

Intuitions about Joint Commitment

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Abstract: In what sense is commitment essential to joint action, and do the participants in a joint action themselves perceive commitment as essential? Attempts to answer this question have so far been hampered by clashes of intuition. Perhaps this is because the intuitions in question have mostly been investigated using informal methods only. To explore this possibility, we adopted a more formal approach to testing intuitions about joint action, sampling naïve participants' intuitions about experimentally controlled scenarios. This approach did reveal patterns in participants' responses which may hint at potential conceptual links between commitment and joint action. It did not however provide evidence to support the view that commitment is essential to joint action, at least not from the agents' own perspective. We conclude that intuitions alone, even when drawn systematically from a large sample, may be a poor basis for theorising about joint action.

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1. Introduction

In recent decades, philosophers have devoted considerable effort to investigating the phenomenon (or phenomena) of joint action.¹ Despite this, significant disagreement on the basic features of joint action remains: for instance, on whether joint action essentially involves an irreducibly joint commitment (for example, Gilbert 2013 versus Bratman 2014); on whether joint action essentially involves common knowledge (for example, Bratman 2014 versus Blomberg 2016); on whether joint action essentially involves a special kind of reasoning (Gold and Sugden 2007; Pacherie 2012), a special kind of mental state (Searle 1990; Gallotti 2011; Gallotti and Frith 2013); or a special kind of subject (Helm 2008) as opposed to mental states with plural subjects (Schmid 2009). Here we focus on the issue about commitment. Our aim is to identify obstacles to adjudicating among competing theoretical positions and to explore the prospects for one way of overcoming the obstacles.

What kinds of commitment might be essential to joint action? One kind of commitment is associated with ordinary individual intention: to intend to do something arguably involves being committed to doing it. Whatever kind of commitment is involved here can only be a commitment of the subject to herself; or at least, it cannot be a commitment of anyone but the subject and it cannot be a commitment to anyone other than the subject. One of Gilbert's groundbreaking contributions was to focus on a different kind of commitment she labels 'joint commitment.' This is a commitment whereby 'each is obligated to all the others for performance' (1990, p.8; cf. also Gomez-Lavin & Rachar, 2019; 2021;

¹ A variety of labels have been used for what we are calling 'joint action'. These include 'joint action' (Brooks 1981; Sebanz, Bekkering, and Knoblich 2006; Knoblich, Butterfill, and Sebanz 2011; Tollefsen 2005; Pettit and Schweikard 2006; Carpenter 2009; Pacherie 2010; Brownell 2011; Sacheli, Arcangeli, and Paulesu 2018; Meyer, Wel, and Hunnius 2016), 'social action' (Tuomela and Miller 1985), 'collective action' (Searle 1990; Gilbert 2010), 'joint activity' (Baier 1997), 'acting together' (Tuomela 2000), 'shared intentional activity' (Bratman 1997), 'plural action' (Schmid 2008), an exercise of 'joint agency' (Pacherie 2013) or of 'small scale shared agency' (Bratman 2014), 'intentional joint action' (Blomberg 2016), 'collective intentional behavior' (which is an exercise of 'plural agency') (Ludwig 2016), and 'collective activity' (Longworth 2019). We leave open whether these are all labels for a single thing or whether different researchers are targeting different things. We use the term 'joint action' for the targets of Gilbert's analysis. We avoid potentially controversial assumptions about exactly what these targets are because we have implemented joint action scenarios devised by Gilbert to illustrate her view.

Roth, 2004; Löhr, 2022). The question we focus on here is whether joint action essentially involves joint commitment.

Clashing intuitions appear to inform disagreement on this question. For instance, Gilbert reasons that if joint action essentially involves joint commitment, then when agents performing joint actions are doing so in virtue of intentions, these intentions cannot be unilaterally rescinded. (Several routes to this view are available; see Gilbert 2009; 2013.) To illustrate, Gilbert describes a case:

‘The parties are Ned and Olive, and Olive is speaking: “Our plan was to hike to the top of the hill. We arrived at the hill and started up. As he told me later, Ned realized early on that it would be too much for him to go all the way to the top, and decided that he would only go half way. Though he no longer had any intention of hiking to the top of the hill, he had as yet said nothing about this to me, thinking it best to wait until we were at least half way up before doing so. Before then we encountered Pam, who asked me how far we intended to go. I said that our intention was to hike to the top of the hill, as indeed it was”’ (Gilbert 2013, p. 8).

Gilbert reasons that the intuitive correctness of Pam’s statement supports the view that Ned could not unilaterally rescind their intention, and that this in turn supports the view that joint action essentially involves joint commitment. Elaborating on this, Gilbert further specifies that joint commitments entail obligations; as she puts it in her seminal (1990) paper: ‘As long as people are out on a walk together, they will understand that each has an obligation to do what he or she can to achieve the relevant goal’ (p.6). And more recently: ‘obligations and entitlements—not necessarily moral obligations and rights—are inherent in acting together’² (2013, p. 53).

How compelling is Gilbert’s line of thought? Bratman’s reply is blunt:

‘As I see it, once Ned has changed his mind they no longer have a shared intention to climb to the top’ (Bratman 2014, p. 117).

How can we account for such stark clashes of intuition? Gilbert is explicit that her views, like those of many philosophers, are based on ‘informal observation including self-observation’

² Note that Gilbert is careful to acknowledge that the obligations in question may not be of a moral nature, and that they may be outweighed by moral obligations.

and her ‘own sense of the matter’ (Gilbert 2013, pp. 24, 358). It is no surprise that such methods have not reliably led philosophers with different theoretical positions (and potentially also different experiences and backgrounds) to adopt compatible views.

In light of this, it appears that the method of relying on one’s intuitions presents two obstacles to adjudicating among competing theoretical positions. First, different researchers may have conflicting intuitions (as Bratman and Gilbert appear to), or they may have not stable intuitions at all (as is the case for the current authors). And second, we cannot be confident that there are no extraneous personal or cultural factors which are serving as crucial inputs to the procedures. And yet, before writing off attempts to draw conclusions from intuitions altogether, we should give arguments from intuitions the best chance of success. To this end, we can follow the ground-breaking work of Tollefsen et al (2014) and Gomez-Lavin and Rachar (2019) in moving from informal observation to a more formal approach, and considering the views of a more diverse group of people than the professional philosophers whose theories are at stake. Gomez-Lavin and Rachar (2019) offer evidence against the existence of intuitions which, they suggest, have been used to support Bratman’s view. As they note (p. 117), their findings do not directly provide support for Gilbert’s view. In a follow-up study, Gomez-Lavin and Rachar (2021) go further. Their results suggested that participants in a joint action may feel obliged to notify joint action partners that they are unilaterally ending participation but not – pace Gilbert (1990; 2013) – to ask for permission to do so. However, the cogency of this interpretation of their results has been questioned by Löhr (2022) on methodological grounds. Briefly, Löhr notes that in asking their participants about a putative obligation to request permission to disengage, Gomez-Lavin and Rachar ask whether they ‘have to’ do so; by contrast, in asking about a putative obligation to notify another of their disengagement, the experiments ask whether they ‘should’ do so (pp. 759-60). Plausibly, this difference in wording could at least partially explain the differences in responses to those two questions. For, as Löhr (2022, p. 759) reminds us, it is coherent to think there are things we should do (voting in a local election perhaps) that we do not strictly have to do. It remains an open question, therefore, whether Gilbert’s intuitions are widely shared among non-philosophers.

In three pre-registered experiments, we set out to discover how naive subjects categorise behaviours as involving shared intentions, commitments and obligations. Would they follow Gilbert in identifying cases in which there is a joint plan, but individual intentions not to fulfil the plan, as being like cases in which there is uncontroversially a shared intention as far as the shared intention, commitment and obligations go (Experiments 1, 2, & 3)? Or

would they diverge from Gilbert in identifying such cases as more like cases in which there is uncontroversially no joint plan at all (Experiments 1 & 2)? To test this, we implemented scenarios spelled out by Gilbert in arguing for her view, and stuck as closely as possible to Gilbert's wording in formulating our questions. By asking participants whether they agreed with Gilbert that the agents in our test conditions had shared intentions, commitments and obligations, we were also able to probe whether participants' intuitions about the relationships among these three concepts match Gilbert's. On Gilbert's analysis, shared intentions entail joint commitments as well as obligations, so responses to questions about these should be highly correlated. On other views, in contrast, this may not be the case – Bratman (1997; 2014), for example, denies that shared intentions entail joint commitments or obligations, though he does acknowledge that they may be commonly associated with commitments and obligations to others. On other views, in contrast, this may not be the case – Bratman (1997; 2014), for example, denies that shared intentions entail commitments or obligations, though he does acknowledge that they often involve commitments and obligations. It is arguably also coherent to hold, contrary to both Gilbert and Bratman, that shared intentions entail commitments but not obligations. This is why we asked participants about shared intentions, commitments and obligations.

In sticking as closely as possible to Gilbert's formulations in designing our experiments we faced a problem. The formulations are longer and more complex than would be ideal for a psychological study in which great weight is placed on ensuring as narrow a focus as possible on the question of interest while minimising extraneous features, cognitive demands and possible sources of confusion. For our purposes, however, it would not have been appropriate to substantially alter Gilbert's formulations, given that this would require taking a view on which features are extraneous, which would likely be controversial. More importantly, our goal was to test whether the scenarios Gilbert used to generate intuitions actually do generate the specified intuitions. Of course if Gilbert's scenarios do yield replicable effects it would be important to further support the conclusions drawn with more targeted stimuli and measures.

A second problem that arises from sticking to Gilbert's formulations is that it is possible to interpret her use of terms like 'intention', 'commitment' and 'obligation' as having a specialized technical use. (We thank an anonymous reviewer for this observation.) It is possible that non-specialists will understand these terms in a way quite different from what Gilbert intends. We acknowledge this potential limitation (and will return to it in the discussion). To partially address this while avoiding the pitfalls of deviating from Gilbert's

formulations, we substituted a more colloquial formulation (i.e. ‘We will walk to the top of the hill.’) in Experiment 2 to replace Gilbert’s technical term ‘intention’.

The question of what people think about joint action has special significance for Gilbert’s view. It is not simply that support for Gilbert’s view might be strengthened if non-philosophers turn out to share her intuitions about joint action. Rather, Gilbert claims that the agents of a joint action regard themselves as committed and obligated in virtue of being such: ‘I take it as read here that the account [of joint action] should be such that the parties to the shared intention will understand that they have the stated obligations, and that they understand that this is so as a matter of what a shared intention is’ (2009, p. 175). This means that Gilbert’s theory, as formulated, entails that ordinary people connect shared intention, commitment and obligation in the way that she does.

All three experiments were approved by the (EPKEB) United Ethical Review Board for Research in Psychology, and carried out in accordance with the Declaration of Helsinki. Participants were recruited from Prolific Academic. There were no geographical restrictions; the experiment was open to all prolific users over the age of 18. Each participant received 60 pence for their participation. The pre-registered study information can be found here:

- <https://aspredicted.org/blind.php?x=dv67ap>
- <https://aspredicted.org/blind.php?x=ix7qf9>
- <https://aspredicted.org/blind.php?x=dx3ss3>

2. Experiment 1

In Experiment 1, we manipulated whether participants were considering a description of joint intention with no complications (Baseline Condition), a description of joint intention where the participants had unilaterally and secretly decided they would abort the activity (Test Condition), or a description involving individual, not joint, intention (Parallel Condition). We

presented three groups of participants ($N = 92$; 35 female, 28 male, 29 unspecified³; Mean age = 28.8, $SD = 9.6$) with the following three vignettes:

Baseline Condition: Ned and Olive's plan was to hike to the top of the hill. They arrived at the hill and started up. On the way, they encountered Pam, who asked how far they intended to go. Olive said, 'Our intention is to hike to the top of the hill.'

Test Condition: Ned and Olive's plan was to hike to the top of the hill. They arrived at the hill and started up. As he told Olive later, Ned realized early on that it would be too much for him to go all the way to the top, and decided that he would only go half way. Though he no longer had any intention of hiking to the top of the hill, he had as yet said nothing about this to Olive, thinking it best to wait until he and Olive were at least half way up before doing so. As it happens, Olive was in the same position as Ned: she'd also decided that she would not go all the way to the top of the hill, though she hadn't yet broached the subject with Ned. Before either of them got around to raising this issue, they encountered Pam, who asked Olive how far they intended to go. Olive said, 'Our intention is to hike to the top of the hill.'

Parallel Condition: Olive's plan was to hike to the top of the hill. She arrived at the hill and started up. As she did so, she saw Ned ahead of her on the path also hiking towards the top of the hill. At some point along the way, she realized that it would be too much for her to go all the way to the top, and decided that she would only go half way. Along the way she ran into Ned sitting down and taking a break. Just then Pam also appeared, who asked how far we intended to go. Olive said, 'Our intention is to hike to the top of the hill.'

All participants were then presented with the following three questions, each couched in Gilbert's own terms in order to test her view as directly as possible:

Shared Intention Question: "To what extent would you agree that Olive's statement to Pam at the end was accurate (i.e., 'Our intention is to hike to the top of the hill')?"

Answers were given on a 5-point scale ranging from 'Strongly disagree' to 'Strongly agree'.

³ This high number of unspecified responses was due to experimenter error – i.e. this question was not administered to these 27 participants.

Commitment Question: “To what extent do you think that Ned and Olive have a commitment to walk to the top of the hill?”

Answers were given on a 5-point scale ranging from ‘Strongly disagree’ to ‘Strongly agree’.

Obligation Question: “To what extent do you think that Ned and Olive have an obligation to walk to the top of the hill?”

Answers were given on a 5-point scale ranging from ‘Strongly agree’ to ‘Strongly disagree’.

We take Gilbert’s position to predict that, on each question, answers in the baseline and test conditions should not differ, but that the test and parallel conditions should differ; in particular, participants’ answers should be closer to ‘Strongly Agree’ in the test than in the parallel condition.⁴ This is because, as mentioned above, Gilbert holds that shared intentions entail both joint commitments and obligations, so that both joint commitments and obligations are established at the start of the scenario in the Baseline and Test Conditions (but not the Parallel Condition); and also that shared intentions, joint commitments and obligations cannot be unilaterally rescinded.

Results

For the shared intention question, we performed a three-way Anova, which revealed a significant effect of condition, $F(2,87) = 25.1, p < .001, \eta^2 = .37$. We then performed post-hoc pairwise comparisons using a Bonferroni correction ($\alpha = .017$), which revealed that responses in the test condition ($M = 2.43$) were significantly lower than in the baseline

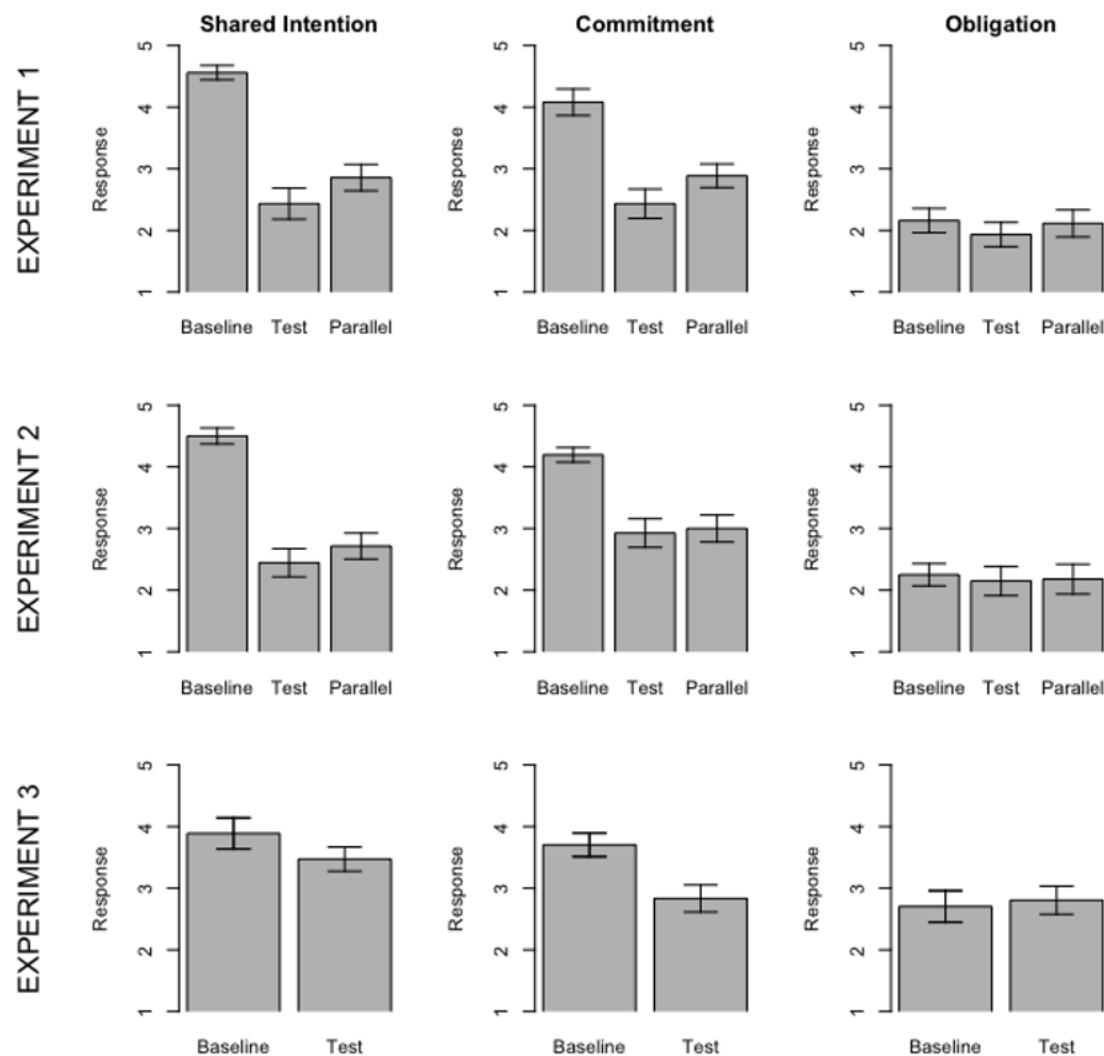
⁴ We note that the views of opponents of Gilbert, such as Bratman, do not generate relevant predictions which are distinct from these. This is because they may allow that commitments are commonly associated with joint action even though not essential (see Bratman 2014, pp. 110–1 for discussion) and because our Commitment Question is formulated in a broad way and does not specify an irreducibly joint commitment. Despite this, we chose to not formulate the Commitment Question in terms of an irreducibly joint commitment because we were concerned that doing so would require terminology that may be unfamiliar to our participants. Thus the weaker formulation gives us the best chance of confirming the predictions derived from Gilbert’s position while admittedly limiting the strength of the conclusions we could draw from their confirmation.

condition ($M = 4.56$), $t(40.49) = 7.65$, $p < .001$, $d = 1.94$, and also significantly lower than in the parallel condition ($M = 2.86$), $t(50.89) = 7$, $p < .001$, $d = 0.32$. This is diametrically opposed to the pattern which Gilbert's position would predict.

For the commitment question, we performed a three-way Anova, which revealed a significant effect of condition, $F(2,87) = 14.00$, $p < .001$, $\eta^2 = .24$. We then performed post-hoc pairwise comparisons using a Bonferroni correction ($\alpha = .017$), which revealed that responses in the test condition ($M = 2.43$) were significantly lower than in the baseline condition ($M = 4.08$), $t(53) = 5.13$, $p < .001$, $d = 1.36$, but did not differ significantly from the parallel condition ($M = 2.89$), $t(57.98) = 1.49$, $p = .14$, $d = 0.37$. This pattern is inconsistent with Gilbert's analysis.

For the obligation question, we performed a three-way Anova, which did not reveal a significant effect of condition, $F(2,87) = .31$, $p = .73$. We may speculate that many participants found the term 'obligation' to be too strong for such a casual instance of joint action. One possibility is that, unlike Gilbert, they may not recognize a role for a non-moral notion of obligation in joint action. Another possibility is that participants do recognise a non-moral notion of obligation but, again unlike Gilbert, would not use the term 'obligation' to express it.

Figure 1. Mean responses for all three test questions in Experiments 1-3. The error bars represent standard errors.



Next, we performed a battery of simple linear regressions to predict responses to the shared intention question based on responses to the commitment question, to predict responses to the shared intention question based on responses to the obligation question, and to predict responses to the commitment question based on responses to the obligation question. The rationale for this was that, on Gilbert’s analysis, shared intentions entail commitments (joint commitments more specifically) as well as obligations, so responses to these three test questions should be highly correlated. These analyses are important insofar as they provide a

further opportunity to find support for Gilbert’s view, one that does not depend on participants finding the scenarios we used compelling. To illustrate, if participants agree that shared intentions entail commitments, then we would expect that their answers to the question about intention predict their answers to the question about commitment. Even if participants were confused by the scenarios or interpret them in some unintended way, Gilbert’s view in any case leads us to predict significant regression equations in all three cases. The results (for all three experiments), are summarized in Table 1.

Table 1. Linear Regressions

Experiment 1

Predictor response	Response predicted	Significant regression found?	Does Gilbert's analysis predict a significant regression?	<i>F</i>	<i>p</i>	<i>r</i> -squared
	shared			<i>F</i>		
commitment	intention	Y	Y	(88,1)=27.37	<.001	.23
				<i>F</i>		
obligation	commitment	N	Y	(88,1)=0.28	.6	.003
	shared			<i>F</i>		
obligation	intention	N	Y	(88,1)=0.10	.756	.001

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Experiment 2

Predictor response	Response predicted	Significant regression found?	Does Gilbert's analysis predict a significant regression?	<i>F</i>	<i>p</i>	<i>r</i> -squared
	shared			<i>F</i>		
commitment	intention	Y	Y	(89,1)=25.39	<.001	.22
obligation	commitment	N	Y	<i>F</i> (89,1)=0.2	.66	.002
	shared			<i>F</i>		
obligation	intention	N	Y	(89,1)=0.80	.372	.008

Experiment 3

Predictor response	Response predicted	Significant regression found?	Does Gilbert's analysis predict a significant regression?	<i>F</i>	<i>p</i>	<i>r</i> -squared
	shared			<i>F</i>		
commitment	intention	N	Y	(61,1)=2.57	.114	.024
obligation	commitment	Y	Y	<i>F</i> (61,1)=10.49	.002	.13
	shared			<i>F</i>		
obligation	intention	N	Y	(61,1)=0.39	.536	.001

3. Experiment 2

In Experiment 2, we changed only the wording of the decisive statement in the vignette ‘Our intention is to hike to the top of the hill’, replacing it with ‘We will walk to the top of the hill.’ The reason for this was that talk about intention is relatively uncommon and may have made the task unnecessarily difficult for our participants. To illustrate this possibility, we consulted a large collection of English language corpora (<https://www.english-corpora.org/iweb/>). The phrase ‘we will’ occurs roughly 220 times more frequently than ‘our intention’. While not decisive, this led us to suspect that the more colloquial ‘we will’ phrasing might reduce any variance due to participants’ uncertainty about intention. This change does not alter the predictions which derive from Gilbert’s position.

The sample was made up of 91 participants (23 female, 39 male, 29 unspecified; Mean age = 25.1, $SD = 8.1$).

Results

For the shared intention question, we performed a three-way Anova, which revealed a significant effect of condition, $F(2,88) = 39.03, p < .001, \eta^2 = .47$. We then performed post-hoc pairwise comparisons using a Bonferroni correction ($\alpha = .017$), which revealed that the test condition ($M = 2.44$) differed significantly from the baseline condition ($M = 4.50$), $t(42.1) = 42.06, p < .001, d = 2.11$, but not from the parallel condition ($M = 2.71$), $t(52.5) = 0.96, p = .39, d = 0.23$. This is opposite to the pattern which Gilbert’s view predicts.

For the commitment question, we performed a three-way Anova, which revealed a significant effect of condition, $F(2,88) = 15.88, p < .001, \eta^2 = .27$. We then performed post-hoc pairwise comparisons using a Bonferroni correction ($\alpha = .017$), which revealed that responses in the test condition ($M = 2.93$) differed significantly from the baseline condition ($M = 4.19$), $t(39.3) = 4.87, p < .001, d = 1.33$, but did not differ significantly from the parallel condition ($M = 3.00$), $t(52.7) = 0.23, p = .82, d = 0.62$. Again, this is opposite to the pattern which Gilbert’s view predicts.

For the obligation question, we performed a three-way Anova, which did not reveal a significant effect of condition, $F(2,88) = 0.06, p = .94$. As noted above, we may speculate that many participants found the term ‘obligation’ to be too strong for such a casual instance of joint action.

As for Experiment 1, we performed a battery of simple linear regressions to predict responses to the shared intention question based on responses to the commitment question, to predict responses to the shared intention question based on responses to the obligation question, and to predict responses to the commitment question based on responses to the obligation question (See Table 1).

4. Experiment 3

In order to probe the robustness of our findings, we conducted Experiment 3 with new vignettes describing a different scenario (adapted from Gilbert, 2014). We were concerned that in the hill walking scenario implemented in Experiments 1 and 2, participants may have felt that either agent could walk on alone, so that commitment was not critical. The new scenario in Experiment 3 involved a higher degree of interdependence.

The two groups of participants ($N = 63$; 23 female, 26 male, 14 unspecified; Mean age = 28.1, $SD = 12.3$) were presented with the following vignettes:

Baseline Condition: Roz and Dan have decided to play a 5-set tennis match on Tuesday morning. During the second set, their friend Phil arrives and approaches the court to greet them. Roz tells him, ‘We are playing a 5-set match.’

Test Condition: Roz and Dan have decided to play a 5-set tennis match on Tuesday morning. Midway through the second set, Roz decides that she has had enough tennis and is going to stop after the second set. As it happens, Dan has the very same thought, but neither of them says anything just yet. During the second set, their friend Phil arrives and approaches the court to greet them. Roz tells him, ‘We are playing a 5-set match.’

In view of the higher degree of interdependence in this scenario, we elected not to include a parallel condition.

We take Gilbert's position to predict that the baseline and test conditions should not differ. Any evidence that they do differ would therefore present a challenge to her theory.

Results

We first performed a t-test for the shared intention question, which revealed that the test condition ($M= 3.47$) did not differ significantly from the baseline condition ($M= 3.88$), $t(52) = 1.30, p = .199, d= 0.33$. This is consistent with Gilbert's view.

We then performed a t-test for the commitment question, which revealed that responses in the test condition ($M= 2.83$) were significantly lower than in the baseline condition ($M= 3.70$), $t(60) = 2.99, p = .004, d=0.73$. Gilbert's view provides no reason to expect this.

Next, we performed a t-test for the obligation question, which revealed that the test condition ($M= 2.81$) did not differ significantly from the baseline condition ($M= 2.70$), $t(57) = 0.30, p = .767, d= 0.08$. As noted above, we may speculate that many participants found the term 'obligation' to be too strong for such a casual instance of joint action.

As for Experiments 1 and 2, we performed a battery of simple linear regressions to predict responses to the shared intention question based on responses to the commitment question, to predict responses to the shared intention question based on responses to the obligation question, and to predict responses to the commitment question based on responses to the obligation question (See Table 1).

5. Discussion

Attempts to establish which, if any, forms of commitment are essential to, rather than merely commonly associated with, joint action have so far been hampered by clashes of intuition. This may be due in part to the way in which intuitions have been investigated—usually through informal, unrepeatably observations. To improve the chance that progress in

adjudicating theories can be made by reflection on intuitions, we adopted the more systematic approach of sampling theoretically neutral, naive participants' intuitions about experimentally controlled scenarios. Indeed, this approach did reveal significant patterns in participants' responses. Some of these patterns were consistent with predictions of Gilbert's view about the role of joint commitment in joint action. In line with her view, the results of Experiments 1 and 2 revealed that participants' judgements about commitment predicted their judgements about expressions of intention, although this was not the case for Experiment 3.

However, other key predictions we derived from Gilbert's view were unsupported and, in some cases, even falsified. In particular, participants' judgments about obligations did not predict their judgments about commitment in Experiments 1 and 2; although they did in Experiment 3. Further, for the three questions in Experiments 1 and 2, Gilbert's view provides a reason to predict a difference between cases in which there is a joint plan, but individual intentions not to fulfil the plan (test condition), and cases in which there is uncontroversially no joint plan at all (parallel condition). But we did not find any such difference. Relatedly, for the three questions in all experiments, Gilbert's view provides a reason to predict no difference between cases in which there is a joint plan but individual intentions not to fulfil the plan (test condition), and cases in which there is uncontroversially a shared intention. Yet we did observe very large significant differences for the shared intention question in Experiments 1 and 2, and for the commitment question in all three experiments. Overall, these results indicate that a less informal approach to sampling naive participants' intuitions about examples does not support Gilbert's view on commitment and joint action.

Moreover, it is worth highlighting once more that our findings are problematic for Gilbert not only because they reveal that the intuitions on which she bases her theory are not widely shared. If this were the case, it would be possible to dismiss the results on the grounds that naïve participants' intuitions are irrelevant to a philosophical analysis. But, as we mentioned earlier, there is an additional problem: Gilbert's theory positively stipulates that people do understand the relationship between shared intention, commitment and obligation in the way she has spelled out, and that their having this understanding is part of their capacity to have shared intentions (2009, p. 175). Of course this problem could be avoided by revising Gilbert's view in such a way as to eliminate this requirement.

Should we therefore reject Gilbert's view? We believe that it would be premature to draw any firm conclusions. For one thing, we must be cautious in drawing inferences from a narrow range of scenarios. While it is significant that the scenarios Gilbert herself introduces

to support her view do not appear to generate the intuitions she predicts, it remains possible that other scenarios could generate different intuitions. In this vein, Löhr (2022) has suggested that cross-cultural research could be helpful in teasing apart subtle differences in people's attitudes towards obligations.

But even assuming, in line with our findings, that the agents of a joint action do not explicitly link shared intention, commitment and obligation in the way Gilbert suggests, there are at least three possibilities which our findings cannot rule out. One is that the concepts are linked despite lay people's failure to appreciate the links without philosophical training. Another, perhaps related possibility is that there are implicit connections among intention, commitment and obligation; if so, implicit measures could yield a different picture (Bonalumi et al, 2019; 2022).⁵ Finally, we must acknowledge that aspects of Gilbert's view may survive even if some details are wrong. For instance, in our experiments both parties to the joint action unilaterally rescinded. Gilbert may be wrong that this is impossible but still correct that just one of the parties cannot unilaterally rescind.

To conclude with a methodological point, the current study complements recent research suggesting that intuitions alone, even when drawn systematically from a large sample, fail to adjudicate between competing views about the role of commitment in joint action (Gomez-Lavin and Rachar 2019; 2021).⁶ Looking more broadly, there is also reason to doubt that intuitions alone can settle questions about the nature of knowledge (e.g. Starmans and Friedman 2012; 2013). Overall, our complex pattern of findings indicates that intuitions are no better as a basis for theorising about joint action.

⁵ It is worth noting that Michael et al (2016) found a dissociation between perceived commitment and obligation using implicit measures. However they did not explicitly contrast parallel with joint action.

⁶ Although these authors endorse a stronger conclusion on the basis of their findings (compare Gomez-Lavin and Rachar 2019, p. 119: 'our common intuitions are in line with a general form of the normativist thesis ...'), we are more cautious: first, because their indicators of normativity appear as strongly present in cases of minimal interaction as in paradigm joint actions (contra to what we suppose either Bratman or Gilbert might predict); and second, because their experiments are not designed to distinguish the normativist thesis from Bratman's competing view that norms are merely contingently associated with acting together.

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References

- Baier, Annette C. 1997. "Doing Things with Others: The Mental Commons." In *Commonality and Particularity in Ethics*, edited by Lilli Alanen, Sarah Heinamaa, and Thomas Wallgren, 15–44. Palgrave Macmillan. https://doi.org/10.1007/978-1-349-25602-0_2.
- Blomberg, Olle. 2016. "Common Knowledge and Reductionism About Shared Agency." *Australasian Journal of Philosophy* 94 (2): 315–26. <https://doi.org/10.1080/00048402.2015.1055581>.
- Bonalumi, Francesca, Margherita Isella, and John Michael. "Cueing implicit commitment." *Review of Philosophy and Psychology* 10.4 (2019): 669-688.
- Bonalumi, Francesca, John Michael, and Christophe Heintz. "Perceiving commitments: When we both know that you are counting on me." *Mind & Language* 37.4 (2022): 502-524.
- Bratman, Michael E. 1997. "I Intend That We J." In *Contemporary Action Theory, Volume 2: Social Action*, edited by Raimo Tuomela and Ghita Holmstrom-Hintikka. Dordrecht: Kluwer.
- . 2014. *Shared Agency: A Planning Theory of Acting Together*. Oxford: Oxford University Press. <http://0-dx.doi.org.pugwash.lib.warwick.ac.uk/10.1093/acprof:oso/9780199897933.001.0001>.
- Brooks, D. H. M. 1981. "Joint Action." *Mind*, New series, 90 (357): 113–19. <http://www.jstor.org/stable/2253670>.

Brownell, Celia A. 2011. "Early Developments in Joint Action." *Review of Philosophy and Psychology* 2: 193–211. <https://doi.org/10.1007/s13164-011-0056-1>.

Carpenter, Malinda. 2009. "Just How Joint Is Joint Action in Infancy?" *Topics in Cognitive Science* 1 (2): 380–92.

Gallotti, Mattia. 2011. "A Naturalistic Argument for the Irreducibility of Collective Intentionality." *Philosophy of the Social Sciences* 20 (10): 3–30. <https://doi.org/10.1177/0048393111426864>.

Gallotti, Mattia, and Chris D. Frith. 2013. "Social Cognition in the We-Mode." *Trends in Cognitive Sciences* 17 (4): 160–65. <https://doi.org/10.1016/j.tics.2013.02.002>.

Gilbert, M. 1990. Walking together: A paradigmatic social phenomenon. *MidWest studies in philosophy*, 15, 1-14.

———. 2009. "Shared Intention and Personal Intentions." *Philosophical Studies* 144 (1): 167–87. <https://doi.org/10.1007/s11098-009-9372-z>.

———. 2010. "Collective Action." In *A Companion to the Philosophy of Action*, edited by Timothy O'Connor and Constantine Sandis, 67–73. Oxford: Blackwell.

———. 2013. *Joint Commitment: How We Make the Social World*. Oxford: Oxford University Press. <http://0-dx.doi.org.pugwash.lib.warwick.ac.uk/10.1093/acprof:oso/9780199970148.001.0001>.

Gold, Natalie, and Robert Sugden. 2007. "Collective Intentions and Team Agency." *Journal of Philosophy* 104 (3): 109–37.

Gomez-Lavin, Javier, and Matthew Rachar. "Normativity in joint action." *Mind & Language* 34.1 (2019): 97-120.

Gomez-Lavin, Javier, and Matthew Rachar. "Why we need a new normativism about collective action." *The Philosophical Quarterly* 72.2 (2022): 478-507.

Helm, Bennett W. 2008. "Plural Agents." *Nous* 42 (1): 17–49. <https://doi.org/10.1111/j.1468-0068.2007.00672.x>.

Knoblich, Günther, Stephen A. Butterfill, and Natalie Sebanz. 2011. "Psychological Research on Joint Action: Theory and Data." In *Psychology of Learning and Motivation*, edited by Brian Ross, 51:59–101. San Diego, CA: Academic Press.

Löhr, G. "Recent Experimental Philosophy on Joint Action: Do We Need a New Normativism About Collective Action?", *The Philosophical Quarterly*, Volume 72, Issue 3, July 2022, 754–762. <https://doi.org/10.1093/pq/pqab070>

Longworth, Guy. 2019. "Sharing Non-Observational Knowledge." *Inquiry* 0 (0): 1–21. <https://doi.org/10.1080/0020174X.2019.1680430>.

Ludwig, Kirk. 2016. *From Individual to Plural Agency: Collective Action*. Oxford University Press.

Meyer, Marlene, Robrecht P. R. D. van der Wel, and Sabine Hunnius. 2016. "Planning My Actions to Accommodate Yours: Joint Action Development During Early Childhood." *Phil. Trans. R. Soc. B* 371 (1693): 20150371. <https://doi.org/10.1098/rstb.2015.0371>.

Michael, J., Sebanz, N., & Knoblich, G. (2016). Observing joint action: Coordination creates commitment. *Cognition*, 157, 106-113.

Pacherie, Elisabeth. 2010. "The Phenomenology of Joint Action: Self-Agency Vs. Joint-Agency." In *Joint Action*, edited by Axel Seemann. MIT Press.

———. 2012. "Intentional Joint Agency: Shared Intention Lite." *Synthese* forthcoming.

———. 2013. "Intentional Joint Agency: Shared Intention Lite." *Synthese* 190 (10): 1817–39. <https://doi.org/10.1007/s11229-013-0263-7>.

Pettit, Philip, and David Schweikard. 2006. "Joint Actions and Group Agents." *Philosophy of the Social Sciences* 36 (1): 18–39. <https://doi.org/10.1177/0048393105284169>.

Roth A (2004) Shared agency and contralateral commitments. *Philos Rev* 113(3):359–410

Sacheli, Lucia Maria, Elisa Arcangeli, and Eraldo Paulesu. 2018. "Evidence for a Dyadic Motor Plan in Joint Action." *Scientific Reports* 8 (1): 5027. <https://doi.org/10.1038/s41598-018-23275-9>.

Schmid, Hans Bernhard. 2008. "Plural Action." *Philosophy of the Social Sciences* 38 (1): 25–54. <https://doi.org/10.1177/0048393107310877>.

———. 2009. *Plural Action: Essays in Philosophy and Social Science*. Vol. 58. Dordrecht: Springer.

Searle, John R. 1990. "Collective Intentions and Actions." In *Intentions in Communication*, edited by P. Cohen, J. Morgan, and M. E. Pollack, 90–105. Cambridge: Cambridge University Press.

Sebanz, Natalie, Harold Bekkering, and Günther Knoblich. 2006. "Joint Action: Bodies and Mind Moving Together." *Trends in Cognitive Sciences* 10 (2): 70–76.

Starmans, Christina, and Ori Friedman. 2012. "The Folk Conception of Knowledge." *Cognition* 124 (3): 272–83. <https://doi.org/10.1016/j.cognition.2012.05.017>.

———. 2013. "Taking 'Know' for an Answer: A Reply to Nagel, San Juan, and Mar." *Cognition* 129 (3): 662–65. <https://doi.org/10.1016/j.cognition.2013.05.009>.

Tollefsen, Deborah. 2005. "Let's Pretend: Children and Joint Action." *Philosophy of the Social Sciences* 35 (75): 74–97.

Tollefsen, D., Kreuz, R., and Dale, R. (2014). Flavors of "Togetherness". In Lombrozo, T., Knobe, J., and Nichols, S., editors, *Oxford Studies in Experimental Philosophy*, volume 1, pages 232–252. Oxford: OUP.

Tuomela, R. 2000. *Cooperation: A Philosophical Study*. Amsterdam: Springer Science & Business Media.

Tuomela, Raimo, and Kaarlo Miller. 1985. "We-Intentions and Social Action." *Analyse & Kritik* 7 (1): 26–43. <https://doi.org/10.1515/auk-1985-0102>.