I apply the theory of embodiment to various questions concerning the identity of social groups.

**Keywords:** Social ontology; group; embodiment; material thing; essence; ground; reference; location; form; part

I am of the opinion, along with a number of other philosophers, that social groups and organizations are of the same general nature as material things: the differences, insofar as they exist, are intra-rather than extra-categorical. Thus if we wish to understand what it is to be a member of a group, or to understand how a group can change its members while remaining the same, or to understand how two groups can have the very same members, then the answers we should give will be essentially the same as the answers we should give to the questions as to what it is to be a constituent of a material thing, or how a material thing can change its constitution over time, or how two material things can have the very same material constitution.¹

I have attempted to answer these questions in the case of material things in an earlier paper (Fine 1999). My view, roughly speaking, is that there are three basic operations by which material things may be formed from some underlying matter.² One of these is the familiar operation of compounding or fusion, whereby two or more things may combine to form a sum. The other two operations are less familiar and their admission constitutes a fundamental departure from standard mereological doctrine. I call them rigid and variable embodiment. Rigid embodiment is an operation whereby various objects are combined into a whole whose component parts bear certain properties or stand in certain relations to one another. Thus the component parts are not merely fused but integrated into some kind of structured whole. Variable embodiment, on the other hand, is an operation whereby we may form an object that is manifested as different, more particular, objects at different times or in different counterfactual circumstances. The one operation accounts for the constitution of the object at a time, while the other accounts for the actual or possible changes in its constitution.

In the case of social groups—and perhaps of social objects in general—we may take the underlying matter to consist of people and of various other objects that may be party to their social interaction, such as buildings and geographical locations and perhaps also various kinds of normative or cultural artifact. Of course, these objects in their turn may have an analysis in terms of other objects, but this further analysis will be irrelevant to our understanding of social objects as social objects. My view therefore is that social groups—and perhaps social objects in general—should be viewed as the result of applying these various fundamental operations to the underlying ‘matter’ of the social world.

Consider a married couple, John and Mary, for example. On my view, this will be a rigid embodiment, composed of John and Mary, which is not simply the unstructured fusion of John and Mary but a structured whole in which John stands in the relation of being married to Mary. Or consider a nuclear family. This will consist of John and Mary, say, and their various children. But its constitution can vary from time to time as new children are born. Thus it will be a variable embodiment whose manifestations are various rigid embodiments, which, in their turn, are structured wholes in which two of its members are spouses of

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² There may also be some related operations of ‘segmentation,’ as in Fine (2010), whereby parts can be formed from wholes.
one another and in which the other members are the children of those spouses. In this way, the identity of objects in the social world can be seen as falling under the same general rubric as the identity of objects in the ordinary material world.

Such an account is then able to deal with problems common to the material and the social sphere. Thus just as one might wonder how two non-identical material things could be constituted by the same matter at a given time, so one might wonder how two committees could be constituted by the same members at a given time. And the answer, according to the theory of embodiment, is the same; at any given time, the material thing or the committee is manifested as a rigid embodiment, which is the same in the objects it relates but different in how they are related.

In what follows I would like to discuss four main topics that, to a large extent, are peculiar to the case of social groups. These are: Location (§1); Mixed Character (§2); Social Holism (§3); and Structure (§4). The first concerns the question of the location of social groups, the second the question of how, if at all, a social group is able to sustain such heterogenous forms of predication, the third with the familiar question of whether social phenomena are somehow reducible to individualistic or non-social phenomena, and the fourth with the question of how, and in what manner, a social group is capable of possessing structure. In each case, I shall consider how the theory of embodiment is able to shed light on these questions and add to our understanding of social groups; and although my focus will be on social groups, many of the things I wish to say will apply, more generally, to social organizations and institutions and other types of social object.

I am aware that there are a number of alternative views concerning the identity of social groups. They could be taken to be pluralities, for example, or sets (Effingham 2010), or sums of stages (Coppl 1984). There are familiar reasons for not holding such views in the case of ordinary material things; and in what follows, I shall suppose that similar reasons obtain in the case of social groups. Thus my aim is not to argue against these alternative views but to consider the implications of my own view. However, I would like to think that its ability to shed light on some of these further questions provides additional support for the view.³

§1 Location

We face a familiar problem concerning the location of social groups or organizations.⁵ Consider All Souls College. It is composed, at least in part, by its fellows. But it is not usually, even in part, where its fellows are. If all of the fellows decide to vacation in Corsica, the college will remain where it has always been, on the High Street, and it will not also be located, even in part, on the sunny beaches of Corsica. Yet surely, if an object is at a given time composed of other objects then should it not at least share in the location of the objects at that time?

Not only is this an intuitive difficulty, it is also a difficulty for my theory of embodiment. For I take the college at any moment of its existence to be manifested by a rigid embodiment – which will be composed of various individuals, including the fellows, standing in various relationships to one another. But by the principle of location for rigid embodiments (Fine 1999: 66), the rigid embodiment will be where the component individuals are and, by the principle of location for variable embodiments (Fine 1999: 70), the variable embodiment, which is the college, will at the given time be where the rigid embodiment is. Thus my theory will incorrectly predict that the college is where the fellows are.

How is this difficulty to be solved? Say that an object is spatial if it has a location in space and temporal if it exists in time. A spatial object will presumably be temporal though a temporal object need not be spatial. This classification of objects might, somewhat controversially, be extended to worldly objects, which exist within a modal dimension, or to all objects whatever (Fine 2005: chapter 9).

I would like to suggest that when one object is composed of other objects, those objects may be designated as having a certain status as spatial or temporal (or worldly or objectual) parts.⁶ The operation of

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³ My own misgivings have been stated in Fine (1999, 2003, 2007, 2008) and criticisms of such views in the social case have been considered in Ritchie (2013).

⁴ Wahlberg (2014: 541–543) has criticized my theory of embodiment as an account of the ‘units’ to which social status functions are assigned à la Searle. However, the application I wish to consider here is one in which the social objects are themselves a kind of embodiment. The recent work of Ferrario R., Masolo C., Porello D., (2018) provides a more formal application of the theory of embodiment, set within the situation calculus, to the nature of social organizations.

⁵ First raised, as far as I am aware, by Ruben (1983) (see also Ruben (1985)). Alternative solutions have been proposed by Hindriks (2013) and Hawley (2017). However, it seems to me that Hindriks is not readily able to preserve the intuition that, in many cases, a social group is indeed composed of its members, since there is nothing in his account of constitution which explains how this might be so, while Hawley is not readily able to preserve the intuition that, in many cases, a social group is not where its members are.

⁶ I should make clear that I use ‘part’ broadly to cover what might also be called a constituent or component part and not merely a part in the sense of standard mereology (Fine 2010).
The character of an embodiment has to do with its characteristic features. When does the embodiment exist and where? What is it like? How does it behave?

§2 Mixed Character

The character of an embodiment has to do with its characteristic features. When does the embodiment exist and where? What is it like? How does it behave?

In my earlier paper, I discussed two kinds of characteristic feature. There were general features, which could be determined on the basis of a general rule, and special features, which could only be determined on the basis of rules which were specific to the kind of object in question. Location is an example of a general feature: the location of an object is given in a general way by the location of the object’s spatial parts. Color is
an example of a special feature: the color of an object depends in a highly unsystematic way on the object’s kind. Thus the color of a grapefruit is the color of its flesh, the color of a house the color of its exterior, the color of a biro the color of its ink.

It would be a mistake to think that when I say that a house is red what I am really saying is that the exterior is red, as if what ‘the house’ really referred to its exterior or that what ‘red’ really meant in this context is having a red exterior. For what it is for a house to be red is simply for its exterior to be red. When a painter says to his worried client ‘the paint and the house are both red’, it is not as if there is an ambiguity in his use of the term ‘red’ and, when I say ‘I walked into a red house’, it is not as if ‘house’ is being used ambiguously to denote the exterior of the house and a dwelling.

I doubt that this is a common mistake in the case of ordinary material things. But it is a mistake made over and over again in connection with social groups and organizations. Here is a typical quotation on the subject: 

... we sometimes use ‘France’ to denote a geographical area, as for example if I say ‘We visited France last summer.’ On the other hand, we sometimes use ‘France’ to denote a social entity which cannot be identified with any particular geographical area, as for example if I say ‘France is a charter member of the United Nations’ (Ruben 1983: 221). Chomsky (2000: 16–17, 20–21) has gone even further and used data of this sort to argue, not for ambiguous reference, but for the absence of reference altogether.

But I do not believe the linguistic data in this case supports any such conclusions. The entity which the person visited is the very same entity which became a charter member of the United Nations. For what it is to visit a country is to go to its geographical area and what it is for a country to be a charter member is for its state to become a charter member. I am not even sure that it is only strictly or properly true to say that the exterior is red or that one visited the area. For an exterior is red only in so far as certain prominent parts of the exterior are red and one visits an area only in so far as one visits certain of its parts. So why is the one use strict or proper and the other not?

What really drives these conclusions, it seems to me, is not the linguistic data, which in itself provides no evidence either for ambiguity or for absence of reference, but certain ontological misgivings. It is thought that no entities can possibly play the role that the putative referents are called upon to play—that no single entity can, for example, be both one that is visited and a charter member of the United Nations. And what, in its turn, drives these misgivings is an unduly limited conception of what objects there could be. Thus if it is thought that all entities with material properties are aggregates of material particles, then there seems to be no room for an entity to which one can go and which can also enter into political relationships.

What something like the theory of embodiment helps us to see is that these ontological misgivings are misguided. For once we allow for a rich abundance in the way objects can come together to form wholes, we may also allow for a rich abundance in the properties that they are capable of possessing. Thus a country can, at any given time, be a structured whole that includes a geographical area and a political state as parts, with the one relevant to where it is and the other relevant to the political relationships into which it may enter. More generally, each kind of structured whole will be associated with rules that determine the properties of the whole on the basis of the properties of the components; and the diversity in the way the components are structured can then be used to explain the diversity in the properties to which they give rise.

One might hope to avoid the appeal to embodiments in explaining the mixed character of groups by appeal to the derivative properties of their components. Thus one might take a country to be either a geographical area or a political state and then take the properties of the country to be derivative properties of the area, which it has through its association with the state, or derivative properties of the state, which it has through its association with the area. But the fact is that France is a charter member of the United Nations and has a temperate climate, and yet the geographic area is not the kind of thing to be a charter member of the United Nations and the political state is not the kind of thing to enjoy a temperate climate.

One might also hope to avoid appeal to embodiments by taking a group to be a standard mereological sum of its components — somewhat along the lines of Gotham (2017), who takes a book to be a mereological sum of a physical-book and an informational-book. But such a view is unable to account for the dynamical

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8 This phenomenon is an instance of what is known in the linguistics literature as (anomalous) co-predication (Pustejovsky 1995: 236). My focus is on this one case; and I would not wish to suggest that all cases of the phenomenon, and especially those involving the type/token distinction, are to be handled in the very same way.

9 Liebesman and Magidor (2017: 137) also appeal to derived, or inherited, properties to account for certain instances of co-predication. The idea, in the context of the theory of embodiment, goes back to the Character Postulates of Fine (1999: 67).

10 Liebesman and Magidor (2018) make somewhat similar points in regard to terms like ‘book,’ which appear to suffer from a type/token ambiguity, although I do not know whether they would be happy with the kind of metaphysical underpinning that I wish to provide for the present cases of co-predication.
aspects of groups, their ability to change their constitution over time (in this respect, books are not such a good exemplar). It is also unable to account for the structural aspect of groups—the possibility, for example, that a committee might be composed of various sub-committees, rather than being a 'flat' mereological sum of its members (along with other, more abstract, components). This, in its turn, prevents the view from being able to provide an adequate account of how properties of the whole might be inherited from its parts. As Liebesman and Magidor (2017: fn. 38) point out, one cannot sensibly take the whole to possess the properties of all of its parts. But then which parts? For a country to declare war, we may suppose, is for its leader to declare war, while for a company to declare bankruptcy is for its chief financial officer to declare bankruptcy. But why the one part rather than another? If we are merely dealing with aggregates, then it is hard to see why any one part (capable of having the properties in question) should be privileged over another. But if we are dealing with structured wholes, then we can plausibly appeal to the position of the part within the structure to explain the special role it is capable of playing in determining the properties of the whole.\footnote{I do not wish to suggest that all properties of a group—or, more generally, of a structured whole—are inherited from its parts. A team, for example, may win, even though no member (or other component) of the team wins in the relevant sense. But in this case, too, it seems that a structured view of whole can more plausibly account for how it is capable of having such properties since it is on the basis of the structure of the whole that we understand what its non-derivative properties might be.}

§3 Social Holism
According to one familiar form of social holism, not every social fact is grounded in individualistic facts. There are, in this sense, irreducibly social facts.\footnote{See Epstein (2014) discusses some of the different ways of taking the thesis. My preferred formulation is in terms of the notion of metaphysical ground, but this is not too important for much of what I want to say.}

The issue of social holism has usually centered on the behavior of social groups or organizations. Can a group decision, for example, be grounded in the decisions of its individual members? But there is also an issue concerning the very existence of social groups. I would like to elaborate on this issue in the present section and I would also like to show how, within something like the theory of embodiment, it gives rise to a further issue of holism, one concerning the identity of social objects rather than the facts about them. My remarks may also apply to other kinds of social entity, such as laws or bank notes, but this is not a topic I shall pursue.

Suppose a department is wondering whether to set up a grievance committee and suppose the bi-laws of the department include the rule that no committee can be formed without the consent of the department. What then does it take (what are the grounds) for the committee to exist? Presumably, part of what it takes is that the department should consent to the formation of such a committee.

Some philosophers, as we have seen, may worry about what it is for the department to consent to such a thing. But let us suppose that the bi-laws stipulate that this is simply a matter of majority consent; each member of a majority should consent. The problem now is not with their consent but its content. This is that a grievance committee be formed, where the committees in question presumably include the very committee that is about to be formed. Or, to put it more formally, the department consents to its being the case that $\exists x (x$ is a committee of such and such a sort), where the range of the quantifier $\exists x$ must include the committee if the formation of the committee is to be in accordance with the consent. Thus the grounds for the existence of the committee will in this way involve indirect reference to the committee itself.

Suppose that the bi-laws also stipulate that no committee will last more than a year without the consent of the department. Then what would it take for the committee to continue to exist once the year is up? Presumably part of what it would take is that the department, i.e., a majority of its members, consent to its continued existence. The content of their consent is now that very committee continues to exist or, to put it more formally, the department must consent, not merely to a certain sort of committee continuing to exist, but to the very committee continuing to exist. Thus, in this case, the ground for the continued existence of the committee will involve direct reference to that committee.

It should be noted that we are not here simply adopting the kind of position propounded by Searle (1995: 32–33), according to which for something to be a committee it must be so regarded. For our focus is not on the concept committee, on what it is to be a committee, but on the identity of particular committees, on what it is to be this committee. Nor are we adopting the kind of position advocated by Gilbert (1989: 148–149) according to which ‘a social group’s existence is basically a matter of the members of a set of people being conscious that they are linked by a special tie’.\footnote{Similar views are to be found in Bratman (2014) and Tuomela (1995).} For I am suggesting that, in certain cases, that special tie will involve reference to the kind of group or even to the very group that is in question. Thus the group, or the kind, itself figures in the mental connections by which the members of the particular group are related.
These mental connections are presumably social facts or at least facts which the individualist opponent of social holism would also want to ground in non-social facts. The individualist therefore faces the problem of how they are to be grounded.

This issue is, to some extent, a problem for any reductive view. Suppose I want to get rid of chairs in favor of particles. Then presumably I will also want to get rid of our thoughts about chairs, which are not presumably thoughts about particles. However, the problem is especially acute within the social sphere for a number of different reasons.\(^{14}\)

For one thing, the problem arises not just for the attitudinal facts but also for the non-attitudinal facts, since the grounds for the non-attitudinal facts will involve the attitudinal facts. It is not therefore possible to sequester the two problems, as is the common practice in other areas, and treat the problem of ground for the non-attitudinal facts without regard for how the attitudinal facts might be grounded.

In the second place, it seems to be especially difficult in the social case to provide an adequate substitute for the attitudinal facts. Suppose that the department consents to certain members meeting on a regular basis to discuss grievances that are brought to them. Then this, it seems, does not amount to the department consenting to the formation of a departmental committee, since this requires that they regard the members of the department who meet in this way as constituting such a committee rather than as an informal group, let us say. For to be a departmental committee is, in part, to be so regarded; and this response-dependence character of what it is to be a committee seems to get in the way of a more straightforward, less committal, characterization of the content of the consent.\(^{15}\)

Finally, and more significantly, these issues over existence give shape and substance to a different form of holism—what one might call identity-based rather than fact-based holism. Our previous fact-based form of holism denied that all social facts are grounded in non-social facts. It is therefore a view about the ground, or basis, of social facts. Identity-based holism, on the other hand, denies that all social objects have an identity that can be specified in terms of non-social objects. It is therefore a view about the identity, or nature, of social objects.\(^{16}\)

Under the theory of embodiment, and other views of this sort, the two forms of holism will be connected since questions concerning the existence of particular social objects will turn on questions concerning their identity. Suppose, for simplicity, that a committee is (by its very nature) a rigid embodiment; it consists in certain individuals connected in a certain way. The rigid embodiment will then exist just in case the individuals are connected in this way. Thus if the connection involves indirect reference to committees then the identity of the committee would also appear to involve indirect reference to committees; we cannot say what the committee is without appeal to a domain of social objects which includes that very committee.

Suppose now, more plausibly, that the committee is a variable embodiment; it is (by its very nature) the embodiment of a ‘principle’ that picks out the various manifestations of the committee. The committee will then exist at a given time if the associated principle picks out something for the committee to be at that time. But if the committee’s continued existence involves direct reference to the committee itself, as it does once the year is up, then the identity of the committee would also appear to involve direct reference to the committee; we cannot say what the committee is without appeal to that very committee.

It turns out that these two forms of circularity have their analogues in the philosophy of mathematics. Thus I might define the set of natural numbers to be the smallest set of objects which includes 0 and is closed under successor so that, in defining the set of natural numbers, I appeal to a domain of sets which includes the very set to be defined. Or I might define a set to be one whose sole member is itself, so that, in defining the set, I appear to make reference to that very set. The first is a case of impredicativity, in which a mathematical object is defined in terms of a domain of objects to which it belongs; the second is a case of ill-foundedness, in which the definition of a mathematical object appears to involve a loop or regress. And in both cases, there appears to be some sort of circularity in the account of what the object is.

Whether the circularity is vicious is another matter. This issue has been hotly debated. But it is commonly assumed that a realist stance, in which the mathematical objects are already ‘out there,’ would justify both

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\(^{14}\) The problem may also arise for certain kinds of artifact—as with a statue, which is made with the intention of making a statue. The role of intention in making artifacts has been emphasized by Evnine (2016), though within the context of a rather different framework.

\(^{15}\) I have been greatly influenced by Passinsky (2020), who has proposed a similar response-dependent view and used it to account for the sense in which social objects, in contrast to ordinary material objects, are somehow unreal.

\(^{16}\) I here presuppose a distinction between essence and ground. There has been a great deal of discussion of these two notions; and my own views have been developed in a number of publications, including Fine (1994, 2012). But again, I hope that my present use of these notions does not heavily depend upon my particular way of construing them.
forms of definition. After all, if there already is a set which is its own sole member, then we would be justified in so defining it. It is also commonly assumed that an anti-realist stance, in which the mathematical objects are not already ‘out there’ but somehow the result of construction, would nullify both forms of definition. For in defining the set of numbers or the self-singleton, I cannot presuppose that the set is already there but must somehow construct it from what is already given.

The mathematical case might make the prospects for combining an identity-based holism in the social sphere with an anti-realist or reductive attitude towards social objects look pretty dim. But there is in fact a very significant difference between the two cases. For in the social case, the reference to the objects whose identity is in question is always made within the context of an attitude. The department must consent to a committee or to the continued existence of the committee. The object or objects hide behind a mental barrier, so to speak. They do not have a full existence in the world but only a partial form of existence in the mind; and this may lead one to suspect that a fully realist attitude towards them is not required for the various forms of circular definition to be in good order.

§4 Structure

Social groups and organizations have structure. A family is structured by its division into parents and children, a committee by its various members, office-holders, responsibilities, etc., a company by such things as its buildings, personnel and departments. The elements of a structure may themselves have structure, as when the department of a company is structured into subdepartments, each with its own substructure.

Philosophers sometimes draw a distinction between structured and unstructured social groups. Thus Ritchie (2013, 2015) distinguishes between type 1 groups, such as committees and organizations, which are structured and require volitional membership and some kind of shared intentionality from type 2 groups, such as racial or ethnic groups, which do not possess these characteristics. But the relevant distinction, it seems to me, is not between some or no structure but between more or less structure. For the common possession of a racial or ethnic feature, perhaps even by Ritchie’s own lights, should itself be taken to constitute a minimal form of structure, even if it is of an attributive rather than a relational sort.

Nor, it seems to me, should the differences between type 1 and type 2 groups be regarded as a difference in kind, as Ritchie seems to think, since one would expect social groups with a more complex underlying structure to be capable of more complex forms of behavior. There would therefore appear to be not a simple division between one kind of group and the other but a continuum of groups of more or less complexity.17

Nor, it seems to me, should we follow Ritchie (2013) in thinking that the structure of a social group will necessarily remain the same over time.18 Perhaps some groups are like this. A family, for example, will be structured by its division into parents and children and, even if the number of children change, there will still be sense in which the underlying structure remains the same. However, a company could greatly change its organization over time as it absorbs new companies or sheds subdivision or introduces new departments or a country could greatly change its system of government after a revolution; and there appears to be no reasonable sense in which the structure of these entities remains the same. One might even imagine a society, The Inconstants, who make it their policy to radically change the structure of their society from one year to the next. The very existence of the group, in this case, would depend upon a continual change in structure.

We may—at least, in the first instance—represent a structure by means of a relational graph.19 This will contain certain nodes, which correspond to positions or roles within the structure; and these nodes will be connected by certain edges, which correspond to relations between the nodes. An instance of the structure is then obtained by assigning an individual to each node in such a way that individuals along an edge are related by the relation (or relations) associated with the edge.20

17 Epstein (2015) makes a similar criticism.
18 ‘Once a group structure is realized a group, G, exists. The persistence of G requires the continuity of the realization of S. That is, occupants of the nodes of S which form the realization of group G (i.e., members of G) must continue to bear the functional relations required for a realization of S’ (Ritchie 2013: 270). In more recent work, Ritchie (2020: 412) allows for ‘groups to persist through changes ... in structure.’
19 Strictly speaking, it is a labeled directed hypergraph. Thus the edges are ordered n-tuples of nodes, for n > 0, and there is a function assigning an n-ary relation (or non-empty set of n-ary relations) to each edge. This is something like the representation of structure that is implicit in Ritchie (2013, 2015, 2020); and the treatment of groups and their structure as hypergraphs has recently been developed in Strohmaier (2020).
20 One might also model structures by means of arbitrary objects along the lines of Fine (1998, 2000, 2017). Instances of a structure would then be obtained by specifying values for the arbitrary objects.
Consider, for example, a traditional nuclear family consisting, at a given time, of two parents, John and Mary, and their single daughter Sue. Its structure, with some simplification, could then be represented by the following graph:

\[
\begin{array}{c}
\text{John} \\
\text{Mary} \\
\text{Sue}
\end{array}
\]

where the upper left node is for the father, the upper right node for the mother and the bottom node for the child and where M represents the property of being male, F the property of being female, S the relation *spouse of* and C the relation *child of*, holding between the child and his or her parent.

We may obtain an instance of the structure by assigning appropriate individuals to the nodes. Thus given that John is the husband of Mary and that Sue is their only daughter, we may obtain an instance of the structure by assigning John to the father node, Mary to the wife node and Sue to the child node. This instance of the structure may then itself be represented by the following relational graph:

\[
\begin{array}{c}
\text{John} \\
\text{Mary} \\
\text{Sue}
\end{array}
\]

in which the given individuals replace the designated nodes.

The above model for representing groups and their structure allows for considerable amplification. Suppose, for example, that one wished to allow for a family with a single parent. Then rather than regarding it as having a different structure from a traditional two-parent family, we can suppose that one of the parent nodes takes a null value, as in:

\[
\begin{array}{c}
\text{John} \\
\text{F} \\
\text{Sue}
\end{array}
\]

Or again, one might wish to allow for a family to have two fathers, let us say. In this case, we could retain the same structure while allowing a node to take a plurality of values, as in:

\[
\begin{array}{c}
\text{Bill, John} \\
\text{Mary} \\
\text{Sue}
\end{array}
\]

It seems to me that the structure of social groups and institutions is of enormous interest and importance. It provides us with a framework by which the data concerning groups may be organized (as in a relational database); it provides a natural and convenient means by which groups and subgroups can be classified; and, most importantly, it provides us with a general basis upon which we might theorize about their behavior, somewhat along the lines of the causal models developed by Pearl (2009) and others.

However, the question on which I now wish to focus is: how is it that a group has a structure? What kind of object must it be if it is to be capable of having a well-defined macroscopic structure, say, and not be just an amorphous aggregate of particles?

The theory of embodiment yields a straightforward answer to this question, which does not appear to be readily available under alternative views. For a relational structure may be associated with each rigid embodiment and so, given that a social group, is a variable embodiment that is manifested over time by various rigid embodiments, we can take its structure at any time to be the structure of the rigid embodiment at that time.

On the face of it, this might appear to be an unpromising view. For a relational embodiment simply involves one relation. But a structure will involve a network of different relations. And so how can we account for a multiplicity of relations and the different ways in which they might be linked by means of a single relation?

The answer lies in the structure of the relation, for a relation may itself be the product of other relations. Consider the example above, which involves the properties of being male and female, the spousal relation...
and the child-of relation. We may now construct a new relation \( R \) that holds of three individuals \( x \), \( y \), and \( z \) when \( x \) is male, \( y \) is female, \( z \) is female, \( x \) is the spouse of \( y \), \( z \) is the child of parent of \( z \) and \( z \) is the child of \( y \). We may then take the above family to be John, Mary and Sue in the relation of \( R \). Thus the various ‘conjuncts’ in the relation will correspond to the various links in the graph; and similarly for more complex cases.

The above application of the theory of embodiment is not only able to explain how a social group has structure but also why the structure is intrinsic to the group. There are two main ways in which this might be so. In the first place, the structure is internal to the group. For the group appears to be a whole whose component elements are related, within the whole, via the various structural links. But this follows on our view from the fact that rigid embodiments are themselves such structured wholes. In the second place, the structure is essential to the structure. It is essential to most groups (though not, as we have seen, all) that they have a particular structure or a particular kind of structure. It is essential to a family, for example, that it be composed of a parent or parents and their various children. But again, this follows on our view from the fact that rigid embodiments are essentially structured in the way they are and the fact that variable embodiments are essentially manifested in the way they are.

Thus if the structure of the manifestations is subject to certain constraints then these constraints will be essential to the variable embodiment.

I should add that we can also account for the hierarchical character of structure. For the individuals that are structured may themselves be rigid embodiments and so they too may have structure. The nodes, fractal-like, can give rise to further relational graphs.

Of course, these facts about structure are also true of most material things—chairs, tables, atoms, molecules etc.; and they might be explained in a similar way. The special character of social groups lies not in the fact of linkage but in the nature of the links. What normally accounts for the structural unity of an ordinary material object is some kind of physical cohesion. But what normally accounts for the unity of a social group is not physical cohesion but social cohesion; and what, to a large extent, accounts for social cohesion is the self-reflexive character of the group. Like a Leibnizian monad, the group itself is mirrored in the minds of its members, and it is the shared thought—that this is our association, our congregation, our nation—that, as much as anything, holds the group and its members together.\(^{21}\)

**Competing Interests**
The author has no competing interests to declare.

**References**


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Footnote 21: Greenwood (2003: §3) and Simmel (1908: 338) give expression to a similar line of thought, although it is not altogether clear to me how seriously they take on board the self-reflexive character of the group.


