

# The Individualism-Holism Debate on Intertheoretic Reduction and the Argument from Multiple Realization

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The argument from multiple realization is currently considered *the* argument against intertheoretic reduction. Both Little and Kincaid have applied the argument to the individualism-holism debate in support of the antireductionist holist position. The author shows that the tenability of the argument, as applied to the individualism-holism debate, hinges on the descriptive constraints imposed on the individualist position. On a plausible formulation of the individualist position, the argument does not establish that the intertheoretic reduction of social theories is highly unlikely. Nonetheless, the reductive project may run into other potential obstacles. For this reason, it is concluded that the prospect of intertheoretic reduction is uncertain rather than unlikely.

**Keywords:** *argument from multiple realization; intertheoretic reduction; reductionism; individualism; holism*

One of the long-standing debates in the philosophy of social science takes place between methodological holists and individualists. There are many kinds of holists and individualists and, therefore, different versions of the debate. One version is concerned with the question of intertheoretic reduction. Is it possible to reduce theories containing social predicates to theories stated in terms of individuals and their properties only? The holist says yes; the individualist says no. Independently, Little (1991) and Kincaid (1995, 1996) have recently proposed to defend the holist side in this dispute by appeal to the argument from multiple realization. The argument is currently con-

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sidered *the* argument against intertheoretic reduction.<sup>1</sup> It originates from the philosophy of mind, where Putnam and Fodor introduced it to show that theories containing psychological predicates cannot be reduced to theories formulated in purely physical terms (e.g., Putnam 1975; Fodor 1965, 1968, 1995). However, the structure of the argument is easy to generalize, so both Little and Kincaid's idea to apply it to the individualism-holism debate is a good one.<sup>2</sup> In different ways, they use this strategy to argue that social predicates, like psychological predicates, are irreducible to individualist descriptions. Little applies the argument by likening social phenomena to functional systems, while Kincaid compares social phenomena to functional states. Each claims that social phenomena, thus conceived, are likely to be multiply realized, this rendering reduction highly unlikely. They both appear to make a strong case for antireductionism, and so far neither Little's nor Kincaid's use of the argument from multiple realization has been challenged. Their application of the argument, therefore, appears to fit in well with the general view of the multiple realizability argument as *the* argument against intertheoretic reduction.

In the following, I will show how the tenability of the argument from multiple realization, as applied to the individualism-holism debate, hinges on the descriptive constraints imposed on the individualist position. I will argue that on a plausible formulation of the individualist position, neither Little nor Kincaid succeeds, by use of the multiple realization argument, to establish that the intertheoretic reduction of social theories is highly unlikely. Nonetheless, the examination of the argument points to other potential obstacles to the reductive project, which I will briefly discuss. Thus, my rejection of Little and Kincaid's use of the argument from multiple realization does not vindicate the individualist position of reduction. Instead, it shows that the prospect of intertheoretic reduction is uncertain rather than unlikely.

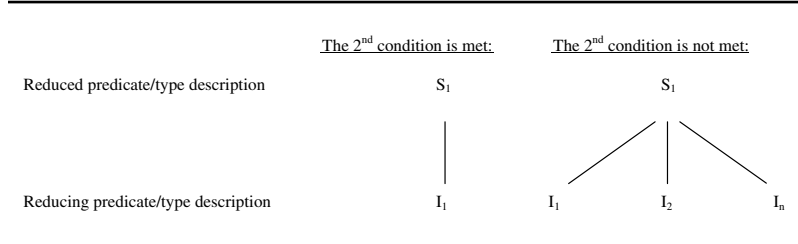
#### THE INDIVIDUALISM-HOLISM DEBATE ON INTERTHEORETIC REDUCTION AND THE ARGUMENT FROM MULTIPLE REALIZATION

Little and Kincaid are concerned with the individualism-holism debate as phrased in terms of intertheoretic reduction. Hence, they are interested in the dispute between holists, who hold that social theories cannot generally be reduced to individualist theories, and indi-

vidualists, who think that theory reduction is always possible. In the following, I will first specify the difference between social/holist and individualist theories. Then, I will introduce the model of intertheoretic reduction, which Little and Kincaid rely on, and on this basis outline their conception of the disagreement between the holist and individualist. Finally, I will briefly lay out the general structure of the argument from multiple realization. This done, the detailed examination of Little's and Kincaid's applications of the argument may begin.

A theory is social/holist insofar as it contains social predicates, that is, predicates that refer to social entities, collectives, or phenomena—I will use these expressions interchangeably.<sup>3</sup> The class of social predicates is typically defined by way of examples. Paradigmatic examples are bureaucracies, revolutions, nations, organizations, clubs, schools, and prisons. A theory is individualist insofar as it refers to individuals and their properties only. The question is, however, what this means. Kincaid (1995) suggests that the individualist be allowed to refer to individuals in terms of their actions, the “relations between individuals, individual psychological states, beliefs etc.” (p. 500). Little operates with a narrower conception that bans any reference to relations among individuals. Kincaid (1996) claims the narrow interpretation is “an implausible doctrine” (p. 146), and I agree. It seems that some relations, at least in the form of interaction, are at least typical if not indispensable among individuals constituting a social entity: interaction takes place among the officeholders in a bureaucracy, between pupil and teacher in a school, and so on. Consequently, it also seems *prima facie* implausible that social theories that refer to such social phenomena should be reducible to individualist theories, if the latter were banned from referring to any relations among the individuals who constitute the social phenomena. Furthermore, this broader construction of the individualist position is the one adopted by most methodological individualists, and it is the position associated with some of its most well-known protagonists: Weber (1978), Popper (1961), and Watkins (1995).<sup>4</sup> For these reasons, I will follow Kincaid in assuming that the individualist is allowed to refer to relations between individuals.

Following Little and Kincaid, the disagreement between holists and individualists may be specified in relation to the classic Nagel-Quine model of theory reduction. According to this model, three conditions must be fulfilled for successful reduction of one theory to another.<sup>5,6</sup> (1) A reduction function must be specified that represents



**Figure 1: The Second Condition of Reduction**

NOTE: According to the second condition, a reduction function must be specified in which the reduced-level predicates are associated one to one with type descriptions at the reducing level. Hence, the condition is met when the reduced-level predicate can be linked with a single reducing-level predicate; it fails when the reduced-level predicate must be linked with several reducing-level predicates.

the synthetic identity of all entities of the reduced theory with entities or groups of entities of the reducing theory.<sup>7,8</sup> (2) Furthermore, a reduction function must be specified in which the reduced-level predicates, also called type descriptions, are associated one to one with type descriptions at the reducing level, so that the reduced-level predicates apply always and only when the corresponding reducing-level predicates apply (see Figure 1). I will refer to attempts to match the reduced predicates with single reducing ones as attempts to advance reductive definitions of the higher level predicates.<sup>9</sup> (3) Finally, it must be possible to derive the reduced theory from the reducing theory conjoined with the above two reductive functions. All three requirements must be met in order for theory reduction to take place. Individualists claim that these conditions can be met, whereas holists hold that at least one condition cannot be met.

Little and Kincaid concur that the individualist can meet the first condition: social phenomena are synthetically identical to individuals or sums of individuals. As Kincaid (1995) puts it, "Individuals exhaust the social world in that every entity in the social realm is either an individual or a sum of such individuals" (p. 499). They conceive of the relationship between the social and individual level as one of supervenience: social phenomena supervene on individual actions, beliefs, and so forth, so all distinctions and variations among social phenomena depend on distinctions and variations at the individual level (Little 1991, 194).<sup>10</sup> In sum, it is not the existence of irreducible social entities that stands in the way of theory reduction. Instead, Little and Kincaid claim, the reduction of social theories to individualist ones fails because the second condition cannot be met. They support this assertion by appeal to the argument from multiple

realization. The argument establishes, they claim, that social predicates will have to be linked not to a single but to multiple descriptions at the individualist level. They do not pay much attention to the third condition, probably because the failure to satisfy the second condition is sufficient to undermine theory reduction. In any event, it seems that this condition cannot be met either due to the inability to meet the second condition: since social predicates are irreducible, explanations at the individual level will be unable to capture the regularities at the social level.

The argument from multiple realization aims to establish that the second condition of reduction cannot be satisfied. Based on Putnam's and Fodor's writings, it is possible to distinguish between two versions of the argument. The first version focuses on the multiple realization of functional systems. Functional systems are "systems of states in certain causal interrelations" (Putnam 1975, 414).<sup>11</sup> Putnam (1975) proposes that two particular or token (functional) systems are of the same type in case "*there is a correspondence between the states of one and the states of the other that preserves functional relations*" (p. 291). That is, token functional systems are of the same type if they are similar with respect to their functional organization. In this sense, functional systems are, to borrow Fodor's (1995) expression, type identified by reference to their functional organization (p. 693). Because functional systems qualify as being of the same type solely in virtue of their identical functional organization, they may also have multiple types of physical realizations without this affecting their identity conditions. Putnam uses the example of computers: computers may be physically realized by electrical components or cogs and wheels, yet they still qualify as the same type of functional system if they go through the same states of computation (Putnam 1975, 292-93). Insofar as functional systems have multiple types of physical realizations, each corresponding functional system predicate will have to be paired with multiple physical type descriptions, referring to the multiple physical realizations. As a result, functional system predicates are likely to evade the second condition of reduction: it will not be possible to set up reduction functions, which ensure that single reducing-level predicates apply always and only when the reduced-level predicates apply. The second version of the argument focuses on the functional states, which compose functional systems. The emphasis is placed on how states qua functional states are type identified by reference to their causal relations to other states. That is, two particular states are of the same type insofar as they occupy the same causal role

within a functional system. Consequently, functional states may also have multiple physical realizations: whatever meets the causal functional role specification, that is, is caused and causes in the right way, realizes the functional state. For example, the same type of functional state in a computer may be physically realized by different types of wire and relay (Putnam 1975, 293). As a result of multiple realization, the corresponding functional state predicates will have to be paired with multiple physical descriptions, which refer to the multiple physical realizations. So, given multiple realization, functional state predicates cannot meet the second condition of reduction, and hence they are irreducible.

Little and Kincaid each appeal to a different version of the argument from multiple realization to show that the second condition of reduction cannot be satisfied. Little relies on the functional system version of the argument, whereas Kincaid applies its functional state version. Their respective uses of the argument may now be critically examined. In my discussion, I will grant the account of reduction outlined above, though it should be emphasized that the Nagel-Quine model is far from uncontroversial.<sup>12</sup> Also, I will not challenge the ability of the argument from multiple realization to undermine reduction in domains other than the social sciences.<sup>13</sup> My sole focus will be on its applicability to the debate about reduction in the philosophy of social science. As stated above, I will argue that on the plausible construction of the individualist position, the argument fails to support holist antireductionism.

#### SOCIAL PHENOMENA CONCEIVED AS MULTIPLE REALIZABLE SYSTEMS

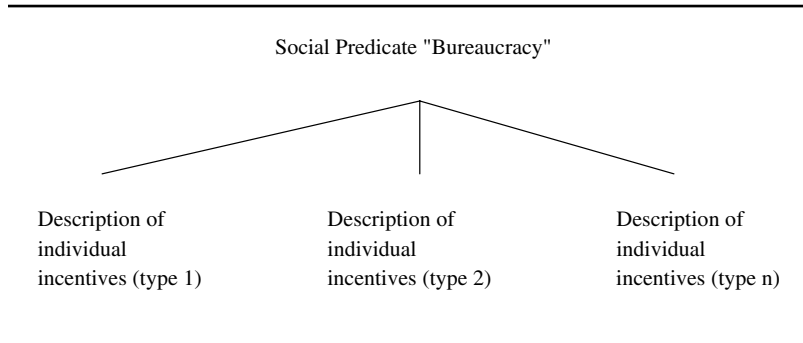
Little's suggestion is to compare social phenomena to functional systems. Social phenomena should be analyzed into the causal roles/functions individuals perform in relation to each other. More precisely, they should be described as systems of interconnected roles performed by individuals. As an example of functionally defined social phenomenon, Little (1991) offers a bureaucracy. "Suppose," he writes,

that we conceive of a "bureaucracy" as a hierarchical social organization in which officeholders perform tasks in accord with plans established by a centralized decisionmaker. This is a functional description

in that it characterizes individual behavior in terms of functions defined within the organization. (P. 194)

Little only provides this single example, but it seems easy enough to think of other ones. For instance, a school may be analyzed into the teacher and pupil role, just as a stamp collection may be analyzed into members' functioning as stamp-exchange partners in relation to each other, and so on. Hence, Little may reasonably be granted that at least some social phenomena are comparable to functional systems and, as such, type identifiable by reference to their functional organization.

Little (1991) continues by proposing that social phenomena qua functional systems are likely to have multiple realizations at the level of the individual. He mentions two ways in which a bureaucracy is multiply realized. First of all, infinitely many different sets of particular individuals may realize a given bureaucracy. Furthermore, and more significant, alternative types of incentives, say sticks over carrots or carrots over sticks, may be used to make individuals perform their tasks. For this reason, a bureaucracy as a type has multiple realizations at the individual level insofar as different types of incentives may induce individuals to perform their roles (p. 194). On this basis, Little concludes that social predicates in general cannot be reduced to individual-level descriptions. Notice, however, that this conclusion only follows from the second kind of multiple realization. The first kind of multiple realization, in which it is pointed out that a particular bureaucracy may be realized by multiple particular sets of individuals, only shows that "bureaucracy" may apply to many different particular sets of individuals. To undermine the possibility of reductive definitions, it must further be shown that the individualist will be unable to formulate a single individualist type description that captures what all the particular sets of individuals, realizing the bureaucracy, have in common. The second kind of multiple realization aims to show this. Here, it is claimed that a bureaucracy as a type will have multiple types of realizations at the individual level in the form of multiple types of incentives for individuals to perform their roles (see Figure 2). As such, the individualist will need an individualist description of each incentive type, and consequently, the aspiration to provide a single individualist type description of "bureaucracy" is doomed. I assume that Little would agree with these considerations and that this is why he says the second kind of multiple realization is more significant. In any event, it is only this form of multiple realization that threatens the possibility of meeting the second condition of



**Figure 2: Little's Example of the Significant Kind of Multiple Realization**

NOTE: According to Little (1991), the social predicate "bureaucracy" will have to be paired with multiple descriptions of different types of incentives at the individual level.

reduction and, consequently, threatens the prospect of intertheoretic reduction.

The individualist can reply to Little's argument in several ways. For one, he may challenge the second kind of multiple realization by claiming that it is not true that he will need multiple descriptions of the different types of incentives individuals have to perform their roles. Rather, these different types of incentives may be captured in a more general, though still individualist, single type description. If that were possible, at least in this case, there would no longer be any problems in carrying out the reduction. Alternatively, the individualist may question the assumption that the description of the incentives to perform roles is the right individualist focus. The aim of individualist type descriptions is, to repeat, to ensure that they apply in all cases where the corresponding social predicates apply. Yet as long as the individualist stays within his domain of description, that is, provides individualist descriptions in terms of individual beliefs, actions, and so forth, he may of course focus on whatever individual-level features he pleases. In the present case, therefore, the individualist could insist that instead of describing the realizing individuals in terms of their role-performance incentives, he would rather refer to them in terms of, say, their understanding of themselves as being part of a work unit. He could then hope that all particular realizations of bureaucracies would constitute a single type from this perspective, in which case only a single individualist description would be needed. More generally, the individualist may try both these strategies in relation to all specific examples of irreducible social predicates.

A more powerful response, however, would be to attack not only Little's specific counterexample, that is, the bureaucracy case, but the argument as applied to any social predicate. To this end, the individualist should, I think, question the general descriptive constraints imposed on his position by the argument. He may do this by asking why he is not allowed to describe individuals in terms of role predicates. The argument assumes that the holist alone can use role predicates and on this basis describe social phenomena as systems of interconnected roles. Imagine if the individualist were allowed to use descriptions of social phenomena as systems of interconnected roles. Then he could simply employ these descriptions as reductive definitions and as such pair them up, on a one-to-one basis, with their corresponding social predicates. For example, the individualist could say that "bureaucracy" applies only and always when the description "individuals are hierarchically organized so that officeholders perform tasks in accord with plans established by a centralized decision maker" applies. There is a good basis for pushing an argument along these lines: social phenomena are said by the holist to be analyzable in terms of roles performed by individuals. It is unclear why the individualist, whose domain is the description of individuals, should have a problem with the description of individuals in terms of their roles.

Little has a ready response to this individualist challenge in the sense that his narrow definition of the individualist position excludes the individualist use of role predicates. The explication of a role predicate necessarily involves some reference to relations between the role occupant and other individuals because the performance of a role typically requires some form of interaction with other individuals. For instance, the teacher role can only be explicated in relation to the pupil role since teaching is always teaching somebody, that is, a pupil. Little construes the individualist position as excluding any reference to relations, and for this reason, the explication of role predicates by reference to relations between individuals makes them unfit for individualist use. Yet, as I stated above, a more plausible individualist position, like the one construed by Kincaid, allows the individualist reference to relations. So, it must be examined whether there is any reason why the more inclusive individualist position cannot describe individuals in terms of role predicates.

There is a standard argument in the literature on the individualist/holist debate that attempts to defend the claim that role predicates are unavailable to the individualist position both narrowly and broadly

construed. Little (1991, 185) refers to it and so does Kincaid (1995, 502).<sup>14</sup> The basic idea is that the use of role predicates necessitates the reference to social phenomena in terms of social predicates. Hence, according to this argument, the use of role predicates commits the individualist to more than he wants to endorse. Kincaid's rendition of the argument is most elaborate. He writes,

Many social role predicates are apparently unavailable to the reductionist, for they have an essential social content. Predicates such as teacher, employee, inmate, soldier, citizen, etc. do refer to individuals, but it is reasonable to believe they implicitly involve social terminology as well. To have true statements employing these role predicates, we must also have true statements about social entities, for there are presumably no inmates without prisons, a judicial system, laws and norms, and no teachers without schools, etc. Applying any of these role predicates seems to presuppose or entail a host of further facts about social institutions that give them meaning. Elimination of social predicates thus becomes quite unlikely. (Pp. 501-2)

The question is if this argument can be of much use to the holist. On a first reading, it seems that the individualist may agree that the use of role predicates presupposes true statements about social entities but deny that the reference to social entities necessitates the use of social predicates. Instead, he may insist on providing true statements about social entities in terms of his own individualist descriptions. Given this reading of the argument, the holist does not have a case against reductionism. So presumably, the argument should be taken to presuppose that the individualist is not able to refer to social entities by way of individualist descriptions. Hence, he will have to use the corresponding social predicates. This would of course render role predicates unfit for individualist use. But then this argument rests on the premise that social predicates cannot be reduced to individual-level descriptions, which is the issue under discussion. To grant the holist this premise would be tantamount to granting the holist the position he needs to establish. Thus, on either interpretation, the above considerations, as they stand, constitute no argument against the individualist use of role predicates.

Moreover, the individualist may point out that the argument is unavailable to the holist in the present context. The argument states that the explication of role predicates involves reference to social phenomena. Consequently, social predicates will also have to figure in definitions of role predicates. This point seems to conflict with the

holist proposal that social phenomena are type identified in terms of their functional organization insofar as this may reasonably be taken to imply that social predicates are definable in terms of descriptions of social phenomena as systems of interconnected roles performed by individuals. The problem is that the holist, who maintains that role predicates can be used to define social predicates, cannot also hold that social predicates are involved in definitions of role predicates. This would land him in circularity. Role predicates cannot at one and the same time be used to define social predicates and definitionally presuppose social predicates. Hence, the suggested argument is not only inefficient as it stands, it even seems to be incompatible with the holist proposal to define social predicates by reference to their functional organization. For these reasons, the argument should be rejected.

There seems to be no obvious other way to justify a holist monopoly on role predicates. At any rate, the burden of proving otherwise is on the holist since *prima facie* the individualist has no problems with role predicates. As noted above, without the descriptive constraint imposed on the individualist that he cannot use role predicates, the argument from multiple realization of systems fails when applied to social phenomena. It fails because the individualist may refuse to describe social phenomena in terms of the individualist-level features (such as individual incentives), which allegedly multiply realize the same functional organization. Moreover, he or she may propose these functional descriptions as his reductive definitions of the corresponding social predicates. What started out as a holist antireductionist argument turned out pointing to a strategy for the generation of individualist reductive definitions.

The question is, however, whether the descriptive focus on social phenomena as systems of interconnected roles ensures the possibility of single reductive definitions. One worry is that the same type of social phenomenon may be compatible with different types of systems of interconnected roles. If so, social predicates will have to be reductively defined in terms of multiple descriptions of these different systems of interconnected roles. But how likely is this situation to occur? The individualist can try to avoid it by keeping his descriptions as general as possible, though still within the individualist range of description. The less detailed the individualist descriptions, the more likely they are to capture, in a single shot, all the possible functional variations of a given type of social phenomenon. This means he should always reject counterexamples that invoke individualist type

descriptions that are more detailed than necessary.<sup>15</sup> An individualist type description is too detailed, we may say, whenever a more general individualist description is available that would still ensure that the individualist description applies in all the situations in which the social predicate applies. A response along these lines was already suggested in relation to the claim that multiple types of incentives may realize a bureaucracy as a type. There, it was mentioned that the individualist could try to provide a more general, yet still individualist, description of what the different types of role-performance incentives might have in common. In any event, if the individualist bears these important tactics in mind, there seems to be a good chance that he may succeed in providing reductive definitions such that only single descriptions of social phenomena as systems of interconnected roles will be compatible with the same social predicate. Still, there is no guarantee: the issue will have to be decided case by case.

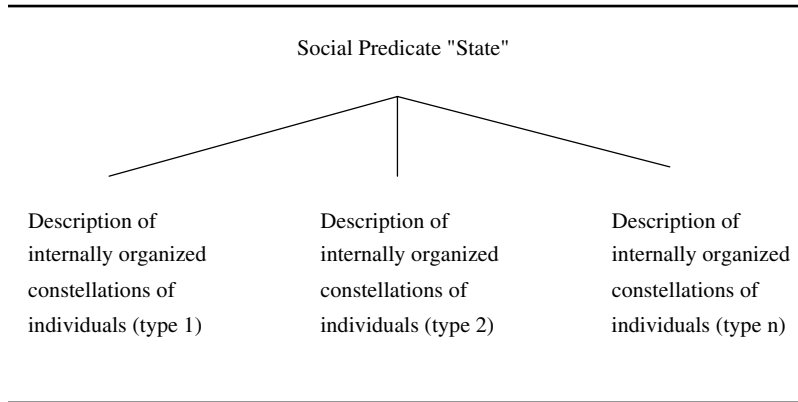
In conclusion, Little's version of the argument from multiple realization, on a plausible construal of the individualist position, does not vindicate the holist position and thereby establish the irreducibility of social predicates. Still, this does not mean that the individualist can be sure that the problems with the second condition of reduction are over.

#### SOCIAL PHENOMENA CONCEIVED AS MULTIPLE REALIZABLE STATES

Whereas Little compares social entities to functional systems, Kincaid (1995) compares them to the functional states that compose such systems. He proposes that

if necessary and sufficient conditions can be given for these social predicates, it will generally be by means of their functional [role] vis-à-vis other social institutions and events—much as psychological states might be defined in terms of their functional role within a cognitive system. (P. 500)

Kincaid provides one example of what he means by a social phenomenon's functional role. The State, he writes, is "at least in part, the entity which has more control over organized violence than any other institution" (Kincaid 1996, 164). In light of this example, it seems that Kincaid takes a social phenomena's role vis-à-vis other social institutions in a purely comparative sense: the State has more control over



**Figure 3: Kincaid's Example of Multiple Realization**

NOTE: According to Kincaid (1996), the social predicate "State" will have to be paired with multiple descriptions of different types of internally organized constellations of individuals.

organized violence than any other social institution (I capitalize *State* to distinguish it from a functional state). Moreover, he may reasonably be ascribed the view that a social entity's casual/functional role refers to what it does, its actions, as in this case the State's controlling organized violence. Kincaid continues by proposing that compositions or constellations of individuals realize social phenomena. More precisely, he claims that multiple types of internally organized constellations of individuals may realize the same casual/functional role and thereby realize the same type of social phenomenon. This is again illustrated by States, which "are made from widely varying [types of] organizational structures" (Kincaid 1996, 164). As a result, the same social predicate will have to be paired with multiple descriptions of different types of configurations of individuals—the second condition of reduction fails (see Figure 3).

Kincaid (1995) motivates his view that social phenomena may be defined by reference to their functional roles by pointing out that "particular institutions (tokens) persist through significant structural changes in the configurations realizing them" (p. 500). He takes this to show, I think, that if an institution persists through changes in its internal organization, then its internal organization is also irrelevant to its being an institution of a certain type. This observation indicates that social phenomena cannot be type identified by reference to their internal structures. It paves the way for Kincaid's proposal that social phenomena are type identified by reference to their functional roles in the larger social system. As such, the corresponding social predicates

should also be defined by reference to their functional roles, not their internal organizations. The problem with this view is that it is equally possible and quite easy to think of examples of institutions that have persisted through significant changes in their functional roles. Think, for instance, about how the State's role has changed historically in European countries in relation to religious institutions, when State and church were separated, or in relation to educational institutions when these were nationalized. Still, Kincaid may reasonably be granted that at least some social phenomena may be characterized by reference to their functional roles. From this perspective, Kincaid's functional definitions of all social predicates does not seem very promising. Notice, by the way, that Kincaid's proposal is the opposite of Little's, whose idea is to analyze social phenomena in terms of their internal functional organizations, not their external functions. Probably, the two positions are best viewed as complementary: sometimes one, sometimes the other is a more appropriate way to analyze social phenomena.

To hold on to a reductionist position, the individualist must find a way to rebut the argument. As in dealing with Little's argument, I think the individualist should try to challenge the descriptive constraints imposed on his position. In the present case, he should question the holist's monopoly on the description of social phenomena's functional roles. As Kincaid's argument is laid out, it is assumed that the holist alone describes the invariant functional role of a social phenomenon. By contrast, the individualist is assigned the task of describing the variant or multiple types of internally organized constellations of individuals who may fill in these functional roles. Now, the individualist may perfectly well state that he wants to abandon the descriptive focus on social phenomena's internal organizations. Instead, he may insist on describing social phenomena's invariant functional roles in individualist terms. Moreover, he may even try to formulate his reductive definitions of social predicates by reference to social phenomena's functional roles: a social predicate applies, he could say, whenever a constellation of individuals (whatever their internal organizations) fulfills a certain causal/functional role as described in individualist terms. If the individualist were able to successfully push this line of argument, the argument from multiple realization would become irrelevant to the prospect of reduction. The argument only shows that if the individualist provides reductive definitions in terms of single descriptions of social phenomena's internal organizations, then multiple realization will undermine this effort.

The argument does not address, and consequently has no bearing on, the possibility of reductive definition in terms of individualist descriptions of social phenomena's causal/functional roles. Hence, this strategy would save the individualist's position from Kincaid's criticism.

So, I will examine whether it is reasonable to claim that the individualist can describe social phenomena's functional roles in individualist terms. So far, a social phenomenon's functional role has been identified with what it does. Something more must now be said about the basis for the ascription of actions to social wholes. In a classic article, Copp (1979) suggests that "under certain circumstances, the action of a person or the actions of a number of persons are 'the basis for attributing' an action to a collective" (p. 177). This idea may be illustrated in relation to a steel union that engages in negotiations about a potential increase in salary. Here, the actions of negotiation carried out by representatives of the union are the basis for attributing the action of negotiating to the union itself. Similarly, the action of scoring a goal by a football player is the basis for attributing the action of scoring to the team. The fact that actions ascribed to collectives, let's call them group actions, are attributed on the basis of individual action may in more modern terminology be formulated as the point that group actions supervene on individual actions.<sup>16</sup> Since Kincaid (1995) holds that "the social supervenes upon the individual," he would probably prefer this latter formulation (p. 500). In any event, he clearly agrees that individual action always forms the basis for action ascription to social entities (see, for example, Kincaid 1996, 155-56). The point is now that insofar as group actions are always attributed on the basis of individual actions, it will always be possible for the individualist to describe the particular group actions in terms of the constituent individual action(s). When this is done, the individualist may also try to provide reductive definitions of social predicates in terms of their functional roles, spelled out in terms of individual action. For example, the individualist could suggest that "controlling organized violence" may be rendered as the single individualist description "appropriate individuals may order the use or restraint of organized violence." Consequently, he may suggest that "State" may, among other things, be reductively defined as "a constellation of individuals (whatever their internal organization) among which appropriate individuals may order the use or restraint of organized violence and this to a higher degree than any other individuals who are part of another constellation of individuals." Insofar as the individualist can provide

reductive definitions of social predicates by focusing on social phenomena's functional roles, he can completely avoid any description of social phenomena's internal organizations. For this reason, he is untouched by the fact that different types of internal organizations may multiply realize a social phenomenon—the crucial point of Kincaid's argument from multiple realization. Thus, the argument from multiple realization of functional states fails to block the reducibility of social predicates and consequently does not vindicate the holist position.

Perhaps the failure of the argument could be avoided by specifying a social phenomenon's functional role differently. The answer to this proposal seems to be in the negative. The reason is that however social phenomena's functional roles are specified, the individualist may always apply the same approach as above. The individualist may always refuse to describe the variant types of internal organization of realizing constellations of individuals and opt instead for the description of social phenomena's alleged invariant functional roles. It will always be possible for the individualist to capture social phenomena's functional roles as specified at the social level in terms of descriptions at the individual level because, to use Kincaid's expression, the social supervenes on the individual. Therefore, the individualist will always be able to evade the argument from multiple realization by avoiding any mention of the multiple ways in which constellations of "realizing" individuals may be internally organized. In this fashion, the argument may always, irrespective of the specification of a social phenomenon's functional role, be rendered irrelevant to the question of whether the individualist will be able to provide his single reductive definitions. For this reason, Kincaid's use of the argument from multiple realization to vindicate the holist position may be rejected in general.

To return to the specification of social phenomena's functional roles as their actions, the question should now be examined whether the individualist's attempt to formulate reductive definitions in terms of individualist descriptions of social phenomena's functional roles is likely to succeed. The worry is the following: group actions are attributed to social entities on the basis of individual action. However, many different types of individual actions may form the basis for the attribution of an action to a group. Consequently, when the holist proposes that a social phenomenon is realized insofar as certain group actions take place, the individualist will need to describe all the types

of individual actions that may form the basis for the ascription of each group action. That is, the individualist will need several descriptions of action types at the individual level and will therefore not be able to meet the second condition of reduction. How likely is this situation to occur? To provide a more systematic answer to this question, group actions may be categorized into what I, for lack of better terminology, will call directly and indirectly *ascribable group actions*. I do not want to claim that this is always the best way to distinguish between different types of actions at the group level, but at least for present purposes, it seems convenient because it helps to get an overview of the prospect of reduction.<sup>17</sup>

A directly ascribable group action may be characterized as an action of type  $x$  ascribed to a group in virtue of one, several, or all of the group members carrying out the same type of action. The action performed by individual(s) is simply directly ascribed to the group. As an illustration, take the example of a gang member of the Blue Crocodile Gang shooting a policeman. Even though only a single gang member did the shooting, the action may nonetheless be ascribed to the gang; that is, it may be said that the Blue Crocodile Gang shot a policeman. In a similar fashion, the action of marching performed by all the soldiers individually may also be ascribed to their division as a whole: the division is marching. Hence, in the case of directly ascribable group actions, their description may simply be matched up with single descriptions of the very same actions ascribed to individuals. For that reason, descriptions of directly ascribable group actions are unlikely to cause any problems with respect to their reduction to individual-level action descriptions. When social predicates are defined in terms of directly ascribable group actions, it will not be a problem for the individualist to provide a corresponding definition in terms of individual action.

In contrast to directly ascribable group actions, an indirectly ascribable group action of type  $x$  is ascribed to a group in virtue of one, several, or all of the group members carrying out a different type or types of action. Therefore, the action ascribed to the individual(s) cannot be directly ascribed to the group and vice versa. As an example of indirectly ascribable group action, the action of a nation entering a treaty may be mentioned. In this case, the action of entering a treaty is not ascribed to the nation in virtue of certain individuals carrying out an entering action. Rather, the action of entering a treaty is attributed on the basis of a different type of action, say, a qualified individual

signing the appropriate document. In contrast to descriptions of directly ascribable group actions, it may be claimed, descriptions of indirectly ascribable group actions resist reduction. That is, it is easy to imagine that the act of entering into a treaty may occur in other ways than signing the appropriate document, say, also by declaring publicly on television, by both signing and declaring it on television, or by signing and declaring in the parliament. In short, many different kinds of individual actions and action combinations may form the basis for attributing a given type of indirectly ascribable action to a group. Consequently, descriptions of indirectly ascribable group action must be paired with multiple descriptions of individual actions and action combinations. Hence, when social predicates are defined in terms of indirectly ascribable group actions, the individualist is unlikely to be able to provide single corresponding descriptions in terms of individual action.

As far as I can see, the only way to counter this objection is to argue that despite appearances to the contrary, it is nonetheless possible to provide a single very general individualist description of indirectly ascribable group actions. Thus, it might, for instance, be suggested that the social act of entering the treaty may be reformulated at the individual level as follows: "the appropriate individual/individuals must carry out an action, which signifies that the conventions set down in the treaty are to be put into force." This definition is admittedly extremely general. Nonetheless, it may still refer to the appropriate action tokens while satisfactorily summarizing the action descriptions of "signing the treaty," "declaring it publicly on television," "signing it and declaring it publicly on television," and "signing it and declaring it in the parliament" into a single individualist description. Hence, it is far from clear that indirectly ascribable group actions create a problem for the individualist project of intertheoretic reduction. Nor is the scope of the problem clear; that is, it is unclear how many group actions there are of this indirectly ascribable type. Nonetheless, if there are going to be problems for the individualist use of functional role definitions, it seems they are to be located here. More generally, it may be concluded that the individualist may always prevent Kincaid's version of the argument from multiple realization to work as an antireductionist argument. Still, however, there may be problems meeting the second condition of reduction.

## CONCLUDING COMMENTS

In this article, I have criticized Little and Kincaid's suggestion that the application of the argument from multiple realization to the individualism-holism debate on intertheoretic reduction can be used to show that the reduction of social theories to individualist ones is highly unlikely. I suggested that the individualist may undermine both the functional system and the functional state versions of the argument from multiple realizability by resisting the descriptive constraints imposed on his position. This does not amount to a vindication of the individualist position, however, since there may be other potential obstacles meeting the second condition of reduction. Whether these obstacles can be overcome will have to be decided on a case-by-case basis. In this fashion, my discussion leaves the dispute on reduction open. If this conclusion is accepted, it suggests that the narrow focus on the second condition of reduction in the Nagel-Quine model is inadequate to resolving the debate.

I will point to two questions that might be considered in furthering the debate. First of all, what is the explanatory status of social theories if it is agreed that social entities supervene on individual actions, beliefs, and so forth? The explanatory capacities of theories are typically specified by reference to some notion of causality. However, insofar as social entities supervene on individual beliefs, actions, and so forth, it is unclear whether they still qualify as causally effective or whether their supervenience implies that all the causal work is done at the individual level. If supervenient social entities are shown to be causally ineffective, it seems that the holist's insistence on the irreducibility of social predicates has no interesting explanatory consequences. In this sense, the individualist position would be vindicated, and the debate in its present version could be abandoned as a purely verbal dispute.<sup>18</sup> On the other hand, if the view of supervenient social entities as causally effective were defensible, then the holist could try to argue that social theories containing social predicates are irreducible, since social predicates are needed to refer to causally effective supervenient social entities. Second, does the Nagel-Quine model constitute an acceptable account of theory reduction? As already noted, it is far from uncontroversial. There are other less demanding notions of reduction available, some of which do not require that the troublesome second condition be fulfilled. Consequently, the outcome of the debate may also to a large extent hinge on the notion of reduction adopted.

In sum, the standard argument against reduction, the argument from multiple realization, does not establish antireductionism within the social realm. Nonetheless, the individualist project to provide reductive definitions may still run into obstacles. The second condition of reduction is neither impossible nor guaranteed to be met. This suggests that the narrow focus on the second condition should be abandoned in favor of the examination of other questions relating to theory reduction.

### NOTES

1. In a recent article, Sober (1999) observes, "If there is now a received view as to why reductionism is wrong, it is the multiple realizability argument" (p. 542).

2. The argument has also been applied in philosophy of biology by Sober (1984) and Kitcher (1998).

3. As will become clear shortly, both Little and Kincaid hold that the holist and individualist agree that social entities are ontologically reducible, that is, nothing but sums of individuals.

4. Bhargava (1992) also notes that most methodological individualists allow reference to relations between individuals, or to relational properties, as he calls it: "Relational properties of individuals are as important as non-relational ones and most methodological individualists use them to explain social phenomena" (p. 41).

5. There are different interpretations of Nagel's (1998) and Quine's (1999) models. I will rely on Schaffner's (1967) and Fodor's (1995). Kincaid refers to Quine and Schaffner, whereas Little recommends the reading of Fodor.

6. These are the conditions of heterogeneous reduction. The other type of reduction, homogeneous reduction, need not concern us here.

7. The notion of a reduction function is taken from Schaffner (1967, 138-39), who bases himself on Quine's (1999, 502) notion of a proxy function. Roughly speaking, a reduction function is a recipe to "relate," as Schaffner puts it, "basic terms (and entities) of one theory . . . to the basic terms (and entities) of the other" (p. 138).

8. Schaffner disregards Quine's (1953) misgivings about the analytic-synthetic distinction, relying on the following as a paradigmatic example of a synthetic identity: "The morning star is the evening star" (Schaffner 1967, 143). I will not question the notion of synthetic identity in this article.

9. Fodor (1995) interprets Nagel as requiring this one-to-one mapping between reduced-level and reducing-level predicates (p. 695ff.); Little follows him in this respect. However, neither Quine's model nor Schaffner's model seems to require it. Even though Kincaid (1996) refers to Quine and Schaffner, he still adopts the one-to-one requirement. He demands that there must be "one-to-one mappings from social predicates to individual ones" (p. 149). Fodor's interpretation has been criticized for example by Richardson (1979). Furthermore, it should be noted that Fodor does not explain why the reduced-level predicates may not be linked up with a disjunction of type descriptions at the reducing level. Kim (1992) discusses this aspect of Fodor's view and tries to provide different reasons to that effect.

10. Needless to say, it is possible to characterize the supervenience relation in different ways—see, for example, Horgan (1993), Kim (1984), and Teller (1984). For present purposes, however, Little's rough characterization will do.

11. As background for my outline, I am drawing on Block (1980a, 1980b), Endicott (1989), Fodor (1965, 1968, 1995), Kim (1992), Putnam (1975, in particular the essays "Philosophy and Our Mental Life," "The Mental Life of Some Machines," and "The Nature of Mental States"), Rey (1997), and Richardson (1979).

12. Bickle (2001) provides a helpful overview of the debate over the proper account of intertheoretic reduction. He distinguishes two lines of criticism of Nagel's model. On one hand, some authors have attempted to amend the problematic aspects of Nagel's account, such as Schaffner (1967, 1999), Hooker (1981), and Bickle (1998b). On the other hand, other authors have rejected it and proposed completely alternative models of reduction, for example, Feyerabend (1962) and Suppes (1967).

13. For discussions of the problems relating to the argument from multiple realization in psychology, see for example Kim (1992), Bickle (1998a), and Zangwill (1992).

14. Little credits Lukes (1973), whereas Kincaid mainly credits Mandelbaum (1973) while mentioning Lukes (1973) and McCarthy (1975) as well. In the literature, the argument has mainly been discussed by reference to Mandelbaum's account, see for example James (1984), Quinton (1975), and Rosenberg (1995).

15. As Bechtel and Mundale (1999) point out, there seems to be a general tendency in the literature on multiple realization to forget this point.

16. Tuomela (1989, 1995) provides a more detailed account of the idea of group actions as supervenient on individual actions.

17. As background reading on group action, I am relying on Gruner (1976), Londrey (1978), Tuomela (1989, 1995), and Ware (1988).

18. For an interesting discussion of the explanatory status of social theories, which contain social predicates referring to supervenient social entities, see Sawyer (forthcoming).

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