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Shared Responsibility in Collective Decisions

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Abstract

Research investigating collective decision making has focused primarily on the improvement of accuracy in collective decisions and less on the motives that drive individuals to make these decisions. We argue that a strong but neglected motive for making collective decisions is minimizing the material and psychological burden of an individual's responsibility. Making difficult decisions with others shields individuals from the consequences of negative outcomes by reducing regret, punishment, and stress. Considering shared responsibility as a another key motivation to join groups helps understand behaviors with societal implications such as political voting, committing norm violations, predicting natural disasters, and making health-related decisions.

People make many decisions collectively; these range from mundane choices such as where to have dinner to fateful ones such as how to vote in an important election or referendum. Collective decisions are also made by other social species, such as bees1, ants1, and fish2. These species make group decisions by mechanisms similar to voting and consensus1,2. In this Perspective, however, we focus on human collective decision making. Previous research in this field has concentrated on whether the *accuracy* of collective decisions surpasses that of individual decisions, and under which conditions this "wisdom of the crowd" can be harnessed3–13. Here, we shift the focus to a key issue that has received little attention to date: *Why* do individuals engage in collective decision-making behaviors in the first place?

One answer to this question is that collective decisions are often *obligatory*: numerous endeavors are only possible when people coordinate their efforts and act collectively (Figure 1A). Examples of this type of collective behavior include being part of a reproducing couple, hunting a large and dangerous prey14, and manufacturing a product that requires various specialized skills (although belonging to such a collective does not imply that, by necessity and across cultures15, decision making will always be participatory and collective). In these

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latter cases, individual members have no choice but to abide by the collective norm. However, there is another class of situations that arise when individuals with the same goal or incentives *voluntarily* choose to take a collective decision (Figure 1B). Examples of this type of collective behavior include friends starting a business, groups of doctors making medical decisions, and panels of experts predicting a financial crisis. Our focus is on this latter class of situations, in which collective decisions are voluntary.

Why Voluntarily Join Collectives

For an individual, achieving admission to a group can be costly. Orchestrating a joint decision can exact costs such as loss of autonomy and time, and/or coordination costs16,17. Given these potentially substantial costs, what makes the collective approach to making decisions attractive? Motives for joining collectives can relate to the decision process itself or to its anticipated positive/negative *outcomes* (Figure 1).

We identify three main categories of motives for voluntary collective decisions (coded as underlined, italic, and bold in Figure 1). The first is improving outcomes by joining forces (underlined). Here, individuals can be driven by combining their efforts during the decision process (dividing their labor or sharing necessary materials, Figure 1a, Effort), increasing accuracy, acquiring veridical representations of reality18, obtaining higher rewards19, and learning from others20,21 (i.e., pooling intelligence to reach positive outcomes; Figure 1b, Pooling intelligence). These motives are not self-evident. The saying that “two heads are better than one” vies with contradictory maxims, such as “too many cooks spoil the broth.” Even in his legendary demonstration of collective wisdom, Francis Galton22 was surprised that the “vox populi” outperformed the individuals’ estimates. Likewise, individuals underestimate the improvement achieved in reasoning tasks when they act as a group23.

A second important category of motives for joining groups relates to social and normative needs, i.e., feeling included in a group or society and fulfilling needs for fairness (shown in italic in Figure 1). Social interactions can be intrinsically rewarding24, and being a member of a group can help to maintain a positive self-concept through positive shared social identity25–27 (Figure 1a, *social inclusion*). Furthermore, people have various communal and normative needs: they care about emotional identification, moral values associated with cooperation19, and procedural justice28 (concern for fairness; Figure 1a, *Fairness*).

However, there is another, underappreciated and under-investigated third category of motives for joining groups: sharing responsibility for decisions (shown in bold in Figure 1). We argue that shared responsibility plays an important role in motivating collective decision making because its benefits are consistent and reliable, even in the absence of improved outcomes. In the next three sections of the perspective, we advance this thesis in three steps: (1) We provide evidence that responsibility is indeed shared in collective behaviors, allowing individuals to claim credit for positive outcomes (Figure 1b, **Credit**) while avoiding blame for negative outcomes. (2) We identify conditions and contexts under which sharing responsibility with others can benefit the individual. (3) We argue that sharing responsibility benefits the individual by decreasing the risk of internal sanctioning (**regret**), external sanctioning (**punishment**) and **stress** (Figure 1c). Because few empirical studies have

directly addressed the motives underlying collective decision-making we draw on evidence is, by necessity, predominantly circumstantial. We believe, however, that the evidence we present from studies on responsibility, agency, group behaviors, and delegation supports our thesis and highlights the relevance of this previously neglected facet of group decisions. Let us also mention that we base our argument on studies not only of collectives but also of individual behavior, as the latter shed light on the individual's perspective when making the decision to join a group. We hope that the framework we propose to systematize the motives underlying collective decision-making will encourage researchers across disciplines to directly address the central question driving this investigation: Why do people voluntarily join collectives?

Decreased Responsibility in Groups

The thesis that individuals make collective decisions for sharing responsibility involves a prerequisite: that individuals feel less responsibility and relatedly, less agency, when they are in the group as compared to alone. But do they?

Diffusion of Responsibility in Groups

Early studies on diffusion of responsibility showed that people feel less responsible when performing an action as a group than when acting alone29–35. These pioneering works demonstrated that when individual contributions are ambiguous and group members are not assigned particular roles (such as "leader"), attributions of responsibility follow a self-serving rule: individuals tend to claim more credit for successes (Figure 1b, **credit**) and avoid responsibility for failures32–35. Research has shown that the decreased sense of responsibility in groups can promote adverse and undesirable behaviors36, such as free-riding1,37–39, groupthink40, social loafing41, abstaining in elections42, inaction in emergency situations (known as the bystander effect 43–45). Such behaviors may emerge because individuals in groups act as if they delegated responsibility and agency to others1,37. As these behaviors illustrate, the individual benefits of shared responsibility do not necessarily coincide with the collective good: while the individual ends up with a better outcome or avoids effortful actions, the collective outcome is hindered (less cooperation, worse decisions). In a similar way, the individual benefit of improving accuracy and rewards can be disconnected from the collective improvement of accuracy: Lorenz and colleagues46 found that the communication of opinions between members of a group reduces the diversity of opinion, rendering the *collective* opinion (i.e., the average of the individual opinions) less accurate. However, a reanalysis of the same data47 showed that *individual* participants' accuracy and rewards were, on average, improved by converging towards the others' opinion. The discrepancy shows how individual- and group-level outcomes may not converge48. Importantly, this divergence highlights how engaging in socially interactive, collective decision may prove useful for individuals without benefiting the group48.

Modulated Sense of Agency in Groups

The sense of agency is a subject of growing attention in cognitive science49. A person's sense of agency49 refers to their perceived control over their actions and, ultimately, the world around them. It has been described as a "mental and neural state of cardinal

importance in human civilization" that "underpins the concept of responsibility"[49]. Experimental evidence shows that a reduced feeling of responsibility is associated with a reduced sense of agency, offering further support for an intimate link between agency and responsibility[50].

Previous studies suggest that acting in a group decreases the sense of *individual* agency and responsibility for the collective outcome. Even conditions such as merely being in the presence of another agent who does not causally contribute to the outcome[51], receiving orders from others[50], and performing actions with others[52] decreases an individual's sense of agency. By the same token, people report feeling less responsible for harming others if they are acting on orders[50] and less responsible for probabilistic outcomes if they gamble collectively rather than individually[53,54]. In addition, acting in cooperation with others can foster a sense of *joint* agency via the emergence of a "we-mode," which consists in a shift from self-agency to we-agency in collective actions[52,55–60]. The literature on joint agency shows that entering this we-mode is context dependent: it depends on factors such as the structure and scale of a joint action[55], the distribution of roles[52,60], and the capacity to make joint predictions[57]. Consequently, individuals in a group may not always feel as if they are acting as a unified group and, by extension, as if they share responsibility. But even if individuals do not enter the we-mode during an action or decision, they can still retrospectively hold others in the group responsible for undesirable outcomes.

When it is Beneficial to Share Responsibility

When do people decide to join groups in order to share responsibility? This is not a trivial question, as being in a group commonly exacts the cost of giving up some autonomy—and people value their autonomy as, for instance, the following findings demonstrate. Humans seek it as a reward in its own right[61], similar to food or mating opportunities. Even in rodents, autonomy fosters resilience[62]. Likewise, civil servants who have more control over their job are more resistant to ischemic heart disease[63]. Moreover, people seem to insist on making decisions for themselves even when this autonomy comes with emotional costs[64,65]. In contrast, research on delegation and advice seeking has shown that people prefer to give up their autonomy or parts of it when faced with difficult choices[66,67]. They do so by procrastinating[68–71], opting for the default option[72,73], or delegating the choice to someone else[67,74]. Similarly, every time individuals join a group, they relinquish at least some of their autonomy.

So when and why do individuals give up some of their autonomy—along with its tangible and intangible benefits—to join collectives? Embedding oneself in a collective structure may be a good compromise between retaining full autonomy and thus responsibility (which, if the outcome is negative, could be very costly) and surrendering all autonomy, thereby renouncing responsibility. In other words, collective decisions preserve some autonomy while offering protection when things go awry and blame is apportioned.

Joining collectives to share responsibility—at the price of having less control—can be useful in the following two conditions. First, when individuals face choices whose outcomes are uncertain and potentially detrimental. Blowing the whistle on a powerful individual's

misconduct or investing in a new business are real-life examples of uncertainty-ridden choices that can have dramatic consequences. In many such cases, the consequences of solitary versus collective decisions can be asymmetric: a single negative report on a powerful individual's behavior can destroy the whistleblower's career and livelihood, whereas a cluster of such reports can validate the complaint, increase the chance of change, and reduce the risk of individual-specific retribution. In group decision making, individual members tend to defer risky decisions to other members of the group, a kind of responsibility aversion75. When faced with important decisions that run a high risk of errors, people voluntarily seek advice to share responsibility for their judgments76. More generally, descriptive norms (what most other people do or say they do77) can be used to justify choices retrospectively78. Descriptive norms allow decision makers to attribute some of the responsibility to others, thereby protecting themselves from the potential consequences of errors.

Second, it may make sense to join groups to share responsibility when the outcome of a decision is not uncertain, but rather when the momentous potential impact of the decision may have detrimental consequences for those who took it individually. For example, in the admittedly extreme case of execution by firing squad, the squad members are usually instructed to fire simultaneously, making impossible to know who fired the lethal shot and is, therefore, ultimately responsible for the condemned person's death. Also, even when the outcome is predictable, the process of making the decision itself can be emotionally distressing, as in the case of end-of-life medical decisions made by surrogate decision makers79. Sharing responsibility for such decisions can be beneficial for individuals as it might help mitigate the associated distress. Indeed, people facing tragic choices, such as parents deciding whether to discontinue their baby's life support, have a weakened desire for decision autonomy80; however, they hesitate to completely relinquish their option to choose. As suggested before, a collective decision could be a good way to combine conflicting objectives: sharing responsibility with others allows an individual to take less responsibility for the decision outcome without surrendering their autonomy altogether. In contrast with the decreased desire for autonomy for stressful choices80, other studies show that people prefer autonomy over delegation even if the final experience is more negative64,65. Interestingly, the latter studies examined consumers' choices about food options, which involved little uncertainty or stress, and thus did not fall into either of the conditions we describe. This context-dependency of the preference to forgo autonomy reinforces our claim that people will choose to share responsibility only under specific conditions.

Our discussion of motives for engaging in collective decisions focuses on the perspective of the individual decision maker and does not consider how an outcome and its effects may or may not be shared between the individual and the collective. Various allocations are possible: (1) The outcome may affect only the individual, such as when an investor heeds the advice of an advisory panel; (2) the outcome may affect both the individual and the collective, such as when members of a family invest in a property together; and (3) the outcome may only affect the decision maker(s) indirectly by affecting their reputation, for example, such as when a group of doctors reach a decision about a patient's diagnosis and treatment. Without wanting to underestimate the differences between these scenarios, we

suggest that, from the individual's point of view, they all represent situations in which being a member of a group decreases the individual responsibility for a decision's outcome.

Why it is Beneficial to Share Responsibility

How does shared responsibility benefit individual group members in the conditions outlined in the previous section: (i) when outcomes are uncertain and potentially detrimental (ii) the decision process and/or the certain outcome are emotionally distressing? In the former condition, the costs of errors can be high. These costs may be psychological (e.g., regret) or material (e.g., loss of money or reputation); they can be self-imposed or imposed by others. Sharing responsibility in collective decisions can protect against these internal and external costs. In the latter condition, sharing responsibility can help mitigate this emotional toll. In all these cases, individual group members benefit from the collective structure independently of any potential improvements in outcome. This property constitutes the robust benefit of sharing responsibility in collective decision making. Dividing and distributing responsibility thus serves as a kind of an "insurance policy," similar to diversification in risk management. In social animals, a comparable "insurance mechanism" is observable in the "dilution effect": animals congregate in groups to protect themselves from predators, thus "diluting" the risk of being attacked81.

We discussed that individuals do indeed feel less responsibility and agency in a group setting. If the decision outcome is successful, the difficulty of responsibility attribution in a group structure allows individuals to claim credit for this outcome (Figure 1b, credit). We next turn to—admittedly circumstantial—evidence that suggests that people can reap tangible benefits from sharing responsibility in terms of attenuation of regret, punishment, and stress in the case of a negative outcome (Figure 1c).

Reducing Internal Self-Sanctioning

Regret is a common emotion that strongly influences decision making82. People experience regret when thinking about counterfactual, preferable outcomes that could have occurred had another choice been made83,84. Studies on the link between regret and responsibility suggest that regret is conditional on feeling responsible for an outcome85 and even that feeling responsible for a decision or an action is the "constitutive element of regret"86 (but see debate on this issue85,87–89). The availability of counterfactual outcomes increases the individual sense of agency90, and the feeling of responsibility is conditional on an awareness that one could have decided differently91. Being part of a group distributes the responsibility for decision outcomes among more than one individual; consequently, the members of groups are likely to feel less regret than if they had made the same decision alone. In fact, subjective ratings of both responsibility and regret are lower in the wake of majority votes54. Moreover, people are prone to anticipate regret and do their best to avoid it by making regret-minimizing choices66,92–95. Consistent with our thesis, anticipated regret leads people to delegate difficult decisions to others67, suggesting that making collective decisions may be one way to regulate and reduce both anticipated and experienced regret.

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Reducing External Sanctioning

Formal and informal institutions of justice that enforce norms and punish violations of norms are crucial for individual and collective welfare. Humans are even willing to bear personal costs to punish others who violate norms96. Punishment can also be social, such as loss of reputation or ostracism. The Chinese government has even implemented a social credit system in which citizens' behavior and trustworthiness is measured, and when found lacking on the governmental benchmarks results in a lowering of citizens' scores97. A critical factor in determining whether an individual should be punished for an action is not only whether they were the agent of that action but also whether they were responsible for it91. There is evidence suggesting that responsibility deferral is a strong motive for delegation of a decision to another person as it protects against punishment98. The collective sharing of responsibility for a decision's detrimental outcome is likely to result in collective punishment. Yet how a collective can be held responsible is a much debated question in moral philosophy, given that a collective lacks the psychological capacities attributed to an individual99. As long as the penalty for a collective act is distributed across agents, it is likely to be less severe than for a "solo offender" perpetrating the same act. The difficulty of determining who did what is also likely to attenuate punishment in a group. Identifying an individual's personal contribution to a deed is essential in ensuring that crime and punishment are proportional, a cornerstone of any fair legal system100.

Although indirect, there is some evidence that collectives are held less responsible than individuals for harmful or unfair acts and therefore might be punished less harshly. For instance, people in a group display free-riding behaviors38,39, possibly because they think they are more likely to get away with it in a group than as individuals. A group is judged less responsible101 and punished less severely102 if it is perceived as consisting of a collection of distinct agents (low-cohesive group) than as a unified agent (high-cohesive group).

The "insurance policy" of becoming part of a group is, of course, not fail-safe. Whether or not responsibility is attributed to individuals in a group depends on several factors31,103–107: the status of the individual (e.g., explicit leader)31,32,106, the contribution of the individual to both actual and counterfactual outcomes107, the order of contributions (e.g., whether the individual was the last person to act)103, and the extent to which contributions were pivotal105. If the group structure is sufficiently transparent, differential responsibility attributions are possible. In such cases, some or all of the protection bestowed by group membership is annulled. However, as long as a lack of transparency guarantees that there is "no soul to damn, no body to kick"108, responsibility and blame cannot be assigned to individuals.

The issue of how to hold a collective responsible for harmful acts is highly relevant to criminal justice. For example, proponents of the joint enterprise doctrine applied in England and Wales109,110 argue that any person involved in a crime, even if they did not actually commit it, is just as responsible as the person who did—and that they are to be punished just as severely. The heated discussion around this long-contested legal precedent highlights the fact that it is much harder to know who to blame when several people are involved. The problems inherent in attributing individual responsibility to members of a group, and the associated weakening of the deterrent function of potential punishment, may help to explain

why collective protests sometimes culminate in unexpected levels of violence (e.g., France's recent "yellow vest" protests111).

Mitigating Stress

Besides buffering against regret and punishment in situations where the outcome is uncertain, collective distribution of responsibility can be beneficial in situations where the outcome is predictable but emotionally distressing. For instance, it can help to mitigate the stress associated with thorny choices that require difficult trade-offs112 or result in tragic outcomes80. When faced with choices associated with grave risks, such as whether to prescribe a drug that could cause a fatal adverse reaction74, people will be more likely to procrastinate and defer responsibility to others if they are held accountable for their decision. Sharing responsibility in order to mitigate stress is therefore particularly relevant in the domain of medical decision making, when people need to make decisions on behalf of others. Examples include parents having to decide whether to discontinue life support for a terminally ill child80 or family member surrogates making treatment decisions for relatives incapacitated by life-threatening conditions113. In the case of end-of-life decisions, both patients and surrogates much prefer shared surrogate decision making among family members to other forms of decision making (with the sole exception of patient-designated surrogates)113,114. This finding is consistent with our hypothesis that shared responsibility can buffer against the psychological distress of making these difficult decisions by minimizing the burden of individual responsibility. It is also likely the reason why it has been suggested that pooling expert opinions on emergency situations (e.g., predicting the outbreak of a volcano) would not overburden a single expert with the responsibility for making a potentially highly consequential forecast115.

Conclusion

To date, research on collective decision making has focused primarily on the potential gains in accuracy that are obtained from collective (rather than individual) decisions. We believe that this focus has both diverted researchers from asking what motivates people to join groups in the first place and largely ignored other, more reliable and tangible, benefits of collective decision making. Drawing on evidence and concepts from psychology, behavioral economics, cognitive science, and philosophy of law, we suggest that individuals engage in collective decision making for at least two additional categories of motives: minimizing sanctioning and reducing emotional distress. First, they can share responsibility for uncertain and potentially detrimental outcomes, thus minimizing post-decisional regret (internal sanctioning) and punishment (external sanctioning). Second, they can share the emotional distress caused by the process of making grave decisions and experiencing their predictable outcomes.

Issues of regret, responsibility, and altruistic punishment are relevant across a wide range of societal domains, including medicine, law, and business. It remains an open and crucial question how different motives (e.g., pooling intelligence, sharing responsibility for negative outcomes, and social inclusion; Figure 1) interact in prompting people to engage in collective decision-making behaviors. We hope that recognizing the motives for collective

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decision making (beyond accuracy gains and obligatory collective decisions) will foster a more comprehensive understanding of the conditions under which collective decision making is preferable to individual decision making—in other words, that it will help to determine the ecological rationality of collective intelligence116.

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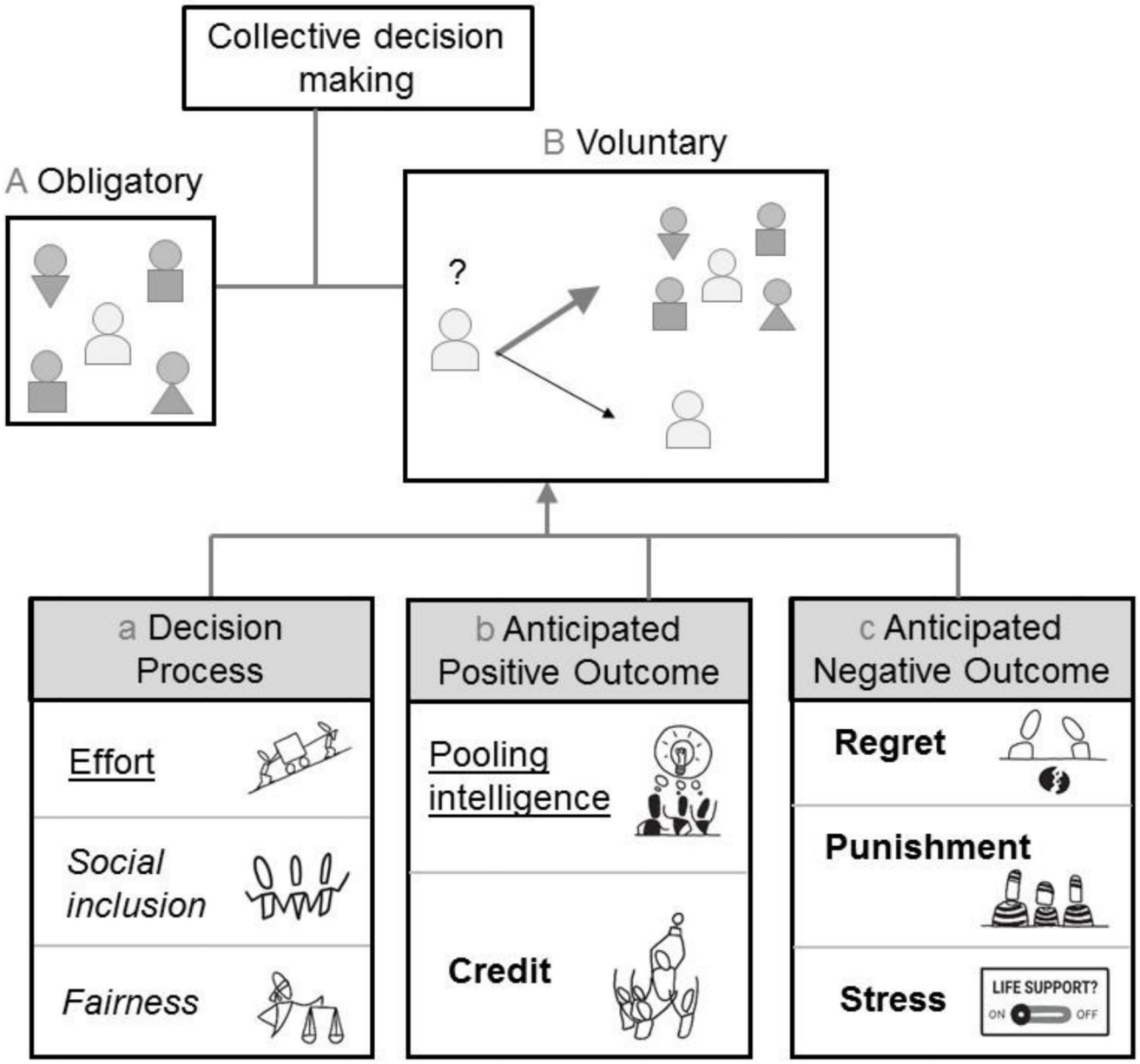

Figure 1. Motives for collective decision making.

A framework for understanding individuals' motives for engaging in collective decision-making behaviors. The first distinction is between circumstances in which collective decisions are **A)** obligatory versus **B)** voluntary. We focus on the latter (A). The second distinction is between motives that relate to a) the decision process itself and (b–c) its anticipated outcome. The different motives are linked back to the three categories identified in the main text: improving outcomes (underlined, Category 1); social inclusion and normative needs (in italic, Category 2); shared responsibility (in bold, Category 3). **a)** Under the process-related motives, individuals combine their efforts during the decision process (Effort), feel included in the group (*Social inclusion*), and fulfill their normative needs for

fairness and procedural justice (*Fairness*). **b)** Under an anticipated positive outcome, individuals pool intelligence to reach a better/positive outcome (Pooling intelligence) and are able to claim credit for successful outcomes (**Credit**). **c)** Under an anticipated negative outcome associated with decision uncertainty or difficulty—our focus in the main text—sharing responsibility reduces **Regret**, **Punishment**, and **Stress.**

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