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The Minimal Group Paradigm and its maximal impact in research on social categorization

Sabine Otten

One of the most influential paradigms in research on intergroup relations is the Minimal Group Paradigm. Initially motivated by an interest in understanding the basic determinants of social discrimination, this paradigm investigates the impact of social categorization on intergroup relations in the absence of realistic conflicts of interests, and for social categories that are arbitrary and novel. Based on a short overview of the main features of the paradigm and its impact on social-psychological theories, some recent modifications — mostly stemming from the past five years — are introduced. Moreover, attesting its versatility and great value, current research will be presented revealing that the Minimal Group Paradigm does not only target ingroup favoritism and social discrimination, but is successfully used in a wide array of research fields.

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Although its name may suggest differently, the impact of the Minimal Group Paradigm (MGP) has been maximal. Designed more than 40 years ago by Henri Tajfel and collaborators [1,2], it is still frequently used in research on intergroup processes, and has directly inspired two highly influential theories: Social Identity Theory [3] and Self-Categorization Theory [4].

When Tajfel and collaborators developed the Minimal Group Paradigm (MGP), they intended to investigate whether, even in the absence of a realistic conflict on limited resources, people would tend to favor their own group over other groups [1]. They planned to start with a most minimal setup and to successively add elements to the design until intergroup discrimination would emerge. To this end, they introduced a novel social categorization (e.g., based on artistic preferences [1]). Allegedly based on this categorization, participants were then assigned to a

group (the ingroup, e.g., people preferring paintings by Klee), which was differentiated from another group (the outgroup, e.g., people preferring art by Kandinsky). To realize a ‘mere categorization’ context, the MGP comprises the following features [1,5,6]:

- a) Categorization is novel and arbitrary; no history of experiences with ingroup and/or outgroup.
- b) Categorization is anonymous; no face-to-face interaction between group members.
- c) No utilitarian self-interests can be directly served by intergroup evaluations or allocations.

Originally, the dependent variable in the MGP was allocation behavior on intergroup allocation matrices. On these matrices, group members could simultaneously distribute resources between anonymous members of ingroup and outgroup. Tajfel and collaborators designed the matrices in a way that allowed assessment of whether participants were mostly guided by the tendency to divide resources equally between groups (parity/fairness), by seeking for maximum joint profit for the two groups, or by trying to maximize the own group’s profit. Moreover, they investigated whether people would sacrifice the maximum ingroup profit for the sake of more positive differentiation between ingroup and outgroup (e.g., rather than allocating 12 points to the ingroup and 11 to the outgroup, giving 11 to the ingroup and 9 to the outgroup).

Findings and impact

Although fairness concerns strongly guided intergroup allocations, the surprising finding of the first minimal group studies was that even under such very arbitrary and minimal conditions reliable evidence for ingroup favoritism emerged [1,7]. Moreover, in some instances the tendency to positively differentiate the ingroup from the outgroup was stronger than the tendency to maximize the ingroup’s profit. This finding was in contrast to Realistic Conflict Theory [8] and its claim that intergroup relations are a direct function of the nature of interdependence between groups.

The observed strong motivation to positively differentiate own groups from other groups, even in the absence of any (utilitarian) self-interest inspired the development of Social Identity Theory [3] and Self-Categorization Theory [4]. These theories claim that people may differentiate between own and other groups in order to derive meaning and a positive self-concept from their group memberships [9,10].

Criticism

Numerous experiments have replicated the finding that members of novel and arbitrary groups are prone to show intergroup bias in the absence of material self-interest [7,11]. Yet, the paradigm also received substantial criticism, mostly in relation to the used dependent variable [12]. Specifically, following suggestions that Tajfel's intergroup allocation matrices were not measuring the various allocation strategies independently [5,13], new matrices were developed. Initial findings were replicated using these new matrices [13,14,15*].

Aside from its measurement, the interpretation of the MPG-experiments has been criticized. Some have questioned whether the reduced and artificial conditions tap basic intergroup processes or whether they merely create a situation in which social category information receives unrealistic attention [16]. Moreover, based on reciprocity expectations, ingroup favoritism in the MGP might still be driven by realistic, utilitarian interests [17]. In addition, research on the positive-negative asymmetry in social discrimination [18,19] revealed that ingroup-bias within the MGP is mostly restricted to allocations of positive resources and evaluations regarding positive traits; when punishment and assigning negative characteristics are at stake, 'mere categorization' has no longer a reliable impact. Relatedly, a positive association between individual self and ingroup might be driving intergroup differentiation in the MGP; ingroup favoritism may emerge because of projection from the positive self to the new minimal ingroup rather than a comparison with the respective outgroup [20–24]. Yet, notwithstanding such methodological criticism and conceptual differentiations, overall the MGP has remained a reliable and useful instrument to investigate (inter)group processes in a highly controlled environment [5,6,11].

Further developments

MGP as a tool to investigate automatic responses when social identity is salient

Initially, the MGP was designed to better understand *blatant* intergroup discrimination and its underlying processes. Accordingly, explicit measures of intergroup allocations (mostly via matrices) and evaluations were used. Later the paradigm has also been used to provide response time evidence that right after being assigned to a novel ingroup, people automatically have more positive associations with this group than the outgroup. Hence, outside conscious awareness and without explicit intergroup comparisons, ingroup-favoritism can emerge [24–26].

Minimal groups can also be used to demonstrate other automatic processes in response to social categorization. In this research, the focus shifts from interest in ingroup favoritism to processing advantages of ingroup-related information over outgroup-related information. For example, Ratner and Amodio [27] investigated the initial

visual encoding of faces that were allegedly depicting either an ingroup or outgroup member. As indicated by response latencies and measures of cortical activity (ERPs), ingroup faces were processed more quickly than outgroup faces.

Interestingly, Ng and collaborators found that such ingroup bias in face recognition might be specific to certain (Western) cultures [28*]. This finding is further supported in research on cultural variations in evaluative biases in the MGP: Falk and collaborators [29*] demonstrated that American participants were more prone than Japanese participants to favor ingroup over outgroup members. This cultural variation in ingroup bias was partly, but not fully explained by Americans' higher degree of self-esteem.

In a study on encoding facial affect, Dunham demonstrated for both racial categories and minimal groups that people more willingly encoded outgroup rather than ingroup faces as being angry [30]. This suggests that when *encoding* visual information, mere categorization, and not a learned association between social categories and affect, is driving biased responses. In *implicit evaluations* (i.e., associations between ingroup and positive), however, the effects were much stronger for the racial categorization than for the minimal one.

Additional evidence for systematic differences in information processing after introducing a novel categorization, stems from recent work by Greenaway and collaborators, who investigated the effectiveness of communication in intergroup contexts [31*]. Their participants built an object using instructions allegedly provided by either an ingroup member or an outgroup member. In two studies, the quality of products was better when the instructions allegedly stemmed from an ingroup member. Moreover, corroborating the role of — even arbitrary — categorical distinctions in communication, differences decreased once a superordinate category, including both ingroup and outgroup, was introduced.

Relatedly, MacDonald and collaborators [32] investigated how previous experience with the (un-)reliability of sources of information interacted with social categorization. Pre-school children were categorized as member of a minimal group after which they saw a video showing two other group members (both ingroup, or one ingroup and one outgroup). One of these group members named familiar objects (e.g., shoe) correctly and the other named them incorrectly. When asked who of the two protagonists from the video they would trust more as a source for the name of an *unfamiliar* object, children typically showed selective trust in favor of the previously reliable source. However, when the video had shown an unreliable ingroup member together with a reliable outgroup member, the latter was not trusted more. Hence, categorization as outgroup

member conflicted with properly using and trusting information about past reliability.

Finally, the MGP has also been used to investigate neurophysiological responses in intergroup contexts. Scheepers and colleagues [33] documented that negative physiological arousal indicative of threat emerged when the status of the minimal group was threatened.

Different types of minimal groups

Even within the narrow boundaries of ‘minimal’ groups there can be variations in minimalism. Completely novel group memberships can be introduced based on a reasonably plausible rationale, such as being an ‘overestimator’ or ‘underestimator’, or preferring one painter of the other; but they can also be explicitly random, for example, based on a coin toss. In the former case the offered rationale may allow to generate certain stereotypes (e.g., overestimators are more generous), in the latter case, the explicitly random assignment undermines meaning making.

This effects of variations in *how minimal* social categories are was examined in recent research on how people give meaning to their novel group memberships. More specifically, van Veelen and collaborators [34] showed that when anonymously assigned to a novel and not further defined group, group identification was determined by the degree to which people projected their individual traits to the group as a whole (i.e., self-anchoring). However, once information on social stereotypes was added to the minimal group assignment, projection from group to self (i.e., self-stereotyping) was the strongest predictor of group identification. Hence, by using variations in the degree of minimalism of minimal groups, the bi-directionality in how individual self and group align could be demonstrated [34,35].

Pinter and Greenwald [36•] systematically compared several variations of minimal categorization procedures and the resulting explicit (identification, intergroup attitudes and allocations) and implicit (IAT-effects) ingroup biases. They distinguished between the classical MGP procedure (categorization based on art-preferences) [1,2], a variation of this procedure in which participants only imagined being categorized, an explicitly random categorization, and a procedure in which participants learned about the categorization based on arts-preferences without being categorized themselves. Instead, they memorized the names of members of one of the two groups. Interestingly, previous research revealed that such ‘implicit partisanship’ [37] already creates preference for the group whose member names has been memorized. Comparing these four variations, Pinter and Greenwald found similar degrees of ingroup favoritism on all explicit measures; the implicit, IAT-effects, however, were strongest in the memorization condition. The authors assume that the focused study of individuating information (group

members’ names) created a link between participants’ typically positive self-concepts and the targeted group, while the other group remains relatively neutral [36•]. This reasoning is fully in line with evidence that a link between (individual) self and novel ingroup is a crucial factor in biased reactions within the MGP [20,22,23,35].

In addition to variations in the content associated with minimal groups, the structural relation between the novel in-group and outgroup has also been varied. In these studies, examining the moderating power of variables such as relative group status, group size and power allowed for the investigation of relevant variables to intergroup relations under highly controlled conditions [15•,38–40].

Including self-interest in the MGP

Although these modifications and extensions of the MGP keep the main features of the paradigm intact (i.e., no previous history with the groups, anonymous categorization, no instrumental links between self-interest and evaluations/allocations), Harvey and Bourhis, recently introduced a systematic departure from the classical set-up in order to examine the role of power, wealth and wealth stratifications in intergroup discrimination [41,42•]. Moreover, using the ‘Monopoly’ game as an engaging research context, they made the pursuit of self-interest an integral ingredient of the experimental procedure. Firstly, participants allocated a limited amount of *own* (play) money between anonymous ingroup and outgroup members. Secondly, in a separate task, participants also allocated money between ingroup, outgroup, *and themselves*. Finally, desired future intergroup resource allocations were assessed to investigate group members’ interest in diminishing versus maintaining intergroup inequalities.

Manipulating both group wealth and wealth stratification (chance/merit), Harvey and Bourhis [42•] found significant ingroup favoritism in poor group members’ intergroup allocations irrespective of wealth stratification. The rich, however, only strongly favored their ingroup over the outgroup if their wealth was based on merit. Moreover, when dividing money between self, ingroup, and outgroup, participants gave most money to themselves, but kept favoring their ingroup over the outgroup in their distributions of the remaining resources [41,42•].

Together, these studies underline the impact of social categorization by showing that ingroup favoritism in the MGP persists, even if individual self-interest can be fulfilled. Moreover, they demonstrate that with a few adaptations, and while maintaining the highly controlled experimental setup, the ecological validity of the MGP can be enhanced such that societally relevant concepts like wealth inequalities and -stratifications can be properly analyzed.

Conclusions

More than 45 years after its initial publication, the MGP is still a popular and useful tool in social-psychological research. It has enabled the creation of highly controllable conditions in which both explicit and implicit measures can be studied as a function of novel social categorization. Originally, the MGP set out to study how social categorization may affect intergroup allocations. Currently, the focus of researchers using the paradigm is still on the impact of social categorization, but much less so on understanding intergroup discrimination. Instead, a whole range of other interpersonal, intra-group and inter-group phenomena are studied as outcome variables. Altogether, the paradigm has provided an intriguing heritage in terms of both theory and methodology. And obviously, there is still a lot to learn from minimal groups.

Conflict of interest statement

Nothing declared.

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