The Critical Mass in Collective Action: A Micro-Social Theory

by Gerald Marwell and Pamela Oliver

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REVIEW ESSAY

Providing for the Common Good

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It is now axiomatic in social theory, if not in real life, that the provision of public goods is any social system usually entails a problem of collective action. Whether it is the provision of police protection, public television, a city water supply or a shared bridge in any social system usually entails a problem in real life, that the provision of public goods (and sometimes unsuccessfully) with these problems long before they captured the attention of social theorists. Historically, communities dealt successfully with these problems long before they captured the attention of social theorists. Communities successfully dealt with these problems long before they captured the attention of social theorists.

Garett Hardin's (1968) well known "tragedy of the commons" and Mancur Olson's (1965) path-breaking treatise on the "logic of collective action" placed which came to be referred to as social dilemmas, firmly on the agenda of social scientists and sometimes unsuccessfully) with these problems long before they captured the attention of social theorists.

The puzzle posed by Olson has been the quintessential to the publication of Olson's book that group size is negatively related to the probability of providing for the common good. That is, if it was suspected by Olson that the larger the group, the farther it would fall short of providing an optimal amount of the collective good (sans selective incentives). This proportion became known in the literature as the "group size effect" and it has been studied extensively (e.g., Hardin, 1982; Stroebe and Frey, 1982; Isaac and Walker, 1988; Yamagishi, 1995). In fact Marwell and Oliver propose that under certain conditions the larger the group, the more likely a critical mass will emerge which will provide for the common good as an empirical treatment of the problem of collective action (i.e., the social dilemma) in the provision of public goods "adheres to the high cost of providing them, relative to individuals or in some way, the group size argument in their chapter on the paradox of collective action and the complex socio-political reality of large-scale social movements (see also Oliver and Marwell, 1984). It falls squarely in between.

What is distinctive about the approach adopted by Marwell and Oliver is that they assume from the beginning that most of the time a "critical mass" is required for the provision of public goods. Figuring out how to operationalize this critical mass, rather than the critical mass, is the crux of their theoretical enterprise. While there is much to comment on with respect to the specific arguments presented by Marwell and Oliver we will chart a slightly different course in this review essay. Our main focus is the relationship of this book to current strains of sociological inquiry, not its internal logic, though we will comment first on a few of the specific theoretical contributions of the book.

On Production Functions

The most significant analytical contribution is the clear demonstration of the importance of the production function assumed to be operating in the provision of the public good. A public good, as Oliver and Marwell (1984) define it, is one that must be provided to all group members if it is provided to any (i.e., it is characterized by "non-excludability"). Examples include clean air, a smoke-free work environment and public television in some countries. Another defining feature is "jointness of supply," the term used to refer to the fact that the utility one individual obtains from the collective good is not reduced by the consumption (or use) of another (e.g., clean air). As Liedtke points out, the group size argument emphasizes the first dimension, non-excludability, typically the root cause of free-riding (and the difficulty of obtaining contributions to the public good) and focuses less attention on the latter dimension, which is more often associated with an increase in the probability of the provision of a public good. This omission is one of the reasons (see also Hardin 1992 on this topic) that the group size argument has been found to be faulty at the formal level. Jointness, it is argued (Marwell and Oliver 1993; Udeh 1988) and different problems in providing them. Marwell and Oliver (1993) make a very similar argument regarding the defective nature of the simplistic version of the group size argument in their chapter on the paradox of group size, but they go into much greater depth in their analysis of the relationship between production functions and the provision of public goods. The real dilemma, much of the time, is that individuals cannot make "enough of a difference" to compensate them for the cost of contributing (i.e., 1 five), thus, they argue, we are more likely to see small group solutions. What matters for successful mobilization is that there be enough people who are willing to participate and who can...
also be reached through social influence networks” (1993:55). In other words, what matters most is the formation of a “critical mass.”

A simplistic linear assumption was embedded in literature on the provision of public goods regarding the relationship between effort and effect. Marwell and Oliver emphasize the “production relation” between the costs that individuals bear and the benefits they obtain from the collective good. The relationship can be linear (as initially assumed implicitly, if not explicitly), a step function (see also Hardin 1982), a general third order curve (S shape), an accelerating curve or a decelerating curve. This analysis allows them to address such issues as how the provision of “public” goods like bridges that are best represented by a step function (either you have one or you do not), whether there is nothing in between situations in which there are either very high start-up costs (decelerating production function) or very low start-up costs (accelerating production function). With high start-up costs subsequent contributors become less willing to contribute (e.g. the picnic that takes a small “critical mass” to produce for many to enjoy). With low start-up costs everyone waits for the first group of individuals to get the process going and when that happens then many join in, but their efforts quickly become redundant (e.g. creating a community center). Marwell and Oliver’s analysis accounts for individual decision-making, the role of different levels of interest among the potential contributors, and inequality in the distribution of benefits. This leads them to constructing a step function to represent the relationship between the number of social networks of potential participants matter.

Here the book is somewhat thin on contact with the empirical work on social movements and the extensive literature on social networks (though key studies in both fields are mentioned, like the work of McAdam, 1989, and Granovetter, 1973). However, they do present an intriguing set of simulations exploring a range of factors that affect collectives’ social networks on the prospects for coordinated collective action. Recall that in the “production relation” social networks and the specific parameter values defined by the authors, this “finding” might have emerged just as quickly from an empirical perspective of sociologists. The problem with simulations is that they can be used to derive a variety of theoretical results precisely because they are so sensitive to the assumptions built into the model. As the authors readily concede, simulation results are not a substitute for empirical work. The network analyses also lead them through further simulations to the “discovery” of the effect of what they call “selectiv-
of a good theory is in empirical utility. In this sense it is appropriate that the book ends with a chapter entitled “Unfinished Business.”

The Larger Theoretical Context

While it is currently quite popular in the social sciences to revisit the relationship between the individual and the collectivity, collective action theory is really only a new label for a very old problem in social theory. Consider, for example, Rousseau’s (1762-63) observation that an individual’s “... private interest may influence him, in a manner diametrically opposite to the common interest of the society...”. He may be desirous of enjoying all the privileges of a citizen without any of the duties. In his engagement as a subject; an injustice, that, in its progress, must necessarily be the ruin of the body politic.” The injustice, that, in its progress, must necessarily... 

Critical mass. In addition, the focus tends to foreclose the interests of others who are similarly concerned with the same general problem. Because the problem is basically the same, but the conditions different, it is important to locate Marwell and Oliver’s work within this broader theoretical context.

Garrett Hardin’s (1968) tragedy of the commons is actually diametrically opposite to the collective action problem. In his tragedy, based on a nineteenth century essay by William Forrester Lloyd (Hardin and Baden 1977), a common grazing land is slowly overgrazed beyond its carrying capacity. It is the actions of many that bring ruin to the commonly-held property; limiting cattle by a minority of herdsmen would do no good at all. The theoretical issues surrounding such conditions tends to foreclose the interests of individuals that benefit from cooperation. 

Theoretical issues surrounding such dilemmas have captured the attention of a wide variety of scholars in the social sciences from economists to anthropologists. Related topics include: game theory, social movements, commons, private-property resource management, public choice, sociobiology, social psychology, and mass media. Typically, this research is ethnographic, such as Acheson’s (1975) classic study of the Maine lobster fiefs in Maine. Social psychologists have split their time between...
research has been conducted exploring moral cooperation in experimental social dilemmas. We may wonder if the range of solutions considered has been unnecessarily limited by the predominant underlying assumption of rational action.

Marwell and Oliver (1995:5) argue that the problem of collective action is "everywhere in social life." Social dilemmas are a paradox for game theorists, a central theoretical problem for a wide variety of social scientists, and an intractable problem for any individual with a collective vision, who fears receiving the "sucker's payoff." Social dilemmas would be resolved easily if we were not equally concerned with both providing collective goods and ensuring individual freedom. Whether it is giving blood, conserving water, or serving a jury, presenting a personal dilemma often conflicts with the goal of achieving a common good. When freedom is also a valued collective good, we are left with a conflicting goal of conflict.

Marwell and Oliver's book is an important theoretical contribution to the understanding of the aggregate consequences which result from the interdependent decisions of those who share resources and interests in collective action. The authors offer a sophisticated method of theoretical inquiry and research intrusts worthy of empirical inves-

The main contribution of this book to the development of social theory is that it bridges the gap between the "thin" rationality and sterile logic of economic approaches at one extreme and the theoretically underdeveloped, sometimes "messy" and overly de-


