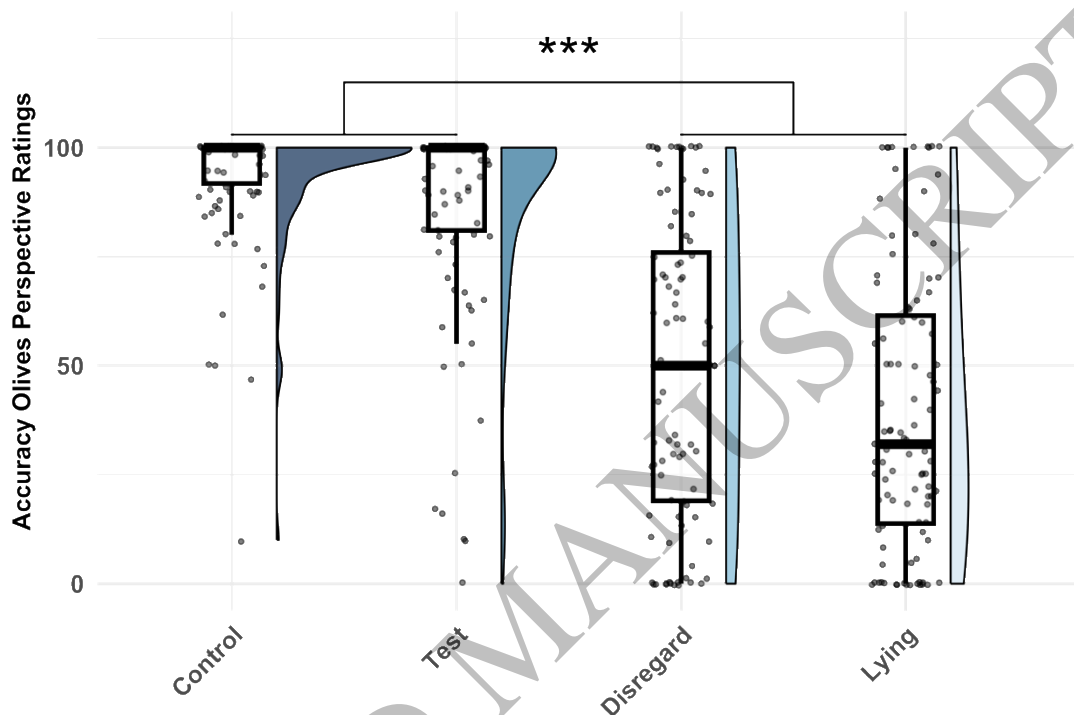

3

4   **Figure 1.**
5   This composite graph shows a box and whisker plot and violin plot of distributions of
6   ratings for *Accuracy from Olive's Perspective* for each condition. Individuals are represented
7   by points overlaid on the box plot. Lower whiskers represent the lowest and highest
8   quartiles. Boxes represent medium quartiles. Thick horizontal lines represent the median.
9   The brackets above the graph represent significant differences between groups. Three ***
10   denote *p*-values ≤ .001.

11   3.2 Accuracy All Things Considered
12   Participant ratings are significantly higher in our CONTROL compared to each other condition,

13   consult Figure 2, confirming our predictions. Kruskal-Wallis tests output a significant main effect

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[9] Kruskal-Wallis test (KW): $H(3) = 174.48$, $p < .0001$. All corrected pairwise comparisons between CONTROL or TEST and DISREGARD or LYING s: $z \geq 7.56$, $p \leq .0001$, absolute $r_{rb} \geq 0.63$. Consult Appendix, Table 4 for full results matrix.

[10] Skew and Kurtosis values support this inference as we have extreme values for both criteria on our first two conditions. All values are contained in Appendix, Table 3.

1   and pairwise tests show that CONTROL is significantly higher than all other conditions.[11] All pairwise

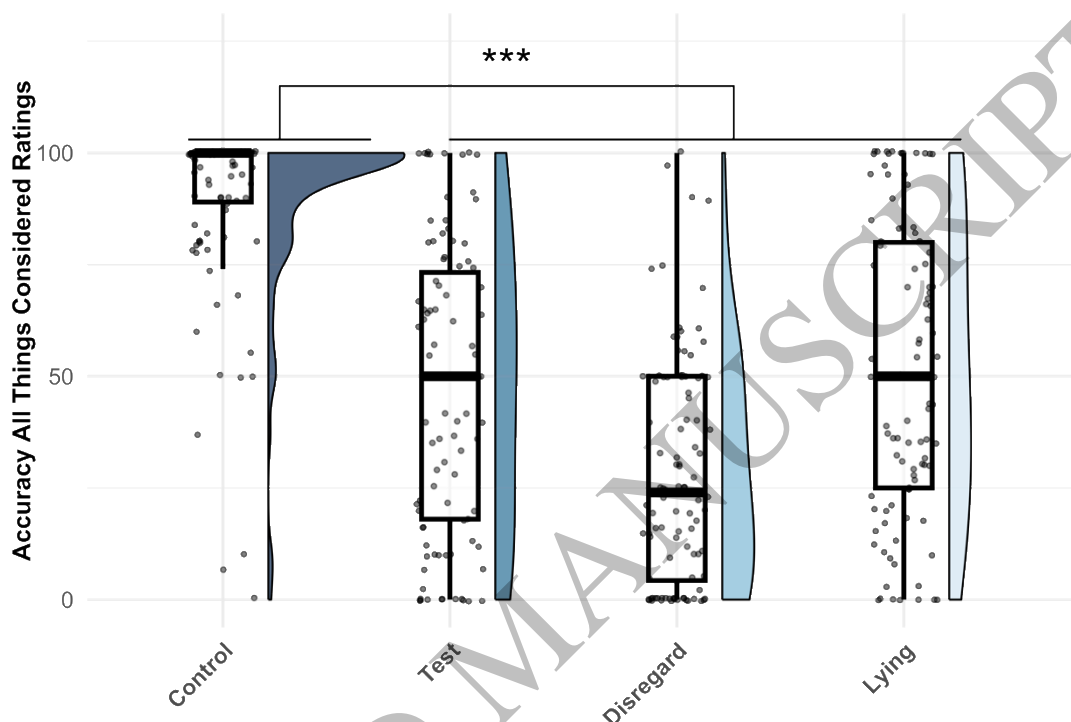2   comparisons were significant except for TEST against LYING.

3
4   **Figure 2.**
5   This composite graph shows a box and whisker plot and violin plot of distributions of
6   ratings for *Accuracy All Things Considered* for each condition. Individuals are represented
7   by points overlaid on the box plot. Lower whiskers represent the lowest and highest
8   quartiles. Boxes represent medium quartiles. Thick horizontal lines represent the median.
9   All conditions are significantly different from each other with a p-value $\leq .001$ except for
10   TEST compared to LYING.

11   3.3 Notification

12   Again, the results confirmed our prediction of high scores in all conditions except LYING. Kruskal

13   Wallis tests suggest a main effect and the pairwise tests show significant differences between all

14   conditions and LYING, consult Figure 3.[12]

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[11] KW tests for main effects: $H(3) = 157.3$, $p < .0001$. All pairwise comparisons except for TEST compared to LYING: $z \geq 3.629$, $p \leq .001$, and absolute $r_{rb} \geq 0.34$. Consult Appendix, Table 4 for full results matrix.

[12] KW tests for main effects: $H(3) = 113.8$, $p < .0001$. All corrected pairwise comparisons between the Lying Condition and all other conditions: $z \geq 7.385$ $p \leq .0001$, absolute $r_{rb} \geq 0.62$. Consult Appendix, Table 6 for full results matrix.
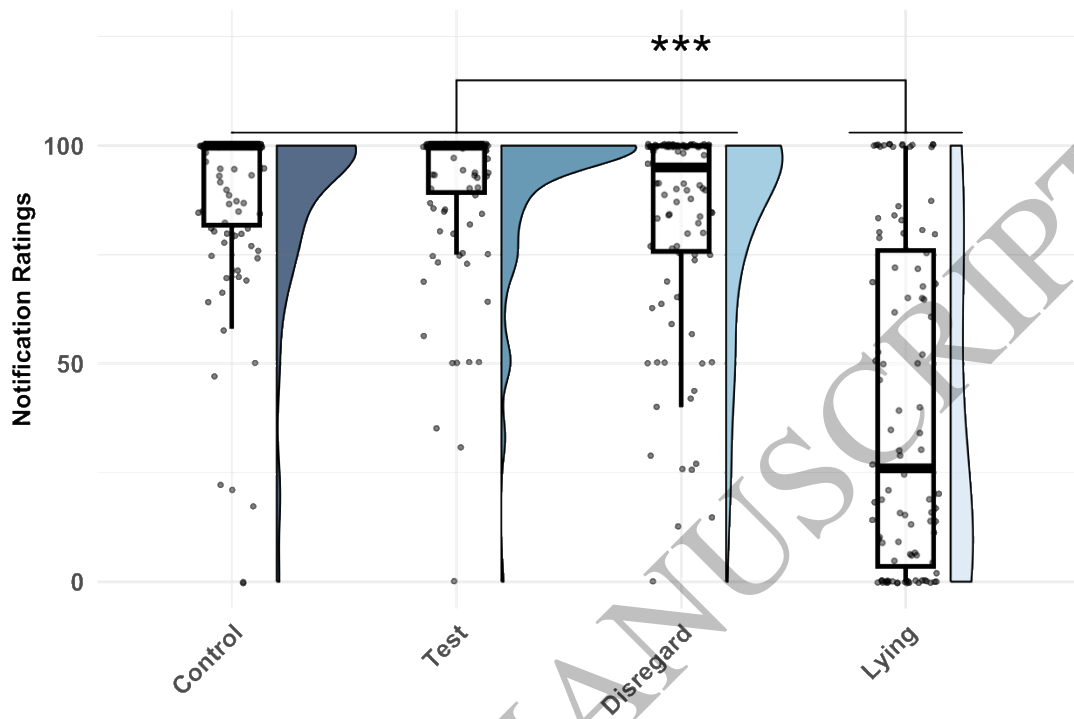
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1
2 **Figure 3.**
3 This composite graph shows a box and whisker plot and violin plot of distributions of
4 ratings for *Notification* for each condition. Individuals are represented by points overlaid on
5 the box plot. Lower whiskers represent the lowest and highest quartiles. Boxes represent
6 medium quartiles. Thick horizontal lines represent the median. The brackets above the
7 graph represent significant differences between groups. Three *** denote *p*-values ≤ .001.
8

9 3.4 Commitment

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11 Commitment ratings are higher in CONTROL in which there is no change of mind, compared to

12 conditions in which there was a change of mind, regardless of whether that change is

13 communicated. Kruskal Wallis tests show a main effect and pairwise tests show that all conditions

14 differ significantly from one another, except for a comparison between TEST and DISREGARD, consult

15 Figure 4.[13] A series of mediation analyses found that commitment scores were partially mediated by

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[13]KW test for main effects: $H(3) = 215.87$, $p \le .0001$. All corrected pairwise comparisons between all
conditions except for between TEST and DISREGARD: $z \ge 4.588$ $p \le .0001$, absolute $r_{rb} \ge 0.45$. Consult Appendix,
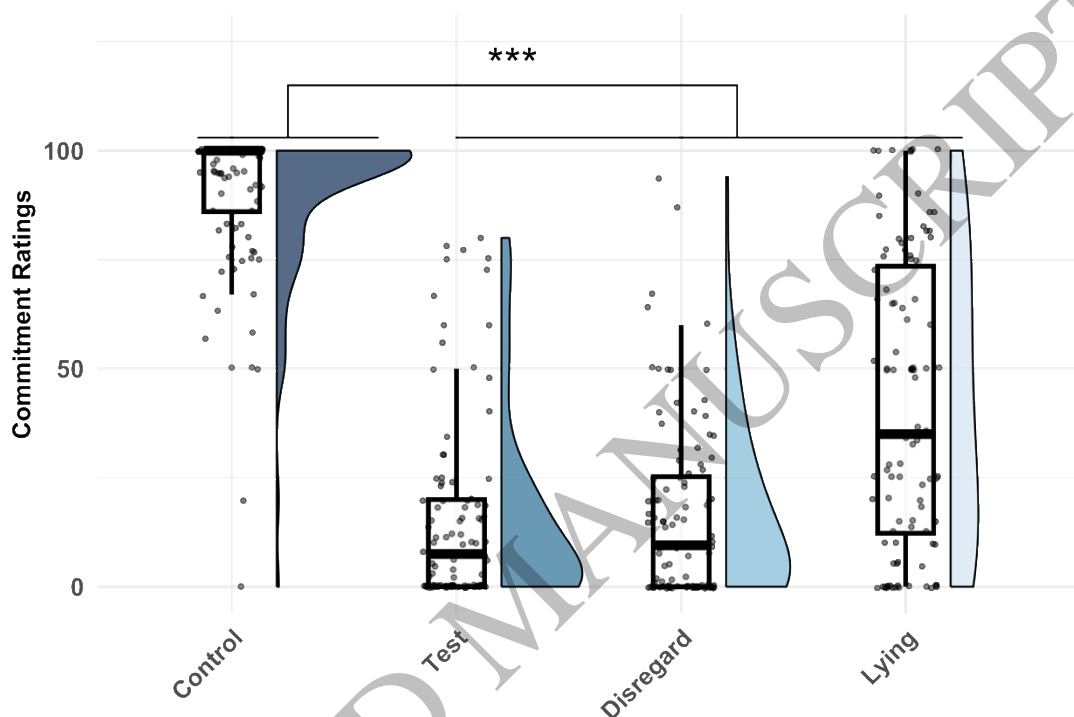Table 7 for full results matrix.

participants' ratings of *Accuracy All Things Considered* but not by *Accuracy from Olive's Perspective*.[14]

Figure 4.
This composite graph shows a box and whisker plot and violin plot of distributions of ratings for *Commitment* for each condition. Individuals are represented by points overlaid on the box plot. Lower whiskers represent the lowest and highest quartiles. Boxes represent medium quartiles. Thick horizontal lines represent the median. All conditions are significantly different from each other with a p-value ≤ .001 except for TEST versus DISREGARD.

4. Concluding Discussion

Our results are inconsistent with Gilbert's Disjunction Criterion and provide intuitive support for the general claim that shared intention depends on the presence of individual participatory intentions. That has the advantage of maintaining a match between the properties of individual intention and shared intention. Both individual and shared intention appear to be such that those

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[14] Full results and write ups for our mediations can be found here:
https://osf.io/tvs5p/files/osfstorage?view_only=0750dbe13f884a219e03fe04c5944fea

who have one are psychologically set on executing the action, at least for the time being. Nonetheless, our findings do not accord entirely with Bratman's theory of shared intention either, since they provide further support for the claim that collective action involves interpersonal normativity.

More specifically, we would like to highlight the theoretical consequences of four results and point to a future line of research raised by an unexpected fifth result. First, that there was a significant difference on the *Accuracy All Things Considered* measure between CONTROL and TEST suggests that Gilbert's intuitions are non-standard. People tend to think that once Ned drops his participatory intention to walk to the top of the hill Olive's report is less accurate than when he doesn't. This has significant consequences for Gilbert, given her argumentative strategy. She motivates the Disjunction Criterion by appealing to the intuitiveness of judging that report to be consistent and she uses that criterion directly in her argument against Bratman. As a result, the lack of support for this intuition is not easily side-stepped by appeal to philosophical expertise or technical definition, and therefore undermines her case against the main opposing account of shared intention.

The impact of this result is supported by the strongly significant difference on the *Commitment* measure between CONTROL and TEST. According to Gilbert, even after Ned drops his participatory intention, the shared intention remains. Our participants do not share that judgment. The common intuition here is clear: there is no shared intention between Ned and Olive to hike to the top of the hill once Ned has dropped his participatory intention. This is very much in line with Bratman's response to the thought experiment: 'As I see it, once Ned has changed his mind, they no longer have a shared intention to climb to the top' (2014, 117).

Moreover, our results support the following plausible explanation of why one might think Olive's report is consistent. The fact that there was no significant difference between the CONTROL and the TEST suggests that our participants recognize the key fact that in TEST Olive's belief that there is a shared intention is epistemically justified, though false according to Bratman and our

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participant's judgments on the *Commitment* measure. That her belief is epistemically justified makes sense of her report. One way to interpret the intuitive appeal of seeing her report as consistent is that it is consistent with her beliefs.

Fourth, our participants' judgments point to something that isn't fully explained by Bratman's or Gilbert's theory of shared intention. They judged that Ned should notify Olive about his change of mind while also judging that there is no shared intention, further supporting the claim that collective action involves interpersonal normative relations distinct from the shared intention itself. This reinforces the idea that the presence of interpersonal normativity is triggered by but not dependent on the presence of a shared intention.[15]

Finally, another way our results are at odds with both theoretical perspectives arises when we compare the results of the *Commitment* measure and the *Accuracy All Things Considered* measure in TEST. Recall that the *Accuracy All Things Considered* measure aims to capture the accuracy of reports of shared intention and the *Commitment* measure aims to capture the presence of a shared intention. Since reports of shared intention are accurate when a shared intention is present, we expected these results to mirror one another, and both theoretical perspectives expect the same. But those expectations were not cleanly fulfilled. For TEST, mean scores for *Accuracy All Things Considered* are much higher than mean scores for *Commitment*. While the inferences we may appropriately draw here are limited, since we are comparing across measures rather than conditions, this divergence suggests that further research is required to better understand the nature of the relation between shared intention and shared intention reports.[16]

Our results provide evidence for the following claim: Theories of shared intention better capture our everyday thought and talk when they include individual participatory intention and explain why some behaviours are obligatory when we act together.

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[15] For further discussion, consult Gomez-Lavin and Rachar (2019, 2022) and Rachar (2021).

[16] In future work, we plan to test three explanations: (i) there was confusion about the question, (ii) different people have different intuitions about this particular case, (iii) individuals have conflicting intuitions. The distinction between (ii) and (iii) is explored in Knobe (*in press*).

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Appendix

Table 3. Kurtosis and Skewness

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1

	CONTROL $n = 100$	TEST $n = 98$	DISREGARD $n = 100$	LYING $n = 100$
Accuracy Olive's Perspective	$Ku = 13.64$ $Sk = -3.36$	$Ku = 3.77$ $Sk = -2.10$	$Ku = -1.28$ $Sk = -.01$	$Ku = -.86$ $Sk = 0.54$
Accuracy All Things Considered	$Ku = 7.61$ $Sk = -2.7$	$Ku = -.20$ $Sk = .06$	$Ku = -.20$ $Sk = 0.71$	$Ku = -1.30$ $Sk = 0.09$
Notification	$Ku = 6.12$ $Sk = -2.46$	$Ku = 7.11$ $Sk = -2.53$	$Ku = 1.62$ $Sk = -1.57$	$Ku = -1.42$ $Sk = .43$
Commitment	$Ku = 8.30$ $Sk = -2.62$	$Ku = 1.62$ $Sk = 1.62$	$Ku = 2.21$ $Sk = 1.50$	$Ku = -1.28$ $Sk = .26$

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4   This table shows the Kurtosis and Skewness represented as *Ku* and *Sk* respectively for all
5   measures across all conditions.
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8   Each table below shows the z-score, r_{rb}, and p-value for all comparisons of all measures in each
9   condition. Mann-Whitney U tests were used to assess the differences between conditions which
10   gave us the z-score and corrected p-values as well as U values. These in turn were used to calculate
11   the rank-biserial correlation, or r_{rb} value. The z-score gives us a normalized test statistic for
12   pairwise tests, the r_{rb} tells us the effect size, and the Bonferroni corrected p-value indicates if the
13   pairwise comparison is statistically significant. Where the corrected p-value is uninformative (e.g.,
14   equal or close to 1), Holm's corrected values are indicated and reported instead.
15

16   **Table 4**

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18   **Accuracy from Olive's Perspective**

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	CONTROL	TEST	DISREGARD	LYING
CONTROL $(n = 100, mdn = 100)$	–	–	–	–

TEST (n = 98, mdn = 100)	$z = 1.561$ $r_{rb} = -0.1427$ $p = .356$	–	–	–
DISREGARD (n = 100, mdn = 50)	$z = 9.162$ $r_{rb} = -0.7544$ $p < .0001$	$z = 7.555$ $r_{rb} = -0.6354$ $p < .0001$	–	–
LYING (n = 100, mdn = 32)	$z = 10.835$ $r_{rb} = -0.827$ $p < .0001$	$z = 9.219$ $r_{rb} = -0.7294$ $p < .0001$	$z = 1.673$ $r_{rb} = -0.1837$ $p < .283$	–

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4 **Table 5**
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6 **Accuracy All Things Considered**
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	CONTROL	TEST	DISREGARD	LYING
CONTROL (n = 100, mdn = 100)	–	–	–	–
TEST (n = 98, mdn = 100)	$z = 8.496$ $r_{rb} = -0.7389$ $p < .0001$	–	–	–
DISREGARD (n = 100, mdn = 50)	$z = 12.187$ $r_{rb} = -0.9014$ $p < .0001$	$z = 3.629$ $r_{rb} = -0.3439$ $p < .001$	–	–
LYING (n = 100, mdn = 32)	$z = 7.672$ $r_{rb} = -0.6709$ $p < .0001$	$z = -0.863$ $r_{rb} = 0.0736$ $p = 1.000*$	$z = -4.515$ $r_{rb} = 0.4111$ $p < .0001$	–

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2   * Holm's less conservative comparison $p = .37$

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6   **Table 6**

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8   **Notification**

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	CONTROL	TEST	DISREGARD	LYING
CONTROL (n = 100, mdn = 100)	–	–	–	–
TEST (n = 98, mdn = 100)	$z = - 0.4865$ $r_{rb} = 0.039$ $p = 1.000*$	–	–	–
DISREGARD (n = 100, mdn = 95)	$z = 1.511$ $r_{rb} = -0.136$ $p = .392$	$z = 1.990$ $r_{rb} = -0.1811$ $p = .14$	–	–
LYING (n = 100, mdn = 26)	$z = 8.897$ $r_{rb} = -0.6797$ $p < .0001$	$z = 9.339$ $r_{rb} = -0.7098$ $p < .0001$	$z = 7.386$ $r_{rb} = -0.62$ $p < .0001$	–

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11   * Holm's less conservative comparison $p = . 599$

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5 **Table 7**
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8 **Commitment**
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	CONTROL	TEST	DISREGARD	LYING
CONTROL (n = 100, mdn = 100)	–	–	–	–
TEST (n = 98, mdn = 7.5)	$z = 12.872$ $r_{rb} = -0.9576$ $p < .0001$	–	–	–
DISREGARD (n = 100, mdn = 9.5)	$z = 12.524$ $r_{rb} = -0.9612$ $p < .0001$	$z = -0.412$ $r_{rb} = 0.0553$ $p = 1.000*$	–	–
LYING (n = 100, mdn = 35)	$z = 7.935$ $r_{rb} = -0.7871$ $p < .0001$	$z = -4.977$ $r_{rb} = 0.4752$ $p < .0001$	$z = -4.588$ $r_{rb} = 0.4475$ $p < .0001$	–

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11
12 * Holm's less conservative comparison $p = .49$
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