

# *The paraphrase argument against collective actions*

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## **Abstract**

This paper is about the status of collective actions. According to one view, sentences about collective actions are merely a shorthand for sentences about individual actions. This is taken to support the claim that collective actions metaphysically reduce to individual actions. I reconstruct this argument and show via counterexamples that it is not sound. The argument relies on a paraphrase procedure to unpack alleged shorthand sentences about collective actions into sentences about individual actions. I argue that the best paraphrase procedure that has been put forward so far fails to produce adequate results. Absent a better paraphrase procedure, reductionists about collective actions have to resort to other arguments to support a reduction.

## **1. Introduction**

Are there collective actions? Or are there only actions of individuals, of which we sometimes speak as collective actions? A widely held view answers the latter question in the affirmative. Proponents of this view point out that all statements about alleged collective actions are *merely a shorthand* for statements about actions of individuals. This is taken to support the claim that collective actions metaphysically reduce to individual actions. In this paper I argue that this view is untenable. I raise principled doubts about its overall strategy, reconstruct an argument for it, and show with three different counterexamples that it fails.

I call this argument for the metaphysical reduction of collective actions the *paraphrase argument*. The paraphrase argument expounds on the belief that statements about alleged collective actions are merely a shorthand. To illustrate, consider the sentence “the Supreme Court strikes down the Defense of Marriage Act.” This sentence is about a collective action. It suggests that the Supreme Court, which comprises a group of individuals, performs a collective action. Proponents of the paraphrase argument contend that the sentence is merely a shorthand for a different sentence such as “the justices strike down the Defense of Marriage Act.” Paraphrasing the sentence about an alleged collective action will reveal that collective actions are

just actions of individuals, or so argue proponents of this argument. Quinton (1975) is the locus classicus for expressing the belief that statements about alleged collective actions are merely a shorthand. I call this the *paraphrase hypothesis*.

[A]ll statements about social objects are statements about individuals, their interests, attitudes, decisions and actions. But the predicates of these statements [...] mention social objects in a way that is not practically or usefully eliminable, even if it is eliminable in principle. (Quinton, 1975, 25)

This paraphrase hypothesis is often expressed,<sup>1</sup> but has never been fully defended.<sup>2</sup> Furthermore, note that it makes a claim about “statements.” It is not obvious how metaphysical conclusions would follow from a claim about statements. We are lacking a detailed argument showing how the truth of the hypothesis would support a metaphysical reduction. With this paper, I aim to rectify these shortcomings. However, I begin on a skeptical note in Section 2 by cautioning against undue optimism about the potential of paraphrase arguments in general and outlining desiderata they should satisfy. I then continue more constructively. In Section 3 I present a paraphrase procedure that unpacks statements about collective actions into statements about individual actions. In Section 4 I reconstruct the argument for how this procedure may vindicate a metaphysical reduction of collective actions. Eventually, I return to a skeptical outlook. I observe in Section 5 how this paraphrase procedure does not meet the desiderata discussed in Section 2. And I show with three counterexamples different ways in which the paraphrase argument fails.

Two clarificatory remarks before we get started. First, the topic of this paper is the question whether collective actions *metaphysically reduce* to individual actions. Even

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<sup>1</sup>Several authors refer to this hypothesis using the term “shorthand.” French (1979, 211), Wall (2000, 195-96), Elster (2007, 13) and List and Pettit (2011, 2-3) are examples. Furthermore, some authors advance a paraphrase argument under a different heading. Watkins (1973), Quinton (1975, 23-25), Copp (1979, 178), Tuomela (1989) and Miller (2001, 10) are examples. Sawyer (2001, 563) attributes a “shorthand” view to Coleman (1994). A very similar hypothesis can be found in the debate on collective responsibility. See Cooper (1968) and Isaacs (2011, 82), who reject the analogue shorthand hypothesis for collective responsibility.

<sup>2</sup>To my knowledge only Ludwig (2007), Ludwig (2014) and Massey (1976) can be read as attempting to show that the paraphrase hypothesis is true by giving rigorous accounts of how such a paraphrase might work in principle. Tuomela (1989, 476) acknowledges that we need to show that the paraphrase hypothesis is true. Short of doing so himself he suggests that a formal analysis of the logical form of collective action sentences should be used in a “deeper investigation.” I read Ludwig (2007) as undertaking this deeper investigation in the way suggested. We should not confuse the paraphrase hypothesis with a claim about constitution or grounding (see my comments below). The argument by Copp (1979) gives an account of constitution. And, unlike any paraphrase argument, he does not base his claims on an investigation of natural language.

if collective actions reduce to individual actions, there is a further question whether collective actions exist or whether they are eliminated by a reduction (List and Pettit, 2011; Sylvan, 2012). Eliminative reductionists deny that collective actions exist. In contrast, non-eliminative reductionists accept that there are collective actions even though they metaphysically reduce to individual actions. I am mainly interested in the common ground between these two positions, which is the reductionist conclusion that collective actions *just are* the actions of individuals.

Second, this reductionist claim must be distinguished from a claim about constitution or grounding. Constitutionists contend that collective actions are constituted by, or grounded in, or brought about by the actions of individuals. The reductionist claim involves an identity relation, whereas the constitutionist claim involves a grounding relation. The relations differ importantly in their formal properties. The identity relation is symmetric; the grounding relation, in contrast, is asymmetric.<sup>3</sup> Constitution does not necessarily entail reduction. A collective action may be constituted by individual actions and nevertheless be distinct, i.e. non-identical, from them. In this paper, I leave questions of grounding or constitution aside to focus solely on the reductionist claim.

## 2. Desiderata for a paraphrase procedure

Formally, a paraphrase is a relation between sentences in a language. It relates one sentence, the shorthand, to another sentence, the longhand. A *paraphrase procedure* describes a method to produce a longhand sentence from a shorthand sentence, such that the former paraphrases the latter. The procedure needs to meet several desiderata, especially when it is employed to support an eliminative reduction along the lines of there being no collective actions (von Solodkoff, 2014). I will mention three desiderata and then focus only on the last one.

First, a paraphrase procedure needs to be supplemented with an explanation of why the longhand sentence straight-forwardly expresses ontological commitments, while the shorthand sentence does not (Alston, 1958). The need for such an explanation is particularly pressing for an eliminativist reduction because it rests on this asymmetry. An eliminativist about collective actions holds that the sentence “the justices strike down...” straight-forwardly expresses ontological commitments but its shorthand “the Supreme Court strikes down...” does not. This asymmetry demands an explanation for two reasons. First, because the longhand sentence is not commonly used by the speakers of a language. Second, because usually a paraphrase merely puts what a shorthand sentence expresses in different terms.

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<sup>3</sup>The identity relation is symmetric: when *A* just is *B* then it is also the case that *B* just is *A*. The constitution relation is asymmetric: when *A* is grounded in *B* then it is not the case that *B* is grounded in *A*.

This leads to a question on the logical relation between the shorthand and the longhand sentence (Nolan, 2014). The second desideratum is that a paraphrase procedure should make clear this relation. The relation cannot be that the two sentences have the same truth-value, even though that is a necessary condition (which I formulate as *Minimal Adequacy* below). Having the same truth-value is insufficient to relate longhand sentences to shorthand sentences because very many sentences have the same truth-value but by no means stand in the paraphrase relation. Another proposal is that the shorthand and the longhand sentence necessarily have the same truth-value. This would strengthen the logical connection from a biconditional to a necessary biconditional. But this again would be insufficient to relate longhand sentences to shorthand sentences, because all necessary truths have the same truth-value but by no means stand in the paraphrase relation. Finally, we might weaken this proposal again to a necessary conditional. On this proposal, any two sentences stand in the paraphrase relation if and only if, necessarily, when the shorthand sentence is true, the longhand sentence is true. Again, this is insufficient to relate longhand sentences to shorthand sentences. “Peter was more than 20 minutes late” necessarily implies “Peter was more than 10 minutes late,” but the former is not a paraphrase of the latter sentence.

The third desideratum is that the paraphrase procedure is universal. This means that it must produce an adequate longhand sentence for any alleged shorthand sentence. What makes a longhand sentence adequate? I focus on the following necessary condition for adequacy.

*Minimal Adequacy.*

A longhand (individual action sentence) is adequate only if it has the same truth-value as its shorthand (collective action sentence).

If a paraphrase procedure fails to produce an adequate paraphrase for a given purported shorthand sentence, the purported shorthand sentence actually might not be shorthand at all. A paraphrase procedure that is not universal cannot support reductionist conclusions, because these conclusions quantify over their targets universally. As for example in the claim that *all* collective actions are just the actions of individuals.

Given these desiderata, the prospect of formulating a paraphrase procedure to support a metaphysical reduction appears dim (Nolan, 2014). Indeed, I will argue that in the case of collective actions, the best paraphrase procedure known so far is not universal. It therefore fails to support a reductionist conclusion. In the following section I put forward a paraphrase procedure based on the work of Ludwig (2007) on

the semantics of action sentences.<sup>4</sup> Even though it eventually fails as a paraphrase procedure, Ludwig's proposal stands out as one of the few rigorous attempts to vindicate the paraphrase hypothesis.<sup>5</sup>

### 3. Paraphrase procedure

The paraphrase procedure I detail below rests on a regimentation of action sentences. Let an *action sentence* be any sentence in a natural language that refers to an action. Consider the following examples.

1. "I build a boat."
2. "We build a boat."
3. "The judge finds the defendant to be guilty."
4. "The judges find the defendant to be guilty."

The subject term is singular in sentences 1 and 3, and plural in sentences 2 and 4. Note that the form of the subject does not determine whether the sentence refers to individual or collective actions. Action sentences with a singular subject term can also refer to collective actions. An example is the action sentence "the Security Council condemned the violence in Syria." Despite the singular subject term, this is a collective action insofar as the UN Security Council consists of several members. To avoid this complication, I focus on action sentences that are clearly about individual actions when they have singular subject terms. I call these *individual action sentences*. Analogously, I call all sentences with plural subject terms *collective action sentences*.<sup>6</sup>

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<sup>4</sup>Ludwig (2007, 2014) may not explicitly pursue a paraphrase strategy but instead be interested only in a semantic investigation. At any rate, the proposal can be extracted from its original argument and be used as a paraphrase procedure.

<sup>5</sup>For illustration, consider an analogy to Fodor (1974), who provides a formal account of theory reduction. In my opinion, Ludwig (2007) provides an analogous account of action reduction. Of course, the two authors come to opposite conclusions in their respective domains. Fodor (1974) argues against a reduction of theories, while Ludwig (2007) argues for a reduction of collective actions. However, both authors give formal accounts of their respective targets for a reduction (theories for Fodor, actions for Ludwig) and the success conditions for reducing them (existence of bridge laws for Fodor, presumably truth-preservation for Ludwig). An alternative formal account of (mereologically) reducing collective actions is Massey (1976), who develops a linguistically informed Leśniewski mereology logic for collective actions.

<sup>6</sup>There are two ways to understand action sentences with plural subject terms. They could be understood either *collectively*, in the sense that we are all building one boat together. Or they could be understood *distributively*, in the sense that each of us builds one distinct boat each. Of these two options, only the former, the collective reading, is about collective actions. Since I am interested in collective actions, I focus on the collective reading. Tuomela (1989, 1995) cites an unpublished manuscript "Conjunction, Plurality, and Collective Particulars." from 1986 by R. Ware as the origin of this distinction. See also Lasersohn (1989, 1995), Landman (2000) and Ludwig (2007, 361-62).

Apart from differing in the form of their subject term, the sentences share a similar surface grammar. For simplicity, I focus on simple action sentences of this sort.

### 3.1. Individual actions

Before developing a paraphrase procedure to unpack collective action sentences, it would be useful to understand how to regiment individual action sentences. Davidson (1967) developed the standard proposal to regiment action sentences in first order logic. I indicate a regimented sentence with an  $R$ , such as  $R(1)$  for the regimented form of sentence 1.

**$R(1)$ .**  $(\exists e)[\text{agent}(a, e) \ \& \ \text{building}(e) \ \& \ \text{of}(p, e)]$

The formula  $R(1)$  reads: There exists an  $e$  such that there is an agent  $a$  of  $e$ , this  $e$  is of the type building, and this  $e$  is of a  $p$ . The letter  $e$  is a variable denoting an event. The letter  $a$  is an individual constant that refers to the person to which “I” refers in sentence 1. This person is an agent of the event  $e$ . In the formal language this is expressed with the *agent-event relation* “ $\text{agent}(a, e)$ .” Any  $a$  that occurs in the first place of the relation is an agent of the event  $e$ . Any event  $e$  is a collective action if and only if the agent  $a$  which stands in the agent-event relation to  $e$  is a group consisting of at least two individuals. The expression “ $\text{building}(e)$ ” is an *action predicate*, which says that this event is a certain action type. The individual constant “ $p$ ” refers to the boat that is built. The boat is the patient of the action. The expression “ $\text{of}(p, e)$ ” is a *patient-event relation*.

Consider sentence 3 as a further example: “The judge finds the defendant to be guilty.” Let there be an event  $e$  where a judge  $a$  finds some defendant  $p$  guilty. The action predicate  $\text{finding-guilty}(e)$  expresses this action type. The action sentence 3 is then regimented as follows.

**$R(3)$ .**  $(\exists e)[\text{agent}(a, e) \ \& \ \text{finding-guilty}(e) \ \& \ \text{defendant}(p, e)]$

The formula  $R(3)$  reads: There exists an event  $e$  such that there is an agent  $a$  of this event  $e$ , this event  $e$  is of the type finding guilty, and this event  $e$  is of a  $p$ , the defendant, who is its *patient*. These examples illustrate a simple way of regimenting action sentences, which can be generalized with a schema. I abbreviate this schema as **SI** for *individual action sentences*. Sentences that are instances of this schema are *non-reductive regimentations*.

**SI.**  $(\exists e)[\text{agent}(a, e) \ \& \ \text{action-predicate}(e) \ \& \ \text{patient-event relation}(p, e)]$

This way of formalizing action sentences has its limitations. It leaves aside aspects of the sentence that are not relevant to the discussion, such as the time at which the action was performed. We ignore tenses to keep the formal language simple. Furthermore, we do not allow for different agent-event relations. We fix the relation  $\text{agent}(a, e)$  while allowing for different action predicates for various types of actions, such as  $\text{building}(e)$  and  $\text{finding-guilty}(e)$ . There are two reasons for fixing the agent-event relation. First, in philosophy of action there is just one concept of being an agent of an action. The agent-event relation encodes this concept of agency, i.e. what is required of  $a$  to be an agent of  $e$ , however any given theory of agency would define it.<sup>7</sup> Second, it seems to be the ambition of the paraphrase argument to reduce collective actions to individual actions without changing the necessary conditions for being an agent of an action. This ambition requires that we keep the agent-event relation fixed. Otherwise we risk moving the bar of what is necessary for being an agent of an action depending on whether we talk about a collective or an individual.

Keeping the agent-event relation fixed is compatible with there being different ways for an individual to be an agent of an action. You can be an agent of scaring the chickens by running towards them or by throwing a ball at them. What is required to be an agent of an action? Theories of intentional agency differ on this. But there are two widely accepted necessary conditions underlying the agent-event relation. The first is an intentional condition, the second a causal condition.

The intentional condition says that an  $a$  is an agent of  $e$  only if there is a description of  $e$  under which  $a$  intends  $e$ . This allows for me to be an agent of actions that turn out differently than I intend. For example, when I try to wriggle a block out of a rickety tower in the *Jenga* game and the tower collapses, then I am an agent of the collapse despite intending the tower not to collapse. This is because there is a description of the collapse under which I intend the action. The collapse can be described as an attempt to win the game, which is what I intend to do. An action might turn out very differently than an agent intends, nevertheless he or she might be an agent of it. There is an intuitive way of testing whether an individual meets the intentional condition. An individual does not meet the intentional condition if she would act differently when she learns about the consequences of her actions. Suppose I learn

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<sup>7</sup>Agency over actions contrasts with agency simpliciter. Agency over actions is a relation (between agents and actions), and agency simpliciter is a predicate (of entities). While there might be different concepts of agency simpliciter, there seems to be only one concept of agency over actions (also known as intentional agency or being an agent of an action). Agency in philosophy of action must also be distinguished from agency in linguistics. In philosophy of action, depending on the theory, agency is understood as a causal, moral, or rational concept. In linguistics, agency is a semantic concept. For example in the sentence “suspicion haunts the guilty mind”, suspicion is an agent in this linguistic sense. Nothing of substantive interest for the present topic seems to follow from linguistic agency.

the probability of collapsing the *Jenga* tower when wriggling out this particular block. This is not news. I already knew that my attempt is risky. Learning that the collapse is a possible consequence of my action would not lead me to act differently.

The second condition to be an agent of an action is a causal condition. An *a* is an agent of *e* only if *a* stands in a causal relation to *e*. Different theories of causation will interpret differently what this means. But we can bracket this issue for our present purposes. I return to the conditions of the agent-event relation after presenting the paraphrase procedure for collective actions.

### 3.2. Collective actions

How should collective action sentences be regimented? The aim is to find a regimentation of collective action sentences that can be used as a paraphrase procedure. For this purpose, a regimentation schema other than SI is required. This is because using SI uniformly would treat individual and collective action sentences in the same way. If collective action sentences were regimented as instances of SI, then they would look just like regimented individual action sentences. Consider for example sentence 2: “We build a boat.” Applying schema SI to regiment this sentence results in a formula that is orthographically identical to  $R(1)$ , which is the regimentation of sentence 1: “I build a boat.” The only difference would be that the letter *a* in the agent-event relation refers to a collective instead of an individual. This would suggest that there is a collective action. Hence, SI cannot be a basis for a paraphrase procedure which aims to unpack collective action sentences into individual action sentences.

Ludwig (2007) develops a proposal that suggests a useful alternative regimentation schema. The idea is to replace the “we” with something like “each of us.” We regiment collective action sentences using this new schema that results from replacing the plural subject term in this way. I abbreviate this schema as SC for *collective* action sentences. Sentences that are instances of this schema are *reductive regimentations*.

**SC.**  $(\exists e)$  (Each *x* of *a*) [agent(*x*, *e*) & action-predicate(*e*) & patient-event-relation(*p*, *e*)]

In English, individual and collective action sentences have a very similar surface grammar. But this similarity is misleading, contend proponents of the paraphrase argument. This new schema brings out an overlooked fact about our language. It points to an important difference between how collective and individual action sentences work.<sup>8</sup> In a way, the new schema formalizes what we really mean with a

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<sup>8</sup>von Solodkoff (2014) distinguishes between pragmatic and semantic versions of the paraphrase strategy. The title of the paper by Ludwig (2007) suggests he is investigating a semantic phenomenon. However, many reductionists seem to argue for a pragmatic shift. When speakers utter collective action



collective action sentence. In contrast to the earlier schema SI, “(Each  $x$  of  $a$ )” has been added after “ $(\exists e)$ ” and occurrences of  $a$  have been replaced with  $x$ .<sup>9</sup> Introducing the restricted quantifier (Each  $x$  of  $a$ ) distinguishes the regimentation of individual and collective action sentences. This reflects that when we speak about a collective doing something, we actually speak about individuals doing something. The schema SC should be used to regiment collective action sentences 2 and 4 as follows.

**R(2).**  $(\exists e)$  (Each  $x$  of  $a$ ) [ $\text{agent}(x, e)$  &  $\text{building}(e)$  &  $\text{of}(p, e)$ ]

**R(4).**  $(\exists e)$  (Each  $x$  of  $a$ ) [ $\text{agent}(x, e)$  &  $\text{finding-guilty}(e)$  &  $\text{defendant}(p, e)$ ]

It will help to illustrate the proposal with some examples. Consider action sentence 2 and the regimentation  $R(2)$ . The collective action sentence “we build a boat” is regimented into a sentence about individual actions, which in English could be stated as: “each of us is an agent of the event that is a building of the boat.” An initial reaction to this way of regimenting collective action sentences might be that  $R(2)$  sounds wrong. Each of us only contributes his or her part to the construction. But  $R(2)$  seems to say that each of us builds the boat. This is not quite what  $R(2)$  says. Instead,  $R(2)$  says that each of us stands in the agent-event relation to the construction of the boat. What does it mean to stand in the agent-event relation to an action? It could mean that an agent just contributes to an action. It does not mean that an agent wholly performs the respective action.

The proposal is to paraphrase any sentence in which we as a group stand in the agent-event relation with a sentence in which each of us individually stands in this relation. Does this work? Presumably, as a group we stand in the agent-event relation to the construction of the boat. But the important question is: Does each of us individually stand in the agent-event relation to this event? This question cannot receive a conclusive answer without stating the necessary and sufficient conditions of the agent-event relation  $\text{agent}(x, e)$  in full. But we can get a long way by considering the two necessary conditions for the agent-event relation I put forward above, an intentional and a causal condition. Under these conditions, it may as well be true that each of us stands in the agent-event relation to the construction of the boat. First, it seems plausible that each of us intends to build a boat. The act of boat-building may be the means to different ends. For each of us there might be a different description under which he or she intends to build the boat. Some of us may intend to get out of the house, while others simply want to hone their carpentry skills. Second, it seems

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sentences, the proposition that they assert is not that of the sentence which they utter (of the form SI); they assert the proposition of a slightly different sentence (of the form SC).

<sup>9</sup>More precisely, the quantifier (Each  $x$  of  $a$ ) reads  $(\forall x : x \in X)$  where  $X$  extensionally refers to a set of individuals.

plausible that each of us sufficiently stands in a causal relation to the construction of the boat. Each of us contributes to the construction and if one slacks, then the part that would have been built will be left undone, or would have to be built by others. So it is plausible to assume that each of us meets the intentional and causal conditions necessary to stand in the agent-event relation to the action in question. Hence, the regimentation  $R(2)$  gives a minimally adequate paraphrase of what seemed to be a sentence about a collective action.

Consider as a further example the case of a democratic election. Some argue that it presents a counterexample against the paraphrase procedure. However, I argue that the paraphrase procedure can handle the case adequately.

5. “We elect Anne as the mayor.”

$R(5)$ .  $(\exists e)$  (Each  $x$  of  $a$ ) [agent( $x, e$ ) & electing( $e$ ) & of( $p, e$ )]

Some might argue that  $R(5)$  is not an adequate longhand of sentence 5 because it is not the case that each of us elects Anne as the mayor. Instead, only some of us vote for Anne. We can respond to this worry in two steps. First we clarify the event in question. Then we argue that each of us who votes meets the two necessary conditions to stand in the agent-event relation to this event. As with all regimentations using the schema SC, the action sentence is given the *collective reading*, meaning that there is one event of which each in the collective is an agent.

What is the event of which, according to  $R(5)$ , each of us is an agent? The election from which Anne emerges as a winner. Is it true that each of us is an agent of the election? Does each of us meet the two necessary conditions of the agent-event relation with respect to this event? Consider first the intentional condition. For each of us there is a description of the election under which he or she intends it. Some intend to elect Anne, while others intend her opponent to win. Yet others only intend to fulfill their civic duties and vote. These are different descriptions of the same event. It is important to remember that an agent can meet the intentional condition even if the result of an action is differently than what he or she intends. Even for those who intend Anne’s opponent to win, there is a description of the election under which they intend it. Let’s apply our intuitive test. Even if the supporters of Anne’s opponent learned about the low probability of their candidate to win, they still would cast their ballot. Each of us already knew that our individual vote is not going to make a difference to the outcome and we vote nevertheless. Thus, each of us meets the intentional condition.

Consider now the causal condition. Is it true that each of us stands in a causal relation to the election? Whether one stands in a causal relation to an event depends on the theory of causation and the set of necessary and sufficient conditions it stipulates.

In some theories of causation, none of us individually stands in a causal relation to the event (cf. Lewis, 1973). In such cases,  $R(5)$  would not be an adequate longhand of sentence 5. The sentence would be false because the conjunct agent( $x, e$ ) would be false. In other theories of causation, each of us stands in a causal relation to the event (cf. Chockler and Halpern, 2004). As such, the regimentation  $R(5)$  may be an adequate longhand in the sense that each of us meets the two necessary conditions of intention and causation. Even if these judgements might vary depending on the theory of causation, action sentences about democratic elections do not make a decisive case against this paraphrase procedure.

In summary, the regimentation schema SC defines a paraphrase procedure for simple collective action sentences. It produces longhand sentences that are minimally adequate. It provides a *linguistic reduction* of collective actions by giving an account of how sentences that seem to be about collective actions are in fact just sentences about individuals doing something. However, further assumptions are needed to get from the existence of a paraphrase procedure to metaphysical conclusions. Presumably, such an argument follows Quine (1960). But I share the observation of von Solodkoff (2014, 571) that “whilst it’s clear what role paraphrasing is supposed to play according to Quine, it is remarkably unclear how exactly this strategy works.” Let’s see if we can reconstruct how it works in the next section.

#### **4. Reduction argument**

The paraphrase argument aims to show that collective actions metaphysically reduce to individual actions. It needs to show how a paraphrase, i.e. a linguistic reduction, yields a metaphysical reduction. I reconstruct this argument with two assumptions. The first assumption is that there exists an adequate paraphrase procedure.

##### *Existence of a paraphrase procedure.*

There is a paraphrase for any collective action sentence. This paraphrase has the same truth-value as the corresponding collective action sentence.

The assumption is that there is a paraphrase procedure that is universal and meets the minimal adequacy constraint as defined above. Specifically for the paraphrase procedure we consider, the assumption is the following. It says that the reductive regimentation of any collective action sentence has the same truth-value as its non-reductive regimentation. Regimenting a collective action sentence using schema SI or SC should not make a difference to its truth-value. But this assumption on its own does not yet lead to a claim about metaphysical reduction. A further premise is needed to get from the existence of a universal and adequate paraphrase procedure

to a claim about metaphysical reduction. For a metaphysical reduction of collective actions to individual actions one needs something like the following assumption.

*Paraphrase implies identity.*

A collective action *just is* an individual action if and only if, given a true collective action sentence about this action, there is an adequate paraphrase of that action sentence into an individual action sentence.

This principle is the missing link between the existence of a paraphrase procedure and a metaphysical reduction. It says that the existence of a paraphrase shows that there is a metaphysical reduction.<sup>10</sup> Collective actions are just actions of individuals because there is an adequate paraphrase procedure, which unpacks shorthand sentences about collective actions into longhand sentences about individual actions. This assumption is reminiscent of Quine (1960, 241), who writes: “To paraphrase a sentence into the canonical notation of quantification is, first and foremost, to make its ontic content explicit.” With this additional assumption, the reductionist conclusion immediately follows. The existence of a paraphrase procedure can now tell us something about what collective actions are. Specifically, we learn that collective actions just are individual actions.<sup>11</sup> The two assumptions form a valid argument for the conclusion that collective actions metaphysically reduce to individual actions. Is the argument sound? In the next section I suggest that the first assumption is false. The paraphrase procedure is not universal and adequate.

## 5. Counterexamples

The reduction argument does not succeed, because the assumption that there is an adequate and universal paraphrase procedure is false. When reductionists make this assumption they simply stipulate that there is an adequate and universal paraphrase procedure. They have given us no reason for why, even if the procedure

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<sup>10</sup>The assumption is a specific instance of a more general principle. The assumption above is formulated for the specific domain of collective and individual actions. A more general principle is domain neutral. It can be used to derive instances for other domains of interest.

*Paraphrase implies identity (domain neutral).*

An entity of kind *X just is* an entity of kind *Y* if and only if, given a true sentence about a token kind *X*, there is an adequate paraphrase of that sentence in terms of tokens of kind *Y*.

<sup>11</sup>Eliminativists go a step further, arguing that only individual actions exist, not collective ones. To argue for an eliminative reduction you will need a slightly different assumption, such as the following.

*Paraphrase implies elimination.*

An action exists only if, given a true action sentence about this action, there is no adequate paraphrase of that action sentence in terms of another action.

might work for some collective action sentences, it would work for all collective action sentences. In this section I discuss three counterexamples to the reduction argument. I give examples of cases in which the paraphrase procedure gives inadequate results. It produces individual action sentences with a different truth-value from the corresponding collective action sentences. Hence, the paraphrase procedure is not adequate and universal.

Each counterexample takes a different line of attack. The first is based on a central result of judgment aggregation. In this case, the intentional condition is true for the collective but not for the individuals. The second is based on a counterexample against functionalism. In this case, the causal condition is true for the collective but not for the individuals. The third counterexample explores the possibility that intentionality might be primitive on the collective level. In this case, reducing actions, which presupposes intentionality, from collective actions to individual actions would be a non-starter.

Formally, we can trace the failure in each of these cases to a common source. In each of the examples, the collective meets the conditions to stand in the agent-event relation but each of the individuals does not. The truth of an action sentence crucially depends whether or not an agent stands in the agent-event relation to an event. Leaving the other conjuncts in a regimented action sentence aside, a reductive regimentation (using schema SC) is equivalent to a non-reductive regimentation (using schema SI) if and only if the expression  $\text{agent}(x, e)$  in a reductive regimentation has the same truth-value for every  $x$  in the domain of the (Each  $x$  of  $a$ ) quantifier as the expression  $\text{agent}(a, e)$  in the non-reductive regimentation. *The paraphrase procedure fails because it is not a theorem that (Each  $x$  of  $a$ )  $\text{agent}(x, e)$  is a semantic consequence of  $\text{agent}(a, e)$ .* Under some interpretations this consequence is false. There are different ways for this consequence to fail. The counterexamples illustrate three of those ways.

### 5.1. Discursive dilemma

Consider again action sentence 4 from above: “The judges find the defendant to be guilty.” I first employ the paraphrase procedure to reductively regiment this sentence as an instance of schema SC. Compare this with a non-reductive regimentation under schema SI, with the constant  $a$  for “the judges.”

$R_{SC}(4)$ .  $(\exists e)$  (Each  $x$  of  $a$ ) [ $\text{agent}(x, e)$  &  $\text{finding-guilty}(e)$  &  $\text{defendant}(p, e)$ ]

$R_{SI}(4)$ .  $(\exists e)$  [ $\text{agent}(a, e)$  &  $\text{finding-guilty}(e)$  &  $\text{defendant}(p, e)$ ]

For an adequate paraphrase, these two regimentations must be equivalent. However, there exist situations where the reductive regimentation (SC) is false while

Doxastic agent	valid contract	breach of contract	due process	guilty
Judge 1	✓	✓	✗	✗
Judge 2	✓	✗	✓	✗
Judge 3	✗	✓	✓	✗
Collective	✓	✓	✓	✓

Table 1: Profile of the judges opinions.

the non-reductive regimentation (SI) is true. Consider the example of a discursive dilemma (Kornhauser and Sager 1993; List and Pettit 2002, 2011; Nehring 2005). Three judges have to decide on a civil case. The question before them is whether or not a defendant is guilty of a breach of contract. Assume there are three premises underlying the guilty verdict that are individually necessary and jointly sufficient. Each judge individually finds the defendant guilty if and only if 1) there was a valid contract, 2) the defendant committed a breach of this contract, and 3) court papers were filed in accordance with all procedural requirements. The judges vote on each condition.

As Table 1 illustrates, an apparent contradiction arises. If the collective decision is reached on the basis of premises, that is, via simple majority on each of the three conditions, then the collective finds the defendant guilty. Two out of three judges find that there was a valid contract, a breach of contract, and a procedurally sound filing. The judges collectively find the defendant guilty because each of the three premises achieves a simple majority. In contrast, a collective decision that is reached on the basis of conclusions, that is, via simple majority only on the question whether the individual is guilty, would reach the opposite verdict. Each judge individually finds the defendant not guilty. Hence a simple majority of individual attitudes on the conclusion would yield a verdict of not guilty. Suppose the rules of the court prescribe that a collective decision is reached on the basis of premises. The judges collectively find the defendant guilty if and only if each of the three propositions finds a simple majority among them. Hence, while none of the judges individually finds the defendant guilty, collectively they find the defendant guilty because they infer their collective judgment from the majority result on the three conditions.

This illustrates a case in which the paraphrase is not adequate. Sentence 4 and its corresponding non-reductive regimentation of SC are true, because the judges collectively find the defendant guilty. Yet the reductive regimentation is false, because each judge individually does not find the defendant guilty. I establish these claims in

greater detail below. I begin with defending that the reductive regimentation  $R_{SC}(4)$  is false before arguing that the non-reductive regimentation  $R_{SI}(4)$  is true.

The paraphrase  $R_{SC}(4)$  says that each judge individually stands in the agent-event relation to the event of finding the defendant guilty. The sentence  $R_{SC}(4)$  is false because the judges individually do not meet the intentional condition, which is necessary to stand in the agent-event relation. Suppose each judge intends to bring about the outcome he or she deems right. Each of the judges wants to acquit the defendant because he or she finds the defendant not guilty. Consider the situation in detail. Suppose the judges vote on the premises in secret. Having voted on all three premises they count the ballots and immediately each judge regrets not having misrepresented his or her opinion. Voting in secret withheld crucial information from the judges. Had they known the votes cast by their colleagues, the judges would have misrepresented their true opinions about the premises in order to bring about the ruling they intend: to acquit the defendant. Had they known better, they would have rigged the vote to yield the result they intend (Dietrich and List, 2007). The judges fail the intuitive test for the intentional condition. Given information about the consequences of their action they would change their behavior. No individual judge intends to find the defendant guilty.<sup>12</sup>

Now consider the sentence  $R_{SI}(4)$ , which regiments sentence 4 as a statement about a collective action. This sentence says that the judges collectively stand in the agent-event relation to the event of finding the defendant guilty. This non-reductive regimentation stays very close to the original sentence in English. So it is reasonable to suppose that if the original sentence is true, then this non-reductive regimentation should be true as well. But let me in addition sketch an elimination argument for the conclusion that the judges collectively meet the necessary conditions for the agent-event relation. Assume that finding the defendant guilty is an action and therefore requires an agent. However, none of the judges individually meets the intentional condition and therefore no judge individually is an agent of finding the defendant guilty. By elimination, the judges collectively are an agent of finding the defendant guilty because there is no other individual that could be an agent of this action. Since the judges collectively are an agent of finding the defendant guilty, this implies that they collectively meet the intentional and the causal condition for being an agent of this action.

This is a case the paraphrase procedure cannot handle. The judges collectively meet the intentional and the causal condition. As a group they are an agent of finding

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<sup>12</sup>The claim that the individuals do not intend the event is compatible with the claim that actions of individuals constitute the collective action of finding the defendant guilty. Moreover, the literature acknowledges that in similar collective action situations, the resulting collective action is not intended by the individuals (Chant, 2007; Ludwig, 2014).

the defendant guilty. Individually, however, the judges fail to meet the intentional condition. Hence, the collective action sentence is true, while the paraphrase into an individual action sentence is false. This violates the minimal adequacy condition. Absent a better paraphrase procedure, there seems to be a collective action: the judges find the defendant to be guilty.

### 5.2. *China's avatar*

I now advance a second counterexample against the reduction argument. While in the first counterexample the collective but not the individuals meets the intentional condition, this is a counterexample in which the collective but not the individuals meets the causal condition for being an agent of the respective action. This case adapts the China-body system of Block (2006). I call it China's avatar.

Suppose the members of the Chinese nation are arranged so as to form a functional duplicate of a brain. For example, each member simulates a brain neuron and uses a radio transmitter that connects him or her with others. All individuals have instructions on what to do in response to the signals they receive. The members of the Chinese nation realize the structure and dynamics of a brain. Moreover, they control a humanoid body. This body has a remote control interface wired into its cranium instead of a brain. It is China's avatar. The avatar and the members of the Chinese nation together form the China-body system.

I make two assumptions about the China-body system. First, the China-body system is a collective. Like many collectives, it may act as if it were one individual but it really consists of many individuals. Second, the China-body system has intentions. The China-body system is a functional equivalent of a human individual, the two only differ in how these functions are realized. I take it for granted that this difference in realization does not make a difference concerning intentions.<sup>13</sup> Now suppose the China-body system intends to eat congee with pickled vegetables. In other words, it intends its avatar to move in such a way that its movements are an action of eating congee. Sure enough, just as any individual would act on this intention, so does the China-body system.<sup>14</sup>

## 6. "The China-body system eats congee with pickled vegetables."

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<sup>13</sup>Note that I do not assume that the China-body system is conscious. I set the issue of phenomenal consciousness aside.

<sup>14</sup>To avoid an exception to the assumption made earlier that all action sentences with singular subject terms are individual action sentences, it could be rephrased as "The members of the Chinese nation eat congee."



I contend that the paraphrase procedure fails for this sentence. The non-reductive regimentation of this sentence is true but the reductive one is false.<sup>15</sup> This time, the problem is the causal condition underlying the agent-event relation. While it might be the case that each member of the Chinese nation intends the avatar to eat congee, it is not the case that each of them stands in the right causal relation to the event of the China-body system eating the congee. Figuratively speaking, while it is true that the system as a whole eats congee, it is not true of its parts. There are at least three arguments for this conclusion. They are not mutually exclusive, but they are alternative ways of arriving at the conclusion that only the collective as a whole meets the causal condition for being an agent of an action. Readers might differ as to which argument they find persuasive, so I sketch each of the three. The first argument is that only the collective instantiates the relevant property that causes the congee to be eaten. The second argument is that the event of eating the congee is distinct from any individual action. The third argument is that intuitively, no individual member of the China-body system meets the causal condition for being an agent of eating congee.

The first argument draws an analogy to the ontological status of mental states. Some argue that the properties expressed by psychological theories are distinct from the properties expressed by neurological theories. The view is that, for example, the property of having an intention is not just a property of the brain. Instead, an intention is something that may cause behavior robustly, in the sense that different brain states can realize this intention. Analogously, it can be argued that the properties expressed by a social theory are distinct from the properties expressed by an individualist theory (Kincaid, 1986). A social system can have properties not possessed by any single individual. The analogy between the brain and a social group is plausible in this case because the Chinese nation forms a functional duplicate of a brain. So given this view, the China-body system as a whole may have the property that robustly causes the congee to be eaten while each individual does not have that property. This is one argument to suggest that the paraphrase of sentence 6 is inadequate because only the China-body system as a whole meets the causal condition for being an agent of eating congee.

The second argument for the conclusion that the two regimentations are not equivalent suggests that the collective's action of eating congee and the individuals' actions of operating their transmitters are distinct events. We can appeal to the individuation conditions of events to show that these events are distinct. According to a spatiotemporal individuation, they are distinct events because they do not occur at the

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<sup>15</sup>The two regimentations are

$R_{SC}(6)$ :  $(\exists e)$  (Each  $x$  of  $a$ ) [agent( $x, e$ ) & eating( $e$ ) & of( $p, e$ )];

$R_{SI}(6)$ :  $(\exists e)$  [agent( $a, e$ ) & eating( $e$ ) & of( $p, e$ )].

same locations and at the same time interval.<sup>16</sup> According to a causal individuation, eating the congee and responding to a signal are distinct because they adhere to different causal conditions. Any individual's responding to a signal is not necessary for the China-body system to eat congee. If some individuals do not operate their transmitter correctly, others will compensate for their failure and the congee will still be eaten. Therefore, the collective action is distinct from the individuals' actions because of their difference in causal properties.

The final argument is an argument from intuitions. It asserts that eating congee is an action only on the part of the China-body system, because intuitively, the individuals do not meet the causal condition for standing in the agent-event relation to eating congee. Collectively, the Chinese nation as a whole seems to cause the action. But the individual members of the Chinese nation do not seem to stand in a causal relation to eating the congee. The influence that each individual has on the occurrence of the action is vanishingly small. Intuitively, individual causal responsibility decreases with increasing group size (Lagnado et al, 2013). Hence, taking our intuitions about causation as a guide, no individual member of the China-body system stands in the agent-event relation to eating the congee. The paraphrase procedure fails to give an adequate paraphrase.

This second counterexample has similar ramifications as the first. The reduction argument is not sound because the paraphrase procedure is not adequate and universal. It might be argued that the failure of the reduction argument is only due to a deficient paraphrase procedure. But until we are shown an improved paraphrase procedure, we should not base our arguments only on hope. Rather, unless there is any reason to think that there is an improved paraphrase procedure, it seems that there is a collective action: the China-body system eats congee with pickled vegetables.

### *5.3. Hive minds*

Finally, we can question a tacit presumption of the previous cases to suggest yet another way in which the paraphrase procedure can fail to be adequate and universal. The presumption on which all previous cases operate is that collective actions involve individual actions. I contend that this is not necessarily true. Collective actions need not involve individual actions. There can be collective actions without individual actions. For the corresponding collective action sentences there is no paraphrase into individual action sentences. These collective actions are not grounded in individual actions, to which they could be reduced. How are such cases possible? Actions require an intention. If there is a collective that has intentions and that can act, but

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<sup>16</sup>I am not saying that the collective action and the individual actions are disjoint. Each individual action might be a strict spatiotemporal subset of the collective action.

which consists of individuals who lack intentions, then there are no individual actions to which the collective action could be reduced. A collective action that does not involve individual actions would be strange but not impossible.

To find collective actions that do not involve individual actions, we need to look outside the domain of human interactions. In human groups, collective intentions are derivative in the sense that a human group has intentions in virtue of its members primitive intentions. But we can imagine a reversal of this relationship. In other species, collective intentions may be primitive and individual intentions derivative, if even existent. Given that actions require intentions, in such cases there would be collective actions without individual actions. These are cases of *hive minds*.

In bees or ants the collective intentions seem to be primitive. An individual bee or ant is more akin to a simple robot without intentions. Nevertheless, collective intentions may arise from the interactions of these robots. A bee hive can be thought of “as a kind of exposed brain that hangs quietly from a tree branch” (Seeley, 2010, Ch.9). Similarly, Hofstadter (2000, 328) suggests that “ant colonies are no different from brains in many respects.” The analogy is that just as how in a brain intentions seem to emerge from the interactions of parts that lack intentions, intentions in a bee hive or an ant colony may emerge from the interactions of parts that lack intentions.

Consider the following example (Watkins, 1952, 188-89). When a bee hive is split and a part of the bee population is displaced from an existing hive, you will observe that the bees in the two resulting hives will change their behavior so that in each new hive the same proportion of bees occupies each role as in the original hive. For example if there are eggs that are about to hatch, one hive will start rearing a new queen to fill the vacant position. It seems that this reorganization is an intentional action. Hence there needs to be an agent of this action. But whose intention explains the behavior of the bees? It cannot be the intentions of individual bees because they are much like simple robots and lack intentions. Instead, it can be argued that a hive as a whole intends a certain internal organization. One can appeal to an instrumentalist theory of intentions and argue that ascribing to the bee hive that it intends a certain proportion of roles for its proper functioning will be useful to predict its behavior (Dennett, 1989). Alternatively, one can appeal to a functionalist theory of intentions and argue that the bee hive realizes states that play the role of having an intention. Either way, the bee hive could be considered a collective agent that performs a collective action, even though no individual intentional actions are involved in this collective action (cf. List and Pettit, 2006).

In the case of hive minds, the metaphysical reduction of collective actions of the hive to individual actions of its members fails because there are no primitive individual intentions to which the collective intention for an action could be reduced.

For a concrete action sentence, take the example of a bee hive choosing a new nest site.

7. “The bees decide to relocate to a new nest site at *L*.”

In the decision between different alternative new nesting sites, individual bees implement cognitive functions similar to the functions implemented by human cognitive systems (Seeley, 2010, Ch.9). Parallel to the earlier analogy between the China-body system and a brain, this suggests an analogy between a bee hive and a human cognitive system. One can defend a non-reductive position and contend that just as a human agent has intentions that are distinct from his or her brain states, the collective intention of the hive is distinct from the states of individual bees. This may sound similar to the counterexamples above, but the case of a hive mind shows something much stronger. What this counterexample suggests is that it is not possible to have a paraphrase procedure that is universal and adequate. Hive minds possibly exist, and in hive minds collective actions cannot be reduced to individual actions. Without individual intentions there cannot be an individual action. Any adequate paraphrase procedure will have at most a domain that is restricted to collective actions of non-hive minds.

Any paraphrase of sentence 7 into individual action sentences would be inadequate. The non-reductive regimentation of this sentence is true when a bee hive decides to relocate to a new nest site, but the reductive regimentation is false because no individual meets the intentional condition to stand in the agent-event relation. It is not the case that individual bees decide to relocate to a new nest site. Individually, the bees are not intentional systems. In contrast to the other counterexamples, a paraphrase in terms of individual actions is not available in principle.<sup>17</sup> If hive minds are possible, then a universal and adequate procedure paraphrasing collective action sentences into individual action sentences is impossible.

## 6. Conclusion

In this paper I have investigated whether collective actions metaphysically reduce to individual actions. In particular, I have examined how to make sense of the locution that sentences about collective actions are *merely a shorthand* for sentences about individual actions, and what would follow if this were so. I have constructed a reduction argument for the conclusion that collective actions just are individual

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<sup>17</sup>Conceivably, there are humanoid species that operate predominantly as a hive mind. For example, in the fictional universe of the Star Trek series there is an alien species called the Borg made up of cyborg individuals who are connected with a very high bandwidth constantly exchanging signals. They seem to form a hive mind. Indeed, when the hive functions properly, the members of the hive only speak in the first person plural and seem to have no concept of individuality (or using the first person singular).

actions. The argument consists of a paraphrase procedure and an assumption that links the linguistic reduction provided by this procedure to a metaphysical reduction. This has been the constructive contribution of the paper. My main conclusion poses a challenge to reductionists. I have argued that there is no adequate and universal paraphrase procedure. Unless such a paraphrase procedure is forthcoming, there seem to be collective actions over and above the actions of individuals.

My argument proceeded in three steps. First, I began by outlining desiderata for paraphrase procedures. I have focused on the requirement that a paraphrase must be adequate, that is, paraphrasing a sentence must not change its truth-value. Second, I have developed a paraphrase procedure for collective action sentences and constructed the reduction argument. It says that the existence of a paraphrase procedure for collective action sentences shows that collective actions reduce to individual actions. Finally, I have employed three different counterexamples to show that the reduction argument does not succeed. The counterexamples are cases in which the paraphrase procedure inadequately unpacks collective action sentences to individual action sentences. Consequently, it fails to support the reductionist conclusion that all collective actions just are individual actions.

This paper leads to two important suggestions. One is that the failure of the reduction argument provides evidence in favor of two kinds of collective actions. There are *joint actions*, for which the paraphrase procedure works; these are just actions of individuals. Then there are *corporate actions*, for which the paraphrase procedure fails; these are genuine actions of collectives (cf. Pettit and Schweikard, 2006). Second, the paper shows that the paraphrase project is far from complete. Despite widespread reference to collective action sentences being merely a shorthand, little work has been done to develop a procedure to prove this suspicion right. Since the best procedure fails to give adequate results, perhaps the paraphrase project needs to lower its ambitions and aim to give a constitutive analysis instead of a reductive analysis. Instead of showing that collective actions are just individual actions, it could give an account of how collective actions are constituted by actions of individuals. Until an improved paraphrase procedure is developed, the claim that collective action sentences are merely a shorthand still awaits vindication.

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