Individuals and Types of Group Behavior

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Language and social institutions, at some level, exist through group behavior. Their functions cannot be carried out without collaboration among people. Yet it is *individuals* who compose these institutions and enable them to function. What, then, is the relationship of individual and group behavior? Which is real? Which is essential? My interest in these questions comes especially because I seek to know how syntactic language and social institutions were created—how these essentially group-based structures came into existence out of a world in which the individual seems to be treated as more basic and more real.

Language and institutions necessarily arose from some complex interplay of individual and group behavior in humans. But to enter into this discussion, we need some sense of the varying possibilities for individual and group behavior. Thinkers have long debated these possibilities, seeking to make sense of society by breaking it down to the individuals within families, societies, and other groups. In eighteenth-century France, Jean-Jacques Rousseau wrote famously on *The Social Contract*, which he imagined as a contract among individuals that enabled the creation of a society—in which individuals gave up some of their freedom of choice in exchange for the benefits of social organization. But as will be shown in the sections to come, there are several more approaches to categorizing human behavior, so it makes sense to identify and consider them before rushing to explain the origin of language and institutions.

This essay is no more than an eclectic assembly of remarks on perspectives about individuals and groups, noting the various scales of analysis for each. Of all the possible units of discussion, the individual would appear to be the simplest. But a remarkable essay on "Biological Individuals" makes clear that the variety of individuals is great enough to make this a fundamentally complex topic (Wilson, Robert A. and Matthew J. Barker, "Biological Individuals", *The Stanford Encyclopedia of Philosophy* (Winter 2021 Edition)).

Groups among primates

Comparison with the behavior of other species helps to show the possibilities of human behavior. Necessarily, all groups of organisms are made up of individual organisms, each retaining their individuality—birth, life course, and death—though that individuality may be modified by participation in a group. But it has been difficult to determine where the individual behavior ends and the group behavior begins. Because animals (and plants) propagate themselves by sexual contact, each individual is linked to its species by some form of group contact. Group contact is most fundamental at conception and birth, but it also arises during the life course in varying ways. Indeed, groups have formed and functioned among many biological orders: schools of fish, flocks of birds, and hives of ants and bees as examples of the different types of groups and communication among animals. Among mammals, in addition to the large but informal herds of antelopes, there are groups of closely associated individuals among large-brained species, including dolphins, wolves, elephants—and our own order of primates.

The interdisciplinary field of primate studies formed in the 1950s, with particular interest in the mix of individual and group behavior. Anatomists, anthropologists, and psychologists combined to compare details of the 500 primate species, including lemurs (Madagascar), monkeys (Old World and New World), apes (Old World), and hominin (humans and our close relatives). They confirmed that brains of primates are relatively larger than in any other biological order, and that large brains are a result of the intensive social relations among primate individuals.

Primates generally live in forests, where they forage fruits, but also eat tubers and, occasionally, meat. Primates maintain lasting relations among friends, parents, children, siblings, and mates, relying on grooming (gentle touch) to nurture contacts. The effort of maintaining close relationships—with as many as 15 friends and relations—

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requires a great amount of brain-power to remember the characteristics and experiences with each. Primates form two characteristic groups: *intimate groups* of about five individuals, centered on a mother and her offspring, and *communities* of roughly 40 members, which control a range of territory and protect group members against outside predators and internal disorder.

Primatologists developed a "social brain hypothesis" to explain this pattern and especially the emergence of hominin species in which brains expanded even further. Maintaining personal relations required an expansion of the neocortex—the frontal brain lobe—to keep track of relations with numerous individuals. The grooming of individuals stimulated the flow of endorphins, chemicals giving a sense of pleasure and relaxation. Bigger brains allowed the formation of bigger community groups. Hominin, evolving out of Great Apes, developed steadily larger brains and, with that, larger community groups, eventually reaching 150 for communities of *Homo sapiens*. The intimate groups or households among humans remained at about five members; additional groups of intermediate or even larger size formed. Robin Dunbar eventually showed a fractal relationship, in which preferred sizes of human groups arose by factors of three, from five to 15, 50, 150, 500, 1,500, 5,000, etc. (Gowlett 2012, Dunbar 2020).

One may note that biological evolution is commonly thought to be genetic in its mechanism and individual in its scale, but the intimate and community groups of primates—stable and central dimensions of life for numerous species—arose out of biological evolution.

Intentionality among primates and humans

Working from a very different discipline, philosopher Daniel C. Dennett published *The Intentional Stance* (1987), advancing the notion of "intentionality," emphasizing mind reading or understanding the beliefs of others. Dennett considered various orders of stances or attributions of belief, which he called physical, design, and intentional stances, for predicting behavior of objects. The intentional stance involves mind reading, seeking to predict what another individual believes and how that person will act; Dennett explored original, intrinsic, and derived intentionality. By 1998, three separate analysts began to build further on Dennett's notion of intentionality: primatologist Robin Dunbar, evolutionary psychologist Michael Tomasello, and philosopher Raimo Tuomela.

Dunbar updated Dennett's definition, identifying individual-level intentionality as belief about thinking. He conducted experiments on adult subjects to see how many levels of intentionality they could demonstrate. He found that first-order intentionality is an individual with belief about his or her own thinking. Second-order intentionality, in turn, is the belief that another organism is thinking. Third-order intentionality is thinking about a second organism thinking about what a third organism is thinking. Dunbar gradually moved from four to five levels, arguing that the fifth level was necessary for sustaining syntactic language, while the fourth level could sustain basic narratives (Dunbar 2020).

Michael Tomasello moved from the U.S. to take up leadership of a lab in Leipzig in 1998 and began his work on development of young humans and chimpanzees. The preface to his 2019 book describes lunchtime conversations about intentionality from his early days in Leipzig. His framework identified individual intentionality in Great Apes, as contrasted with shared intentionality in humans. The latter included dyadic acts of joint intentionality (at age 18 months) and group acts of collective intentionality (at age 4). In 2012 and 2019, he attributed each of these developmental levels to stages in hominin evolution (Tomasello 2012, 2019). Dunbar and Tomasello focus, each in their own way, on understanding readiness for syntactic language but not on hypothesizing the actual process of creating syntactic language.

Later, philosopher Raimo Tuomela formulated the creation of institutions through we-group collective intentionality—through the agency of those who decide to form a group to achieve an agreed-upon objective (Tuomela 2013). This approach seems to come closer than others to modeling the actual creation of syntactic language. Tuomela had long worked on social action, including studies of "we-intentions" and reviews of Searle's work on institutions. He presented a 2000 paper on "Collective and Joint Intention" and a 2001 paper on

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"Collective Intentionality and Social Agents," advancing to "The We-mode and the I-mode" in 2003. Tuomela worked only among modern humans, so he theorized only a single I-mode of individual intentionality and possible combinations of it to yield a we-mode. Tuomela's three criteria for formation of a we-group: a we-group includes members unified and bounded by their collective intentionality, by which is meant their shared objective; recognition of their common interest; and agreement to act for the interest of the group. Tuomela further used game theory to show that decisions made in the we-mode were *irreducible* to individual-level decisions.

The three models, while containing similar elements, retain significant differences. Is it possible to add the varying formulations of intentionality by Dunbar, Tomasello, and Tuomela and arrive at an *overall* version of intentionality? Dunbar identifies five levels of intentionality, as described by the number of brains an individual can visualize, with the fifth level as a highly literate person. Tomasello identifies three levels of intentionality, reflecting expanding levels of development. And Tuomela identified two levels of intentionality, but both for modern humans. Yet the criteria for Tuomela's we-group collective intentionality, necessary for creating an institution, seem more rigorous than Tomasello's top level.

Dunbar and Tomasello both identified varying levels of individual intentionality; Tomasello and Tuomela both used the term "collective intentionality," but with different meanings and without citing each other. As a result, I have adopted the term "we-group collective intentionality" to describe Tuomela's "collective intentionality" and contrast it with Tomasello's "collective intentionality." While I have emphasized the advantages of Tuomela's vision of collective intentionality over those of Dunbar and Tomasello, it is clear that the latter visions include aspects of historical and biological reality that are not part of Tuomela's vision. Is it the case, then, that the formulations of Dunbar and Tomasello add important dimensions not only to the ancestry of collective intentionality but also to the dynamics and functioning of intentionality?

Further, Dunbar's vision of intentionality is studied entirely at the individual level, though Dunbar clearly recognizes that higher levels of individual intentionality allow for participation in steadily more complex group activities. (Dunbar also emphasizes the varying sizes of groups, in a fractal relationship, though all levels could conceivably involve individuals with high levels of intentionality.) Tomasello begins with the notion of individual intentionality, restricted to an awareness of one's own thinking, and contrasts it with "joint intentionality" and then with collective intentionality. This observation draws attention to the fact that Tuomela's "I-mode" appears to apply to groups rather than individuals. The distinction between I-groups of individuals who act in their own interest within the group and we-groups, where individuals act in the interest of the group, is one of the main points of Tuomela's analysis.

Networks
For a more basic approach to individuals and combinations of individuals, I turn to the logic of networks. Networks are defined most basically as inanimate objects and their combinations: that is, the elements of an object—the points or *nodes*—and the *links* that connect them. (Or, in an alternative terminology, the *vertices* and the *edges* that are linked together.) Networks thus define spatial relationships among elements, giving the relative position of each. But networks are redefined for relations among humans: the nodes are individual humans or groups of humans, and the links are specific types of relationships among the nodes (Versluis 2002).

The analysis of networks includes such descriptive terminology as *paths* (a sequence of nodes or links), the *degree* (the number of links for each node), the *centrality* of a node compared with other nodes, and the *diameter* of a network (a measure of the number of steps from one node to another). Two logical extremes in networks are *regular* networks (in which every node has an identical relationship with other nodes) and *random* networks (in which nodes and links are distributed randomly and not necessarily in contact). Between these extremes are many types of networks, including such hierarchical networks as *branching hierarchies* (tree diagrams) and *nested hierarchies* (where the nodes contain separate hierarchies). In the mathematical and modeling analysis of networks, *small-world networks* have gained substantial attention: they have significant *clustering* of nodes with

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numerous links and relatively small *diameters*, meaning few steps from one node to another. Small-world networks are found to be useful in modeling situations in both society and the natural world.

This is just a peek into the nature and complexity of networks. In any comprehensive discussion of human individuals and groups, the study of networks—defined in terms of nodes and links—demonstrates that there are many possible relationships within networks, so network relations should be kept in mind when considering individuals and groups more broadly.

Methodological individualism

In a very different approach to relations between individuals and groups of people, Lars Udehn drilled deeply into scholarly formulations of individualism during the past several centuries. Udehn analyzed the recurring efforts of scholars to simplify and model the problems of social interaction by focusing on the individuals that make up society. After exploring a range of European and American formulations, Udehn concluded that methodological individualism "exists in a bewildering number of different versions." Nevertheless, he was able to categorize them into two main groups, "strong" and "weak" methodological individualism, which emerged chronologically and move from the most elementary and simplistic toward those that include an increasing number of social processes. His categories are as follows:

1. Strong methodological individualism is analysis in strictly individualistic terms, with little or no attention to social processes. Examples include:
    - The theory of the social contract (Rousseau) and the theory of general equilibrium (Walras). Udehn considers these to be cases of *natural individualism,* since nothing sociocultural enters their explanations.
    - Austrian methodological individualism (Menger). It is categorized by Udehn as *social individualism, because it* recognizes the individual as a social being and society as an intersubjective reality.

2. Weak methodological individualism is dominantly individualistic in its analysis but gives some recognition to social processes. Examples include:
    - Popperian methodological individualism (Popper) is *institutional individualism,* in which social institutions exist but are exogenous.
    - Coleman's methodological individualism (Coleman) is *structural individualism,* which admits of social wholes existing independently of individuals.

Coleman and rational choice

Theories of "rational choice" gained wide attention during the 1980s in the fields of sociology, economics, and political science. This was at once a reaffirmation of individualistic analysis and a fundamental critique of individual-based social science. In launching the approach, sociologist James S. Coleman gave a forceful critique of Talcott Parsons' effort to develop a general theory of social action. Coleman argued that Parsons and subsequent scholars had found no way to move from individual-level behavior up to aggregate levels. In response, Coleman proposed the replacement of economist-style psychological assumptions for the behavior of individuals with general utility functions that could be specified as appropriate for any discipline. Then, Coleman proposed multiple avenues of analysis reaching intermediate levels of aggregation. In principle, rational choice analysis gave attention to intermediate-level structures (such as institutions) through which individuals worked to mediate their place in society. This was formally an argument for attention to multiple scales and variance in social situations.

Economist Gary Becker joined with James Coleman, theorizing mid-level behavior by proposing analyses of discrimination against social minorities, of crime, of formation of human capital, and economic analysis of family behavior. This approach came to be known as "rational choice theory," and it was enthusiastically adopted in economics, sociology, and political science. In practice, this wave of new research did not bring a rapid consensus either on the nature of individual utility functions or on intermediate-level connections between individuals and society as a whole. Instead, rational choice analysis was ironically absorbed into the expanding paradigm of

neoliberal thinking, with its emphasis on individualistic philosophy and principled opposition to the regulation of private institutions (Manning, *Methods for Human History* (2020).

Definition and functioning of institutions

In most of the preceding sections, the discussion is *about* the existence and interactions of social groups and institutions, but I do not include an explicit analysis of institutions and their dynamics. Instead, elaborate formulations of individual action are intended to reflect or convey the dynamics of society and its groups. In this section, I offer a contrast to the preceding sections by offering preliminary definitions and summaries of dynamics that focus on institutions and that explicitly include the role of individuals in institutions.

A social institution is an organizational form—a we-group with explicit or implicit objectives, involving human activities, behavior, and norms. Institutions are constructed, supported, and reproduced by members of one or more groups, requiring we-mode and accompanying outlooks in identity and activities. The institution defines ground rules on how to act for a collective item with a signified symbolic or social status in a collectivity. Specific institutions have dynamics arising from the character of their activities. For example, institutions of agriculture experience choices that are different from the choices facing institutions of warfare. More specifically, the general process of creating and preserving a social institution requires the following steps, all carried out by a relevant we-group or set of we-groups:

- *Create the institution*. Members (1) join, (2) agree on the institutional objective, (3) agree to work for the objective, (4) demonstrate required expertise.
  - Members show how syntactic language works as an institution. All must meet a level of expertise (or serve as apprentices); all accept agreed-upon vocabulary and syntax; norms allow for suggesting innovations; all participate in speech and listening, thus sustaining the practice of language; reproduction occurs through teaching individuals of next generation. Apprentices agree to accept correction until they reach required level of expertise. (But how does the work of elaborating the language continue?)
  - Language fertilizes other institutions: community sustains language; ritual sustains community; projects arise on imagining the supernatural; the creation of visual art; the rise of social institutions such as marriage and institutions for discussing tool manufacture and use.
- *Identify institutional beneficiaries*. Those expected to benefit from the institution should be individuals and groups within the institution and, commonly, beyond the institution.
- *Identify a "generation."* A generation is the time period in which the institution must be reproduced if it is to survive.
- *Perform the institutional function*. The institution functions through collaborative work or division of labor. Its benefits are expected to reach the beneficiaries.
- *Respond to institutional dynamics*. Operation of a new institution necessarily reveals unsuspected dynamics that are specific to the institutional domain. The institution must adapt to these dynamics.
- *Construct and update an archive*. Information needed for reproducing the institution for the next generation must be stored and available for recall.
- *Assess fitness of institution*. The institution will be assessed for its fitness by its members, beneficiaries, and other influences, roughly every generation.
- *Reproduce and regulate the institution*. Members reproduce the institution, drawing on the archive for direction. Regulation of the institution can take place from within and from outside the institution, dependent on its apparent strengths and weaknesses.

As a parallel, Johannes Urpelainen (2011) proposes a general modeling of the imagining and creation of institutions, also involving a collective intentionality and a sense of strategic objectives throughout.

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Conclusion

The various levels of individuality and group behavior outlined here are numerous and are defined according to widely varying criteria. Some effort to combine them seems worthwhile, as it helps to identify how individuals and groups formed into social institutions. However, it will be difficult to locate the full range of formulations of groups and individuals.

As I see it, the best path forward is to identify key logical steps that enable full recognition of the role of individuals within institutions and understand the agency and dynamics of institutions within social processes. A related task, once such steps are identified, will be to determine which of the existing logical elements of individualism can be preserved and which need to be jettisoned as illogical within the new framework.

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