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Martin Weichold & Gerhard Thonhauser

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Collective Affordances

Martin Weichold^a and Gerhard Thonhauser^b

^aInstitute of Philosophy, University of Regensburg; ^bDepartment of Philosophy, TU Darmstadt

ABSTRACT

This article develops an ecological framework for understanding collective action. This is contrasted with approaches familiar from the collective intentionality debate, which treat individuals (with collective intentions) as fundamental units of collective action. Instead, we turn to social ecological psychology and dynamical systems theory and argue that they provide a promising framework for understanding collectives as the central unit in collective action. However, we submit that these approaches do not yet appreciate enough the relevance of social identities for collective action. To analyze this aspect, we build on key insights from social identity theory and synthesize it with embodied and ecological accounts of perception and action. This results in the proposal of two new types of affordances. For an individual who enacts her “embodied social identity” of being a member of a particular collective, there can be what we call *embodied social identity affordances*. Moreover, when several individuals dynamically interact with each other against the background of their embodied social identities, this might lead to the emergence of a *collective*, which we understand as a dynamically constituted and ecologically situated perception-action system consisting of several individuals enacting relevant embodied social identity affordances. Building on previous work in social ecological psychology, we suggest that there can be genuine *collective affordances*, that is, affordances whose subject is not an individual, but a collective.

Introduction

The aim of this article is to introduce, motivate and develop the conception of a *collective affordance* in order to provide a new analysis of collective action. Roughly, an affordance is a possibility for action provided by the fit between a perceiver and the environment (Gibson, 1979): A chair affords (amongst other things) sitting, a book reading, and a computer working. A collective affordance is an affordance that exists *for a collective*. For instance, a gap in a crowd might provide an affordance to run through *for a running team* – smaller gaps might provide affordances for individual runners, but not for the whole team. A romantic place might afford kissing *for a couple*. A strong but solitary burglar might provide an affordance to overpower him *for a group of four*.

In a nutshell, the conception we are going to propose is this. Since affordances are opportunities for action provided by the relation between a subject and its environment,

affordances are not only object-dependent but also subject-dependent (cf. Turvey, 1992; Turvey & Shaw, 1979).¹ A normal chair only provides an affordance for sitting for a human being with a normal height and a normal health but not for a mouse, a baby, or a bedridden person. Against this background, we can ask the question: Why should the subject-dependence of affordances be understood so that only *individuals* can be the subjects of affordances? We argue that it is more plausible to assume that affordances can also be conceived of as relations between the environment and *plural* subjects, or collectives. Thus, according to our proposal, there are genuine *collective affordances*, that is, affordances that depend *ontologically* on collectives. The lonesome burglar provides an affordance to overpower him for a sufficiently large group, but not for a solitary individual. Moreover, collective affordances are *phenomenologically* affordances for collectives. There is an immediate “feel” that the gap in the crowd is an affordance for *us* to run through.

To be clear, a *collective*, in our understanding, is a dynamically constituted and ecologically situated perception-action system that emerges whenever two or more appropriately subjectivized organisms dynamically interact with each other against the background of their relevant embodied social identities.² This definition combines the so-called dynamical systems approach (cf. Dale, Fusaroli, Duran, & Richardson, 2014; Vallacher, Read, & Nowak, 2002) with a key component of the so-called self-identification model of social groups (cf. Turner, 1982, 1987), namely the idea that individuals can come to perceive the environment from the perspective of a group. Following a dynamical and interactive perspective, we defend the view that collectives are emergent systems with top-down effects that cannot be explained by solely looking at the characteristics of the involved individuals. At the same time, the emergent behavior is fundamentally contingent upon the interacting individuals engaged in the collective, whose actions both shape and are shaped by the collective action.³ On the one hand, we take it to be natural to say that a collective can enact collective affordances. On the other hand, we hold at the same time that this is only possible because there are interacting individual members who have a history of being involved in relevant interactions which have shaped their interaction patterns (Dale et al., 2014). In more sociological terminology, one might say that they have undergone a long training process of participating in relevant emotional and bodily coordination (a process of *subjectivization*), so that the respective bodies are now social bodies that can play their roles in the collective (Brümmer, 2015; Michaeler, 2018). This theory of *subjectivization* assumes that being a subject (i.e., a responsible interaction partner with a social identity) is not a static attribute of certain organisms. Rather, organisms become subjects by being subjected to norms and role expectations, and thereby, they become constituted and recognized as

¹Ecological psychology emphasizes relationality, but it is important to note that relations have relata. One relatum of an organism-environment-relation is the subject, organism, animal, or agent, while the other relatum is the environment, world, or situation. Thus, when we say that an affordance is subject-dependent, we mean that it depends on the organism, animal, or agent.

²We roughly understand the term “embodied social identity” to refer to how a particular agent understands herself within her social environment at a particular moment in virtue of her past and on-going actions. For example, an agent leading a running group might at that moment enact her embodied social identity as a leader of that running group, while an agent on a football pitch might enact her embodied social identity of being the left defender of our team. We will below discuss the notion of embodied social identities in much more detail.

³We thank an anonymous reviewer for helping us clarify this point.

agents with a particular (embodied) social identity suitable to participate in certain interactions.

By contrast, we are in strong opposition to the view that all collective action boils down to the actions of rational individuals who always act on their intentions, even if they can sometimes decide to intertwine one another's intentions in order to perform a collective action. This is maybe the mainstream picture in the philosophical (and anthropological) debate on collective intentionality, but we fear that this picture relies on a problematic idea of intentional individuals, and rather neglects the importance of coordinated bodily evaluations of and reactions to the environment. Collective actions are not exclusively and not even necessarily guided by intentions; there are many other guiding factors, most crucially situational factors in the collective's environment.

We proceed in the following steps to unfold this rough sketch into a clearer conception. In the section "Puzzling phenomena of collectives in action", we introduce two further examples of the ubiquitous phenomena of collective action that we take to be in need of an explanation. Then, in the section "The collective intentionality approach to collective action", we briefly discuss the collective intentionality approach to collective action and explain why we take it to display cognitivist, internalist, and individualistic biases. In the section "Radical embodied social psychology", we turn to a radically different approach to collective action, namely to social ecological psychology. We show that in comparison to the collective intentionality approach, social ecological psychology provides the better framework for analyzing our examples. However, as we point out in the section "Limits and lacunas of RESP", there are some lacunas in the way social ecological psychology addresses collective action. In the section "Embodied social identities and embodied social identity affordances", we suggest augmenting social ecological psychology with the notion of embodied social identity and introduce the new conception of *embodied social identity affordances*. Based on these conceptual resources, we further develop the conception of *collective affordances* in the section "Towards a conception of collective affordances". We discuss advantages of the proposed conception of collective affordances in comparison to the conceptual resources already available within social ecological psychology in the section "Advantages of the proposed conception of collective affordances". Finally, the section "Advantages of the proposed conception of collective affordances" provides a short inquiry into how the conception of collective affordances can be helpful for future research on collective action.

Puzzling phenomena of collectives in action

To get a first grip of the phenomena that most strongly necessitate the conception of collective affordance, consider the example of a back four in football. The players in the back line synchronously shift from one side of the pitch to the other, move forward or fall backwards, and sometimes play an offside trap. Their movement depends on their roles on the team, their location on the pitch, the location and movement of their teammates and opponents, the location of the ball and who is in possession of it, field conditions, talents and tendencies of individual players, and many other factors. Moreover, the composition of the team and its tactics influence the navigation on the pitch. For slower defenders it might be advisable to play further back in order to prevent runs

behind the defense, while a fast defender can afford playing higher up to confine the space between the lines. But sometimes, the coach instructs slow defenders to play a high line and fast defenders to sit back. Whatever their tactical approach, the aim of the defense is to evaluate each situation in the same way and to move *as a unit*. For, any uncoordinated movement would create gaps that the opposing team can exploit. The back four can only achieve its goal – stopping opposing attacks – if each player fulfills her task within the tactical framework of the team and in the context of ongoing coordination with her teammates.

Or, to consider another example, let us come back to the running team. When running on one's own, a narrow and winding forest trail shows itself to be a suitable path, at least for a sure-footed runner with adequate shoes. However, if you are jogging with your running team, such a trail could turn out to be too demanding to allow for smooth running. Or consider when the team approaches a traffic light about to turn red. There might be enough time left for the runners in the first row to cross the street, but not for the entire team. If they are attentive and do not want to split the team, the runners in the front will stop and wait for the subsequent green light to enable the entire team to cross the street together. Thus, the situations that are suitable for and the conditions that apply to running on one's own are quite different from the contexts of running as a team.

These are examples of the phenomena of situated collective actions which we want to explain. There is a whole collective acting, and the members of the collective act against the background of their ongoing training as team members and their specific roles within the team. Importantly, our examples are representative of daily life. Often, people act as collectives in the mentioned way – and basically whenever this happens, the collective's actions are guided by the environment. Collectives follow paths, avoid obstacles, react to rules and instructions, and are responsive to opportunities and threats to the collective.

The collective intentionality approach to collective action

How can collective actions such as the ones we just described be analyzed? The first place in the literature one might turn to when thinking about collective action is the debate about collective intentionality (Bratman, 1992; Gilbert, 1990; Searle, 1990; Tomasello & Rakoczy, 2003; Tuomela & Miller, 1988). The main premise of that debate is that the distinction between individual action and collective action is to be found in the participants' *intentions*. Assuming that actions can at bottom only be carried out by intentional individuals, participants in this debate agree that the defining feature of collective action is that the involved individuals have collective intentions. The central aim in this debate is to explain what precisely is collective about a collective intention. Some claim that the collectivity is located in collective *content* of collective intentions (I intend that *we* ...), while others locate collectivity in the *mode* of intentionality (I *we*-intend that *we* ...), and still others locate it in the *subject* (*We* intend to ...) of collective intentionality (cf. Schweikard & Schmid, 2013).

It is not the purpose of this article to criticize the collective intentionality framework in detail. Instead, we wish to constructively develop an augmented version of ecological

social psychology, as we take this to be the more promising approach to collective action. However, we want to at least briefly motivate why we take it to be necessary to move beyond the collective intentionality debate and towards social ecological psychology. In our assessment, there are important problems inherent to the way in which the debate about collective intentionality is set-up. In particular, we consider the collective intentionality approach to collective action to be overly cognitivist, internalist, and individualistic.

First, the current debate about collective intentionality started at the end of the 1980s – and we fear that it still entails the theory of cognition that was dominant at that time, namely cognitivism. By now, however, cognitivism is seriously and prominently challenged, not only by work in ecological psychology but also, for example, in embodied, embedded and enactive cognitive science (Haugeland, 1998; Hutto & Myin, 2013, 2017; Thompson, 2007; Varela, Thompson, & Rosch, 1991). Psychological research has revealed that much human behavior often proceeds “automatically” and is not necessarily guided by conscious intentions (Bargh & Chartrand, 1999; Kahneman, 2011; Di Nucci, 2013; Dreyfus, 2005; Rietveld, 2008; Romdenh-Romluc, 2013). Against this background, it seems adequate to worry that the traditional work on collective intentionality, with its emphasis on intentions, is overly *cognitivist* (cf. Tollefsen & Dale, 2012).

Second, the classical work on collective intentionality is overly *internalist*, by which we mean the idea that only inner factors (such as beliefs, desires, and intentions) but not external factors (such as the present and past physical and social environment) directly contribute to an individual’s course of action. Aspects of the environment (such as gaps, signs, or opportunities and threats one has to respond to) play no direct role in traditional accounts of collective action. Again, ecological psychology is not alone in challenging this picture. For instance, situationist social psychology has also found that human behavior is tremendously influenced by (and very well explained with reference to) factors of the situation within which an action takes place (Doris, 2002; Mischel, 1968; Ross & Nisbett, 1991).

Finally, despite the conviction of participants in the debate to advance anti-individualistic and anti-reductionist accounts of collective action (Gilbert, 1990), we still consider classical work on collective intentionality to be overly *individualistic*. At root, it assumes, only individuals act, based on their intentions. By contrast, dynamical system approaches in cognitive science and ecological psychology suggest that collectives can be genuine agents of their own (Marsh, Johnston, Richardson, & Schmidt, 2009; Vallacher et al., 2002). Although the dynamical perspective we defend in this paper maintains that collectives emerge from dynamically interacting socialized human bodies, it is inadequate to reduce collective agents to an aggregate of individuals acting on their intentions (even if these intentions have collectivity in their content or mode).

Radical embodied social psychology

In light of these difficulties with the collective intentionality approach, we suggest turning to a fundamentally different framework for explaining collective action, namely to so-called social ecological psychology, that is, to ecological psychology’s treatment of sociality. In this article, our aim is to restate, expand and slightly modify the approach suggested by Marsh et al. (2009). In line with the title of their paper, “Toward a

radically embodied, embedded, social psychology”, we suggest calling this approach “Radical Embodied Social Psychology” (or, “RESP”, for short). To anticipate our conclusion: In contradistinction to the collective intentionality framework, RESP is on the right track for explaining collective action. However, there are some lacunas in RESP, which we aim to address in this paper.

RESP can be characterized by two principles, which are fundamental to ecological psychology as a whole (Marsh et al., 2009, p. 1218):

Two basic principles of this approach are (1) that it is in the relation of the organisms to its environment that meaning and causality lies, and (2) that emergence of ordered behavior (new states of being, e.g., social units out of autonomous agents) comes about via self-organizing and dynamical principles.

It is important to appreciate that RESP is fundamentally different from the collective intentionality framework discussed above. The collective intentionality framework denies both basic principles of ecological psychology on which RESP is built. It denies principle (1) by suggesting that not relations, but autonomous individuals are the crucial units of collective action; within the collective intentionality framework, individuals and only individuals are taken to possess causal agential powers. Moreover, the collective intentionality framework also denies principle (2) by suggesting that dynamical interactions are not essential; instead, ordered behavior such as collective action is taken to come about by an appropriate intertwining of individual intentions.

While proponents of the collective intentionality framework do not care about analyzing the environment an individual or a collective is embedded in, ecological psychology analyzes the environment in terms of affordances, that is, in terms of possibilities for action that exist for animals that have the action capabilities for making use of the possibilities (cf. Marsh & Maegher, 2016; Michaels & Carello, 1981; Turvey, 1992). Importantly, even though RESP denies that actions can be brought about by autonomous individuals in virtue of agent causation, RESP does not understand action in a mechanistic way: “[A]ctions are not caused by the environment or elicited by stimuli, but are the animals’ means to utilize the affordances in their environment” (Withagen, Poel, Araújo, & Pepping, 2012, p. 252). Thus, ecological psychology’s conception of individual organisms and their agency is radically different from the one presupposed in the collective intentionality framework.

When it comes to using the concept of affordances for research of the social domain, there are already a number of proposals. For instance, Valenti and Gold (1991) talk about “social affordances”: While they do not define the concept, they seem to have in mind any affordance which invites social behavior. More recently, Alan Costall (2012) has coined the term “canonical affordance”: Canonical affordances are affordances of artifacts and have a conventional and normative meaning. For instance, chairs are made for sitting-on, even though they can also be used in other ways (Costall, 2012, p. 85). Most relevant for the context of this paper, Knoblich, Butterfill, and Sebanz (2011) discuss the concepts of common affordances and joint affordances: Common affordances exist when two agents perceive one object and react at the same time to the affordances it provides, so that emergent coordination might occur. An example is the arrival of a bus awaited by many passengers (Knoblich et al., 2011). By contrast, a joint or shared affordance is, according to Knoblich and colleagues (Knoblich et al., 2011, p. 63),

an affordance for two or more people collectively which is not necessarily an affordance for any of them individually. For example, a long two-handled saw affords cutting for two people acting together but not for either of them acting individually.

Joint affordances go beyond the focus on a single organism insofar as they require more than one individual to be realized. However, as we will show in detail later, joint affordances are different from collective affordances insofar as they do not imply agency beyond individuals. In other words, whereas the realization of joint affordances depends upon more than one individual, it does not depend upon an agential system beyond individual organisms.

To our mind, these notions of social, canonical, common and joint affordances are helpful conceptual tools for extending ecological psychology's approach to the social domain. Yet we fear that these concepts are often neither clearly defined nor sharply distinguished from each other. Moreover, we fear that the approach, developed thus far, is still overly individualistic. After all, it is still an individual who happens to be surrounded by others who take the same bus, or an individual who needs another person as a means to help her handle a two-handled saw. To be sure, the mentioned concepts might yield the right descriptions of the phenomena in question, e.g., of entering a bus. However, the phenomena we are interested in are phenomena where it is natural to say that there is a whole collective in action, that is, where a collective as a whole is the agent of an environmentally embedded action. The conceptions of social, canonical, common or joint affordances do not account for that.

Fortunately, ecological psychologists have already picked up on the issue and extended the ecological psychological approach to collective behavior (Marsh et al., 2009). Central to this extension is the idea of an interpersonal *synergy* (Bernstein, 1967), a concept from research on dynamical systems that has been fruitfully integrated into ecological psychology (Riley, Richardson, Shockley, & Ramenzoni, 2011; Vallacher et al., 2002). According to Riley et al. (2011, p. 1), synergies are "higher-order control systems formed by coupling movement system degrees of freedom of two (or more) actors". Instead of there being a central controller of an action, the actions of a synergy emerge when several components of a system are not merely working individually but are *coupled together*. A synergy is thus not the result of a coordination of individuals' wills, but rather the result of dynamical self-organization (Dale et al., 2014). The particular components are in constant interaction and correct for each other's errors (Dale et al., 2014; cf. Bernstein, 1967). A synergy is composed of many different individual parts, but the fact that these parts are dynamically coupled has the consequence that the behavior of the synergy cannot be reduced to the behavior of its individual components (Marsh, Richardson, Baron, & Schmidt, 2006, p. 19). Relatedly, Araújo and colleagues characterize a synergy as follows (Araújo, Ramos, & Lopes, 2016, p. 167):

A synergy is a task-specific organization of elements such that the degrees of freedom of each component are coupled, enabling the degrees of freedom to regulate each other (Bernstein, 1967, Gelfand & Tsetlin, 1966/1971). Latash (2008) identifies the characteristics that should be met for a group of components to be considered a synergy: sharing, error compensation and task-dependence.

For example, a football team can be a synergy according to the characterization just offered. The elements of the team, the individual players, are coupled to each

other. They adapt their individual movements to what their teammates do. Moreover, the players share the labor by having different tasks on the team, they try to compensate for errors made by teammates, and they work towards the task of winning the game. And importantly, the players do not do these things merely based on their (conscious) intentions, but in virtue of their trained embodied action tendencies.

Most importantly, the subject of a collective action is truly the synergy, that is, the emerging perception-action system that is distributed across several individuals (Richardson, Marsh, & Schmidt, 2010). An important consequence is that the emergence of a synergy leads to the fact that there are now affordances for the synergy as a whole. There can be new affordances that do not exist for individuals, but only for the synergy (Marsh et al., 2006). Insofar as these affordances exist only for a synergy as a new perception-action system, they are fundamentally different from social, canonical, common, or even joint affordances, which ontologically depend on individual subjects only.

It is worth mentioning that there are several empirical findings that support RESP's account of collective action. For instance, Richardson, Marsh, and Baron (2007) conducted a series of experiments to investigate intrapersonal and interpersonal grasping affordances. Participants were required to move short and long planks of wood, where the short planks could be moved alone, while the long planks required cooperation of two participants. It was found that the switching from solo to collective action and back when new planks were to be moved depended on aspects of the environment, e.g., on the length of the respective new plank to be moved, and also on the arm span of the potential collaboration partner (Richardson, Marsh, & Baron, 2007). Moreover, whether or not two participations cooperated on moving a plank depended also on whether they were moving the previous plank together ("hysteresis", cf. Richardson, Marsh, & Baron, 2007, p. 846).

Another set of findings suggests that organisms tend to synchronize their behavior automatically, whether they want it or not. Tehran Davis (2016, p. 53) summarizes the main finding as follows: "people unintentionally and sometimes uncontrollably entrain their behaviors with one another." This is important, according to Davis (2016, p. 60), for the following reason: "While our everyday experience of social interactions is dominated by the intentional coordination of goals, actions and ideas, beneath the surface we are constantly, automatically and unintentionally coupling ourselves to our social others." While the collective intentionality framework focusses on collective intentions, these empirical findings suggest that humans dynamically couple their behavior constantly, sometimes even without noticing it. This can be interpreted as suggesting that humans are at root not the autonomous individuals which the collective intentionality framework takes them to be, but rather social organisms that are always already open to forming dynamical couplings with others.

Limits and lacunas of RESP

However, the passage from Davis quoted in the last paragraph of the previous section might also be taken to indicate that social ecological psychology has a limited reach.

One might think that RESP can only explain spontaneous, unplanned collective behavior, whereas higher-level, intentional collective action still needs to be explained in terms of cognitivist approaches such as the collective intentionality framework. Indeed, both proponents and opponents of RESP tend to assume this. For instance, Marsh et al. (2009, p. 1222) seem to limit the reach of their proposal in such a way by admitting: “Some marriages are arranged, and some study groups are intentionally formed to work on a problem.” Similarly, Sebanz and Knoblich (2009, p. 1231) criticize RESP for not minding “the gap” between spontaneous couplings and truly collective actions:

We think that [RESP] is problematic for several reasons. Firstly, adhering to the ecological framework bears the danger of restricting one’s investigation to phenomena that can be explained within this framework. For instance, ecological psychologists have successfully described how people spontaneously synchronize their movements (e.g. Richardson, Marsh, Isenhower, Goodman, & Schmidt, 2007), but they have difficulties explaining many other phenomena such as complementary actions performed to achieve a common goal, joint attention, or thinking about others (Knoblich & Sebanz, 2008). Secondly, as soon as one merges an ecological approach with the constructs of social psychology, one risks being theoretically inconsistent. Concepts such as stereotypes, motivations, intentions, or emotions seem hard to reconcile with the credo of ecological psychology that postulating internal states has to be avoided at all costs.

To our mind, the best way for RESP to respond to this objection is the following. RESP should start from the assumption that there is a basic level of sociality that consists in spontaneous synchronies and couplings, a level which is widespread among human and non-human animals and which can be analyzed well by RESP. Yet, RESP should also acknowledge that there is a higher level of sociality, a level which we aim to address with the conception of collective affordance. Researchers working with the concept of synergy are usually agnostic regarding the material make up of its components, as they aim at finding general principles of coordinated behavior. While we are in general agreement with RESP, we nevertheless submit that there is a special type of synergy, namely those synergies in which the embodied social identities of the involved individuals play a decisive role. We consider it an open empirical question whether only humans have social identities and, thus, can be components of collectives, or whether social identities can also be found in other animals. For example, one might wonder whether an elephant herd, an ant colony, or a flock of birds could constitute a collective. We also consider it possible that in the future, machines with artificial intelligence might evolve to have social identities. However that may be, we suggest calling that type of synergy in which social identities play a constitutive role *collective*. Building on this idea, we consider it a mistake to assume that one has to leave behind RESP in order to account for higher-level cases of collective action. Instead, we suggest connecting social ecological psychology with resources from social identity theory. Thus, we will propose a conception of embodied social identity that is compatible with RESP and show how this extension of RESP motivates introducing the concept of a collective as a special type of synergy. In this way, RESP can meet Sebanz and Knoblich’s objection.

Thus, in contrast to Sebanz and Knoblich (2009) criticism, we submit that RESP is a suitable approach to collective behavior, also in the case of higher-level collective action. RESP removes the cognitivism that has hindered further advancements within the collective intentionality framework, and also removes the problematic internalism, instead

emphasizing the importance of the subject-environment relation. Moreover, by emphasizing the importance of self-organization and dynamical synergies, RESP offers the potential to move us beyond the problematic traces of individualism which have haunted the collective intentionality debate. However, there are, in our opinion, still some lacunas in RESP. This is why we see need for augmenting RESP.

To begin with, many proposals from RESP are, as already mentioned, still too individualistic to account for the paradigmatic cases of collective agency we are interested in. Social, canonical, common, and even joint affordances are all affordances for individuals. In most studied cases, the respective individuals just use others as mere means to extend their capabilities for action, as in the case when another person is needed to handle a two-handled saw (at least in one interpretation of the example, see below). Even the studies on grasping planks can be interpreted in this way – the cooperation partner can be seen as merely a means to extend one’s capabilities for moving long planks. Yet this cannot account for the fact that collectives might be agents of their own.

Work on synergies has already taken us a long way towards an ecological understanding of collectives as agents of their own (cf. Marsh et al., 2006; Marsh et al., 2009). For instance, Marsh et al. (2006,) suggest that “[e]ach individual brings to a situation certain effectivities (action capabilities), and thus when one moves from solo action to having another person present, there are new possibilities for action that can be realized—affordances at the level of the new synergy” (pp. 24f.). In this quote, the authors allude to the idea that having new opportunities for action is an emergent property of the synergy, rather than resulting merely from the sum of the action capabilities of the involved individuals. However, no one (to our knowledge) has yet developed a detailed analysis of the relation between individual action capabilities and collective action capabilities. The current state of the field remains unclear about what it exactly means that there are affordances for synergies. Does a synergy experience the presence of affordances? How are affordances of a synergy related to the affordances perceived by an individual who is part of the synergy?

A related problem with RESP is that there are some crucial aspects of collective action which RESP is (so far) ignorant about. Consider, for example, the case of a football team. Of course, basic principles of multi-agent coordination play a crucial role within the team, as RESP would predict (Davis, 2016). But it is equally essential for a football team, and for teams in general, that team members adopt social identities allowing them to play their role on the team. For each player, her role on the team, and her embodied social identity which constitute her ability to realize embodied social identity affordances (see next section) will be of crucial importance for what she will do on the pitch. If she has the role of playing at the left side of the back four, she can and will do different things compared to the situation when she is playing the role of the goalkeeper. How well she plays her role depends on how much she embodies that role, on how much the role has become her “second skin” due to a history of training. We submit that this is a crucial aspect of collective action in (at least) human animals, but RESP is largely silent about it. Embodied social identities and the affordances they allow to realize might also be of relevance for RESP’s paradigmatic cases such as moving planks together. For, the situation in the experiments can be analyzed as a “behavior

setting” (Barker, 1968) which is set up by the instructions of the experimenters; the involved students play the roles of participants who are invited to cooperate with each other when it is required by the length of a plank. If this is right, social identities are crucial even for the plank grasping experiment.

In sum, RESP is much better equipped to account for the sociality of action than the collective intentionality framework. However, there are still open questions. This is why we suggest working towards slightly restating and extending RESP. In particular, we propose enriching RESP with insights from research on social identity in order to develop an approach that is well-suited to explain not only sociality in general, but in particular the crucial phenomena of higher-level collective action we are interested in.

Embodied social identities and embodied social identity affordances

In the previous section, we already made use of a distinction between different phenomena of collective action. To begin with, there might be spontaneous, unintentional couplings of two organisms acting in synchrony. There might also be mildly coordinated actions that are structured by social role play – for instance, when a person in the role of a customer buys a pretzel from a person in the role of a salesman. Yet there are also the widespread phenomena we are primarily interested in in this article: actions that are performed by a collective as a whole, where the members of the collective experience their environment from the perspective of the collective. In what follows, we are *only interested in those synergies that are collectives*. In such cases, we want to argue, the participating individuals act against the background of their *embodied social identities* and enact *embodied social identity affordances*. We will develop these conceptions in turn.

But before we can develop our conception of embodied social identity affordances, we first need to shortly turn to the general nature of affordances. As is well-known to ecological psychologists, an affordance is an opportunity for action provided by the environment. Gibson (1979) claimed that affordances are *objective* features of the environment and do not depend on a subject’s expectations or interests. At the same time, Gibson understands affordances as relational. For instance, he writes (Gibson, 1979, p. 129):

An affordance cuts across the dichotomy of subjective-objective and helps us to understand its inadequacy. It is equally a fact of the environment and a fact of behavior. It is both physical and psychical, yet neither. An affordance points both ways, to the environment and to the observer.

Consequently, affordances do in some way depend on a subject, or an observer or agent. How can both points be reconciled – that an affordance exists objectively and that it is related to a subject? Of course, it is controversial how affordances should be analyzed in detail (cf. Chemero, 2009). However, what is relatively uncontroversial is this: Crucial for a Gibsonian account is the *relation* between the environment and a subject. Relations have *relata*. Against this background, we propose using the word “affordance” for referring to the environmental *relatum* of such an environment-subject relation. Then, an affordance exists only in relation to one particular subject – as a *relatum* in a subject-environment relation. However, if such a subject is given, the affordances exist in virtue of objective properties of the environment, whether or not the subject

cares about the affordances or not. For example, if a particular subject is able to ride bikes, an unlocked bike provides the affordance for her to ride it. The affordance exists in virtue of the objective presence of the bike and the ability of the subject to ride it, and it does not depend on whether or not the subject cares about making use of her ability right now. Still, if the subject lost the ability to ride the bike, e.g., as the result of a serious injury, the bike would not provide the affordance for her any more. All this is not news to ecological psychologists, but there are two points which follow from these considerations and which indeed *are* of high relevance to our conception of collective affordances.

The *first* point is this: As we discussed above, affordances should be seen as depending on subjects (cf. Turvey, 1992; Turvey & Shaw, 1979). One might assume that the subject of an affordance-subject-relation is always an individual organism. Yet we propose that such a subject can also be a collective. This possibility naturally follows from our suggested conceptualization of affordances. The *second* point concerns the question how the subjective relatum of an affordance-subject-relation is analyzed, even in the case where the subject is an *individual* subject. Marsh et al. (2006, pp. 24f.) suggest that “[e]ach individual brings to a situation certain effectivities (action capabilities)”, thus characterizing the relevant subjective features in terms of Michael Turvey’s notion of “effectivities” (Turvey & Shaw, 1979). Effectivities are often understood as biological action capabilities, that is, as abilities of an organism to interact with its environment, such that the organism has the respective abilities in virtue of her biological make-up, e.g., in virtue of her body size or her bodily strength. We agree with this, but we wish to highlight that there are also other subjective factors apart from biological action capabilities which contribute to shaping which objective features are affordances for a given subject. Other subjective factors are social identities, social roles and corresponding *social* action capabilities. For example, if a certain subject has adopted the role of being the moderator of a discussion, and if relevant others accept her in that role, she has new social action capabilities, which provide her with new affordances. For instance, a raised hand can provide her with the affordance to select the person who raised her hand as the next speaker. Insofar as the concept “effectivity” is sometimes confined to properties of a biological organism, we take it to ignore important elements shaping the action capabilities of (at least) human animals. We have extensively discussed this alternative conception of affordances and effectivities elsewhere (Weichold, 2015: ch. 3; Weichold, 2018). What is important for the purpose of this article is only that the existence of affordances can also depend on factors such as social identities and the corresponding social action capabilities.

In order to explore these factors, we suggest opening RESP for the main findings of social identity theory (cf. Turner, 1982, 1987). Although social identity theory was explicitly introduced as a cognitivist theory of the social group, we suggest that it can be transferred into the framework of ecological psychology. In fact, we think that the notion of social identity can benefit from a reframing in terms of an embodied interaction with the environment. According to traditional social identity theory, an individual’s social identity solely depends on her self-identification with a certain social category (e.g., college student, female, white, European, fan of FC St. Pauli). When a self-categorization becomes salient for an individual, this evokes a particular social

identity. Social identity is here understood in contrast to personal identity. While personal identity pertains to the unique abilities, physical attributes, personality traits etc. of a person, her social identity is based on her perceived belonging to a specific social category (cf. Smith, 1993; Turner, 1982).

Experiments have shown that individuals regularly come to evaluate situations from the perspective of a specific social identity (cf., Mackie & Smith, 2017; Smith, Seger, & Mackie, 2007). If a social identity (e.g., as a student, or as a fan of a football team) is made salient, an individual does not evaluate a situation from her own perspective, but from the perspective of the relevant group. In such cases, individuals react to events that positively or negatively affect the group, even if the events do not affect them personally. We suggest adopting that idea for a dynamical approach to collectives. Under conditions to be specified in what follows, individuals can perceive their environment from the perspective of a relevant collective and, if and when in appropriate interaction with other members of the collective, enact affordances that depend on that collective.

Even though social identity theory's notion of social identity is so important for understanding collective action, we suspect that the experimental settings of cognitivist branches of social psychology (with experiments mostly conducted via questionnaires) aggravate the tendency to overlook the importance of the environment for the formation of social identities. We suggest that, at least in regular cases, the formation of a social identity requires that an individual performs *actions* relevant to that social identity. In such cases, when an individual regularly acts on the basis of her social identity, we want to speak of an *embodied social identity*. For example, if an individual has the embodied social identity of being the leader of a local running group, this means that she will regularly run with that group and take a leading role during those runs. In that case, she will regularly participate in interactions in which she is treated as having that social identity, which in turn contributes to her ongoing *subjectivization* as the leader of the running group, and to the *habitualization* of relevant behavior. In contrast to traditional social identity theory, we thus claim that self-identification ("I am a player of Real Madrid") is neither necessary nor sufficient for developing an embodied social identity. Instead, adopting and sustaining an embodied social identity requires participation in relevant perception-action loops. To take another example: If we woke up one morning and started identifying ourselves as players of Real Madrid, we would receive lots of negative feedback from the environment once we would attempt to act on the basis of that imagined social identity. For instance, when attempting to enter the field in Estadio Santiago Bernabéu together with the team, this would almost certainly lead to interactions that are rather unpleasant for us, as stewards would drag us off the field. In contrast, an actual member of the team is in appropriate interactions with her teammates and many other people in which her social identity as a team member is continuously acknowledged and stabilized. This points to the formation and persistence of embodied social identities being dependent upon participation in a sufficient number of actual interactions in which an individual is treated as having that social identity. Although most of our examples are from the domain of sports, where the element of physical interaction is rather obvious, we claim that all embodied social identities require enactment, by which we mean that individuals conduct associated actions in relevant interactions. For instance, the social identity of being a chess player is enacted

by playing chess, or the social identity of being a member of a debate team is enacted by engaging in debates.

Now, crucially for our proposal, an embodied social identity opens up new affordances, which we call *embodied social identity affordances*. For instance, for a subject who has the embodied social identity of being a fan of FC St. Pauli, collectively observing a game – whether in person at the stadium or remotely by television – affords that subject to join “us” – the fans – in cheering. The affordance is based on objective factors, like the on-going cheering of other fans, but also on a subjective factor, namely the embodied social identity which enables the subject to become part of “the we”. Likewise, if a subject has the embodied social identity of being a member of a running group, this comes with new social action capabilities for her, which leads to the environment providing new affordances to her. She can immerse herself into the group and adopt “our” running style, or she can become the leader of the running group, running in a way that is most suitable for us. In all these cases, an individual experiences her environment in terms of what is relevant for the collective which she is a part of; and she does so qua her embodied social identity and relevant ongoing interactions with other members. Perceiving the environment based on their respective embodied social identities means that subjects perceive the environment from the perspective of what is relevant for the team, without any need for representations or imaginations. Once their respective embodied social identities are activated, they become sensitive to affordances which they have not been sensitive to before, namely embodied social identity affordances (cf. Ye, Cardwell, & Mark, 2009 for an analysis of recognizing so far un-recognized affordances in familiar objects). These affordances are constituted not by what is relevant for the individual organism, but by what is relevant for the collective.

Thus, embodied social identity affordances are affordances for individuals, as they are co-constituted by embodied social identities, which are part of the social action capabilities of individuals. However, embodied social identity affordances are social in at least three regards. First, they are affordances for what is relevant for the collective. Embodied social identity affordances allow an individual to see what the environment affords her to do on behalf of her team. Of course, a particular subject might see different affordances at the same time. In some cases, those affordances might be in a harmonious relation, like when a ball provides the affordance to shoot it on goal, which is in the interest of both the individual player and the team. In other cases, a conflict between different affordances might arise; for instance, a conflict between an egoistic affordance for acting merely in the service of self-interests, and an embodied social identity affordance for acting in service of the team. A striker might be torn between the affordance of shooting the ball directly at the goal and receiving fame if successful, and the affordance of passing the ball to her much better positioned teammate, which would be better for the team.

Second, embodied social identity affordances are social because they are usually connected to the implicit and embodied recognition by others. For instance, a subject might feel to be the leader of a running group and react to only those affordances on the way that invite a smooth running experience for the group. However, if no one accepts the respective subject as the leader of the running group, no one will follow. A football player might see that it is best for the team if she plays a long pass forward, but the

targeted player might misperceive what is happening. We propose to say that in these cases there are still embodied social identity affordances, even though the actions go wrong.

Third, embodied social identity affordances are social because the respective embodied social identities are the products of a history of social interactions. The ability to participate in the relevant interactions requires a sufficient level of skill. In team sports, for instance, the purpose of practice is to enable individuals to gain the competence to participate in team actions. In addition to acquiring the relevant skills, this requires them to be *subjectivized* into specific embodied social identities which first allows them to enact specific roles on the team (e.g., center back or goalkeeper), and thereby, to be competent participants in team actions (cf. Brümmer, 2015; Michaeler, 2018). Thus, although an embodied social identity affordance is an affordance for an individual subject, the respective embodied social identity is social insofar as it has been shaped during past social interactions and requires ongoing interactions for its reenactment.

In sum, embodied social identity affordances are different from social, canonical, common, and joint affordances. For, embodied social identity affordances are affordances for acting in light of what is perceived as relevant for the team. By contrast, social, canonical, common, and joint affordances do not have this feature. These are affordances for individuals who feel and act from the perspective of individuals, even if acting from an individual perspective sometimes requires cooperating with another person as a means to one's end.

Towards a conception of collective affordances

With help of this concept of an *embodied social identity affordance*, we can now develop our conception of *collective affordances*. To do so, we will draw on Marsh et al. (2009) conception of *synergies*, as described in the section “Radical Embodied Social Psychology”, proposing that dynamically coupled individual organisms can form a new social unit, a synergy, which has affordances of its own. We are now using the same idea, but not for all kinds of synergies, which might also involve organisms that unconsciously synchronize their behavior. Instead, we restrict it to *collectives*. As we already defined in the introduction, we take a *collective* to be an ecologically situated perception-action system that emerges whenever two or more appropriately subjectivized organisms dynamically interact with each other against the background of their relevant embodied social identities.

The concept of embodied social identity affordances, as developed in the previous section, allows us to spell out the emergence of a collective in more detail. If several individual organisms start acting based on their respective embodied social identity affordances, if their embodied social identity affordances are sufficiently similar to each other, and if they are in sufficient proximity to each other, it is likely that they will start to dynamically interact with each other. These interactions, in turn, will further activate and strengthen the respective embodied social identities and also modify them to be better geared towards each other. This will also stabilize interaction patterns, allowing for smoother coordination. Through these dynamical interactions, individuals come to constitute a collective. The emergence of a collective is a dynamical process where some individual organisms enact embodied social identity affordances which leads other's to

also act on the basis of their embodied social identities. If they then also enact their respective embodied social identity affordances, their actions can dynamically influence each other in perception-action loops in which the relevant embodied social identity affordances are continuously realized, allowing the individual organisms to act as a unit. Through the process just described, a collective emerges, which, as described before, is a dynamical system which can be said to function as an agent of its own based on the “emergence of system-level properties by means of self-organization” (Vallacher et al., 2002, p. 266). Once they have become part of a collective, individuals, in and through dynamically interacting with each other, collectively interact with the environment, without the need for coordination by a higher authority.

After reading this and the previous section, some readers might be puzzled about a potential tension in our approach between the claim that “individuals really do not matter” and the claim that “individuals really do matter.”⁴ We are aware of this tension and submit to consider it necessary. There is a sense in which it is right to say that *individuals really do not matter*. This is the case insofar as the action capabilities of the collective are more than the sum of the action capabilities of the involved individuals. It is not only the case that actions of the collective cannot be explained or predicted solely by knowledge about the interacting individuals, the collective also has top-down effects shaping the action capabilities of the involved individuals. On the other hand, there is a sense in which it is correct to say that *individuals really do matter*. A collective is dynamically constituted by interacting individuals and this involves bottom-up constraints of what actions can be realized on the level of the collective. We consider this position to be in line with the theory of nonlinear dynamical systems, which holds that, on the one hand, the nonlinear interaction among the elements is the source of complexity in the system’s behavior. On the other hand, because these interactions are nonlinear in nature, the macro-level properties characterizing the system “may arise in a fashion that cannot be predicted solely from knowledge of the individual elements in isolation.” (Vallacher et al., 2002, p. 266) Hence, we are advocating a complex position that aims at explaining both the emergent properties of the system as a whole and the defining characteristics of the elements constituting the system.

Most importantly for our proposal, a collective, such as a football team or a running group, has affordances of its own. We suggest calling such an affordance, the subject of which is a whole collective, a *collective affordance*. To be clear, we are not the first authors who use this term. For instance, Leonardi (2013) makes use of the term “collective affordance” in an article in the study of technology. However, even though the word “collective affordance” is already in use, there is not yet a careful analysis of collective affordances – in particular if we are right that collective affordances can only be well understood if one understands how social identities play a crucial role in the emergence of collectives. Now, according to our attempt of analyzing collective affordances in more depth, collective agency is a sensorimotor loop of a collective perceiving collective affordances, reacting to them, perceiving new collective affordances, and so on. In such a case, there is a genuine collective agent. Due to the nonlinear and dynamical nature of the interactions constituting a collective, the actions of the collective agent

⁴We thank two anonymous reviewers for urging us to clarify this point.

cannot be reduced to the sum of the actions of the involved individuals, and to their individual ways of reacting to embodied social identity affordances. Nevertheless, it is possible to analyze the emergence of a collective agent in terms of *dynamical interactions* of individual organisms who perceive their environment from the perspective of a collective and react to embodied social identity affordances.

A collective affordance is subject-dependent insofar as it exists only in relation to a collective that could do what the situation affords. Still, information about the relevant affordance is in the subject-environment-relation, even in cases when the collective does not realize it, and even if all relevant individual members of the collective fail to realize the corresponding embodied social identity affordances. We consider it true of any system that it might not perceive aspects of the environment that it could or should perceive. For example, a frog might fail to notice a fly, which would provide an affordance to eat. In the same way, after a football team has blocked an attack by the opposing team, the situation on the pitch (with players of the opposing team not yet back in their defensive positions and strikers of the first team in good positions) might provide a collective affordance to play a counterattack. However, it might be that the team does not enact this collective affordance, and even that all eleven players fail to enact the respective embodied social identity affordances. Yet, it is possible for a trained observer to recognize that the situation would normally provide certain affordances to that system. Such an observer sees the potential relation that is not recognized by the system. For instance, an observer can see that the fly could provide the affordance of eating it to the frog. In the same way, the coach or any bystander with expertise might recognize the collective affordance, and members of the team might also recognize it later when seeing a recording of the game. Moreover, for a collective to enact a collective affordance, it is not necessary that any single individual sees the collective affordance as such – if each individual organism enacts the embodied social identity affordances she has in virtue of her embodied social identity, even without recognizing what happens on the level of the collective, this might be sufficient for the collective enactment of the collective affordance.

Thus, it is not only the case that collective affordances can be observed when the environment is experienced from the perspective of the collective. It is also the case that these affordances can be observed via a perspective shift – that is, a trained external observer can see what affordances exist for the collective. In any case, collective affordances are both ontologically and phenomenologically dependent on the collective. For instance, the movements of football players on the pitch only make sense if seen from the perspective of their team. If one wants to explain what is going on during a football game, one needs to refer to the level of the collective, that is, to collective affordances. For example, a defender moving forward and away from the opponent she is guarding shortly prior to an expected pass only makes sense when seen from the perspective of the back four which is collectively realizing the affordance of playing an offside trap. Thus, the action of each individual defender is only sensible and comprehensible against the background of the collective affordances, that is, when it is understood as a contribution to the collective's reaction to what the situation affords *for them*, the team.

It is important to appreciate that what collectives can do is different from what individual agents can do. It might be the case that a collective can react to fewer affordances than its individual members. A gap in the crowd might be big enough *for me* to run

through, but too narrow *for us*. The green light might be long enough *for me* to cross the street, but too short *for us*. But there might also be cases in which a group can react to more affordances than an individual member. A well-positioned center back duo is not an affordance to dribble for an averagely talented attacking player, but it usually is an affordance to run a quick attack for a group of three or more players.

Finally, we can further sharpen the concept of collective affordances by distinguishing it from the concept of joint affordances.⁵ As we described earlier, a joint affordance is an affordance that requires more than one organism in order to realize the affordance. For instance, a two-handled saw can provide a joint affordance, in the sense that two individuals need to cooperate in order to use it. Importantly, however, joint affordances can still be affordances for individuals: Each of the two individuals using the two-handled saw needs the other as a means for her sawing. By contrast, a collective affordance is necessarily an affordance for us, for a collective; a collective affordance depends ontologically on a collective. Against this background, there can be cases where something provides (1) only a joint affordance, but not a collective affordance, (2) only collective affordance, but not a joint affordance, (3) both a joint and a collective affordance, and (4) neither a joint nor a collective affordance. An example for (1) something providing only a joint affordance, but not a collective affordance is the two-handled saw, if it is understood so that the involved individuals perceive the saw from individualistic perspectives and understand the other individual as a means for cooperation, but not as part of the same group. An example for (2) something providing only a collective, but not a joint affordance exists when an organism acts as part of a collective, but does not need another as a means to realize a specific affordance. For example, in the last minutes of a football match, the last defender of a team might only be able to stop a promising attack by fouling the attacker. The attacker provides a collective affordance for fouling him to the attacked team, and an embodied social identity affordance to the last defender. Yet, the last defender needs no one else to realize the affordance, that is, to foul the attacker – so there is not a joint affordance. (Of course, the action of fouling the attacker is itself part of the larger interactive social dynamics on the field.) An example for (3) something providing both a joint affordance and a collective affordance can be a group of two attackers in a sport like football, which might be stopped by a collective of three defenders. Here the attackers provide a collective affordance for the attacked collective of defenders and are experienced as a threat to the collective, but the defenders also need to join forces: Thus, the team of two attackers provides something that can be analyzed both as a joint and as a collective affordance. Another example for something providing both a joint affordance and a collective affordance might be the case of the two-handed saw, *but only if* it is understood so that the two sawing agents are (in a hypothetical scenario) part of a sawing team and experience themselves as members of a sawing collective. Finally, an example for (4) something social which provides neither a joint nor a collective affordance is people walking towards an approaching bus simultaneously – something which has been analyzed with the concept of common affordances. Here, the bus provides neither an

⁵We thank an anonymous reviewer for urging us to clarify this point.

affordance for a whole collective nor is joint work necessary for realizing the (individual) affordances.

Advantages of the proposed conception of collective affordances

After this outline of our conception of collective affordances, let us reconsider how it relates to established knowledge in social ecological psychology. While our account is very much in line with RESP, it is more specific with regard to the way how synergies function in the special case of collectives. In particular, our account is more specific than RESP when it comes to analyzing the inner organization of collectives. As a demarcation, consider the two following passages about team coordination. Silva, Garganta, Araújo, Davids, and Aguiar (2013, p. 768) write:

Thus, players can communicate by presenting affordances for each other [8] (whether consciously or not) by performing actions like passing the ball or running into an open space. These include the affordances another actor can provide under a given set of environmental conditions (i.e., affordances for others) and the affordances another actor's actions afford a perceiver (i.e., affordances of others).

Also consider what Passos and Chow (2016) write about team coordination:

[W]e highlight how interteam coordination can be influenced by different task constraints such as the values of player distances to the goal, the defender's distance to the nearest sideline, pitch dimensions, or the numerical differences between competing players in a sub-phase of play. (pp. 159f.)

We entirely agree with the quoted analyses of team coordination. However, we emphasize that our approach provides important additional resources for explaining team coordination, namely the conceptions of embodied social identities and embodied social identity affordances. In relevant cases, members of a collective perceive their environment from the perspective of what is relevant for the collective. They sense what they have to do in their specific role within the collective and enact the corresponding embodied social identity affordances. Moreover, when individual roles and their coordination have been trained successfully, the members of a team can rely on their teammates to see the environment in a sufficiently similar or complementing way, to enact sufficiently compatible embodied social identity affordances, and to play their respective roles in light of what is relevant for the team. This is what enables a football team, for instance, to collectively move forward at just the right moment to catch an opposing striker offside.

It is important to emphasize in this context that different members of a collective often need to perform very different actions in order for a collective to perform a collective action – a point that is also not yet well appreciated by RESP. Consider another football example: If an opposing player in possession of the ball is approaching, this provides the attacked team with a collective affordance to defend the attack. On the level of the system, this means that the back four has a collective affordance to move backwards. If we look at the level of the components of the system, in our example the players on the team, this usually means the following: The defensive player closest to the ball carrier enacts the embodied social identity affordance to put pressure on the ball. The defensive players next to her enacts the embodied social identity affordances to cover the space behind her teammate (coaches call this “a defensive triangle”). The

other teammates enact the embodied social identity affordances to move closer to form a compact shape. In this way, all the team members realize embodied social identity affordances that are constituted by their respective roles on the team. They realize affordances for what the right thing for us, the team, to do. This description is a simplification, of course, as it freezes the dynamics of the game and zooms into a static situation on the pitch. In reality, the players are in constant interactions in and through which the movement of each player continuously influences the embodied social identity affordances of all other players, constituting the continuous flow of the game.

In summary, we take our proposal to refine RESP in particular for higher level cases of collective agency, where the agent is a collective whose members act in virtue of their embodied social identities. Consequently, our proposal might be said to provide new conceptual resources for explaining important cases of collective action, thus extending the power and reach of social ecological psychology, making it a genuine alternative to the collective intentionality framework.

A short outlook on future research on collective action

We think that there are at least three ways in which our proposal can be helpful for future research on collective action.

First, it provides a new alternative for explaining collective action to those who have problems with the collective intentionality framework, but who suppose that RESP is only able to explain “lower level” social behavior. Our proposal invites those researchers to consider our augmented version of RESP as an option for analyzing also those collective actions that have traditionally been thought to be exclusively in the reach of the collective intentionality framework.

Second, the conceptual tools we develop in this paper can lead to new research questions. For instance, one can try to find and measure collective affordances. What influences whether a collective enacts a collective affordance? How do collective affordances change when the composition of the collective is modified or when the embodied social identities of members of the collective are modified? Moreover, one might work on the distinction between a “mere” synergy and a collective in our sense. Are there differences in the actions of “mere” synergies and collectives? For instance, can a collective perform more complicated actions? Finally, how can one more deeply analyze the “inner workings” of a collective? How exactly does the history of a collective – within which the participants were subjectivized to have certain embodied social identities – influence its current performance?

Thirdly and finally, our approach might invite new experiments on ecologically situated collective action. Most of the questions just mentioned need to be investigated experimentally. What is more, Miles, Lumsden, Richardson, and Macrae (2011) already set up a helpful first experiment in order to investigate how social identity (or, in their terminology, “group membership”) influences behavioral synchrony in rhythmic action. In their experiment, participants had to perform a rhythmic action while seeing on video an alleged fellow participant performing the same rhythmic action, a participant with whom they would – they are told – later talk about art, and who would wear a red or a blue sticker indicating her art preference – and thus whether she is in the same or

a different art preference group. As Miles et al. (2011) note, however, the stickers provide only a “minimal group status.” In terms of our proposal, wearing the same sticker is not sufficient for having the same embodied social identity, since we take real interactions to be necessary for forming an embodied social identity. Thus, what would be crucial for the activation of an embodied social identity is that the participant would at the moment be acting together with her fellow participant and would expect that they are about to discuss art soon. Hence, this experiment is to our mind a helpful start for investigating in detail the role of social identities for social interaction, but the crucial next step are investigations into the relevance of full-blown embodied social identities. Given the importance of social identities for social action capabilities, we hope that social ecological psychologists will investigate how the manipulation of individuals’ social identities influences the course of collective actions. In such a way, one can find out whether our theoretical proposal is empirically fruitful or not. At the moment, we have all reason to believe that our proposal will turn out to be fruitful, and we hope that the considerations in this section have made it plausible that our approach promises to open up new avenues for future research on collective action.

Conclusion

In this article, we have considered widespread phenomena of collective action where a collective spontaneously enacts opportunities for action in its environment, and where the members of the collective perceive their environment from the perspective of the collective. At first, we shortly discussed why we consider the collective intentionality approach to be too cognitivist, too internalist, and too individualistic to explain the respective collective actions. Against this background, we moved to an entirely different framework, namely to RESP. We argued that RESP is able to provide a promising framework for explaining the respective collective actions, but that it is in need of being augmented to account for higher level cases of collective agency. To augment RESP in the required way, we combined RESP with research on social identity. We suggested that embodied social identities can lead subjects to have new affordances, namely embodied social identity affordances, which are affordances for individuals who perceive their environment in terms of what is relevant for the collective. If a suitable number of individual subjects acts against the background of their respective embodied social identities, and if they dynamically interact with each other, a collective emerges. Following the dynamical systems approach, we propose analyzing such a collective as an agent of its own. There is a genuine collective agent who has genuine collective affordances, which it can enact. Although such an environmentally embedded collective agent emerges out of a dynamical interaction of individual subjects who act against the background of their embodied social identities, it has emergent properties that cannot be explained or predicted by solely understanding the involved individuals. In sum, we hope to have provided helpful new conceptual tools for future research on collective action, conceptual tools which open up a genuine alternative to the accounts from the collective intentionality debate, and which offer crucial refinements to social ecological psychology, making it able to account even for higher level cases of collective action.

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