Psychological and Sociological Pre-Adaptations of Humans to the Transition to Superorganisms

Selin Kesebir
London Business School

Socio-Technological Evolution of the Human Species Conference
23 September 2019

How and when are human groups like superorganisms?

The Superorganism Account of Human Sociality: How and When Human Groups Are Like Beehives

Selin Kesebir[1]

Personality and Social Psychology Review
16(3) 233–261

DOI: 10.1177/1088868311430834
http://pspr.sagepub.com
SAGE

Superorganismic Properties

(1) mechanisms to integrate individual units through communication

(2) mechanisms to achieve unity of action

(3) low levels of heritable within-group variation

(4) a common fate

(5) mechanisms to resolve conflicts of interest in the collective's favor

Superorganismic Properties

(1) mechanisms to integrate individual units through communication

(2) mechanisms to achieve unity of action

(3) low levels of heritable within-group variation

(4) a common fate

(5) mechanisms to resolve conflicts of interest in the collective's favor

1) Mechanisms to integrate individual units through communication

Human mechanism to integrate individual units

1) Symbolic communication
2) Nonverbal communication

Symbolic Communication

- Language is implicated in all the other superorganismic properties
- Language facilitates coordination, planning, and commitment; enables social control through reputation transmission; and serves as a carrier of cultural values and norms.

Symbolic Communication

- Symbols also promote group identity and cohesion by defining who is “in” and who is “out.”
  - Why are there so many languages?
  - Why do languages keep changing?
- Symbolic group markers are so potent that they can uphold very abstract groups such as nations.
- Newly independent nation-states often embark on massive symbolic projects (Birch, 1989). Nation builders declare an official language and create paraphernalia such as a flag, a national anthem, and new military uniforms. They rename towns, buildings, and capital cities.

Nonverbal communication

- Human beings also communicate through their bodily expressions.
  - Mirror neurons are activated when someone both does an action and observes someone else perform it (Rizzolatti & Craighero, 2004).
- Corresponding internal states can be achieved between two people in the absence of any symbolic exchange

Synchronous Movement

- The anthropological record shows that festive dancing was a very significant aspect of prehistoric human life (Ehrenreich, 2006).
- It is reported to create a strong sense of communal bonding, and described as the “biotechnology of group formation” (Freeman, 1995)

Synchronous Movement

"As the dancer loses himself in the dance, as he becomes absorbed in the unified community, he reaches a state of elation in which he feels himself filled with an energy of force immensely beyond his ordinary state . . . finding himself in complete and ecstatic harmony with all the fellow-members of his community, experiences a great increase in his feelings of amity and attachment towards them."

(Radcliffe-Brown, 1933/1948, p. 252)

Synchronous Movement

- Military drill may evoke a similar state:

  "Words are inadequate to describe the emotion aroused by the prolonged movement in unison that drilling involved. A sense of pervasive well-being is what I recall; more specifically, a strange sense of personal enlargement; a sort of swelling out, becoming bigger than life, thanks to participation in collective ritual."

  (McNeill, 1995, p. 2)

Superorganismic Properties

(1) mechanisms to integrate individual units through communication

(2) mechanisms to achieve unity of action

(3) low levels of heritable within-group variation

(4) a common fate

(5) mechanisms to resolve conflicts of interest in the collective's favor

Mechanisms to achieve unity of action

1) Shared intentionality
2) Social identity processes
3) Deference to legitimate authority

Shared intentionality

- *Shared intentionality* is the ability to participate with others in collaborative activities with shared goals (Tomasello, 2009; Tomasello, Carpenter, Call, Behne, & Moll, 2005)
- *Joint attention* is the most elemental skill of human collaboration (Moore & Dunham, 1995)
  - Human eyes seem to be designed to enhance the gaze signal, whereas nonhuman primate eyes seem to be designed to camouflage it.
- A first step toward united action is a shared mental picture of the world *(shared reality)*. People are willing to believe things only because others are believing them, such as money (Harari, 2014).

Social identity processes

- When people identify with a group they incorporate the group into their self-concept
- As a, group-relevant events also affect emotions and cognitions about oneself:
  - male basketball and soccer fans experience a testosterone surge after their team's victory and a testosterone drop after the team's defeat (Bernhardt, Dabbs, Fielden, & Lutter, 1998)
  - political behavior is driven by collective rather than individual interests (Kinder, 1998). Southern black college students'
  - participation in the civil rights movement, was predicted more strongly by their feelings about the treatment of black Americans in general than by their discontent with their own lives (Orbell, 1967).

Deference to legitimate authority

- In general, within human groups deference is freely given based on status rather than obtained through coercion (e.g., Milgram studies) (Henrich & Gil-White, 2001).
- High status is usually bestowed on those who are expected to contribute most to valued group goals (Berger, Cohen, & Zelditch, 1972;Tyler, 1997; Willer, 2009)
- Leadership is firmly tied to social identity processes. An effective leader is someone who can create a powerful sense of “us,” who is perceived as “one of us,” and who is able and willing to advance “our” interests (Haslam, Reicher, & Platow, 2010)

Superorganismic Properties

(1) mechanisms to integrate individual units through communication

(2) mechanisms to achieve unity of action

(3) low levels of heritable within-group variation

(4) a common fate

(5) mechanisms to resolve conflicts of interest in the collective's favor

Low levels of heritable within-group variation

- Human groups do not have the genetic relatedness of ant and bee colonies. Migration and intermarriage rates are high, and human genes often mix across group boundaries (Rogers, 1990).
- However, phenotypical variation in human groups is largely the result of culture, which functions like a social “inheritance” mechanism that promotes phenotypical similarity (Boyd & Richerson, 1985; Jablonka & Lamb, 2005)

Cultural learning

- Cultural differences arise and persist because human beings readily absorb language, attitudes, skills, and norms from members of their groups.
- The power of normative influence was established in classical studies of social psychology (Asch, 1956; Deutsch & Gerard, 1955; Sherif, 1936).
- The key determinant in norm compliance is identification with the group:
  - In one Asch-type study, psychology students conformed 58% of the time to other psychology students but only 8% of the time to ancient history students (Abrams, Wetherell, Cochrane, & Hogg, 1990).
- People care more about group members' norm compliance:
  - According to the "black sheep effect," people are less tolerant toward a norm transgressor who belongs to their ingroup rather than an outgroup (Abrams, Marques, Bown, & Henson, 2000; Marques & Yzerbyt, 1988).

Superorganismic Properties

(1) mechanisms to integrate individual units through communication

(2) mechanisms to achieve unity of action

(3) low levels of heritable within-group variation,

(4) a common fate

(5) mechanisms to resolve conflicts of interest in the collective's favor

Common Fate

- Common fate aligns the interests of individual subunits
- Reproductive interests do not overlap much within a group but humans have alternative means of leveling the variation in individual fates.

Egalitarianism

- Reproductive interests do not overlap much within a group but humans have alternative means of leveling the variation in individual fates:
  - A sense of fairness which runs so deep that people might feel guilty for surviving catastrophes when others have not (Niederland, 1961).

Egalitarianism

- Human beings have a sense of fairness. Some people feel guilty for surviving catastrophes when others have not (Niederland, 1961).
- In experimental setups, people are willing to pay from their own pockets to secure egalitarian outcomes for others (C. T. Dawes, Fowler, Johnson, McElreath, & Smirnov, 2007).
- Envy generates ill will and hostility toward those perceived to have advantages. It serves egalitarian outcomes as potential targets of envy try to deflect the “evil eye” by sharing their fortunes or engaging in other acts of appeasement
- Monogamy and food sharing are two means of “reproductive leveling” in human societies (Alexander, 1987; Bowles, 2006).

Intergroup Warfare

- Perhaps nothing aligns individual fates more compellingly than warfare.
- The evidence suggests that warfare was a common feature of human prehistory




Superorganismic Properties

(1) mechanisms to integrate individual units

(2) mechanisms to achieve unity of action

(3) low levels of heritable within-group variation,

(4) a common fate

(5) mechanisms to resolve conflicts of interest in the collective's favor

Moral emotions

- In humans, moral emotions provide internal rewards for cooperation and internal costs for noncooperation (Haidt, 2003; Tangney, Stuewig, & Mashek, 2007).
  - The anticipation of shame, embarrassment, and guilt makes individuals resist the temptation of acting in nonnormative or noncooperative ways
  - Distress at others' suffering prevents us from harming others
  - Gratitude motivates us to reciprocate benefits.
- Moralistic anger leads people to impose sanctions on non-cooperators
- Humans also have moral reactions to events that do not directly concern them

Social control

- Sanctions may entail very little or no cost to the punisher when they take the form of social disapproval or exclusion.
- People are deeply averse to criticism, ridicule, and ostracism and strongly motivated to get others to approve and like them (Baumeister & Leary, 1995; Leary, 2001; Williams, 2001). They thus watch their reputation
- Human groups value cooperative norms (e.g., honesty, reciprocity, generosity, and hospitality) and teach them to their children (Brown, 1991)

When are human groups more likely to display superorganismic properties?

The superorganismic trigger

- Human superorganismic potential is prompted by external threats and relaxed under conditions of peace and plenty

The superorganismic trigger

- A threat to the group is a major trigger for social cohesion (Branscombe, Ellemers, Spears, & Doosje, 1999; Brewer & Campbell, 1976; Dion, 1979; LeVine & Campbell, 1972)
- A review of the literature concluded:

  "Group-level threat combined with high group commitment is associated with perceptual, affective, and behavioral reactions aimed at the group reasserting itself in terms of either value or distinctiveness. This may lead to a high degree of self-stereotyping, expressions of strong ingroup loyalty, and a readiness for collective action." (Ellemers, Spears, & Doosje, 2002, p. 178)

The superorganismic trigger

- The threat to a group is most acute in war
- Sociologist Nisbet (1953/1990) wrote:

  > "Society attains its maximum sense of organization and community and its most exalted sense of moral purpose during the period of war" (p. 35).

I believe that it is nothing less than the assurance of immortality that makes self-sacrifice at these moments so relatively easy… I may fall, but I do not die, for that which is real in me goes forward and lives on in the comrades for whom I gave up my life.

-- Gray, 1959

The superorganismic trigger

- Political scientists have named the patriotic reactions to external threats the “rallying around the flag” reflex (Lee, 1977; Mueller, 1973).
- This reflex manifests itself as increased support for leaders during times of war or international crisis
  - Immediately after 9/11, George W. Bush’s approval rating catapulted from 51% at the beginning of September 2001 to his all-time high of 90% at the end of the month (Willer, 2004)

Conclusion

- Human beings display each superorganismic property and thus have the capacity to create and function in superorganismic structures

What is…

_____ : *“a collection of many individuals united into one body …, having perpetual succession … and … with the capacity of acting, in several respects, as an individual…”*

Corporation : *"a collection of many individuals united into one body, under a special denomination, having perpetual succession under an artificial form, and vested, by policy of the law, with the capacity of acting, in several respects, as an individual…"*

-- Stewart Kyd, 1794, author of the first treatise on corporate law in English

Conclusion

- Human beings display each superorganismic property and thus have the capacity to create and function in superorganismic structures.
- Group identification is a key mechanism that activates human superorganismic properties
- Threats to the group are a key activating condition for superorganismic properties.
- The superorganism lens offers a unified explanation for many psychological phenomena that have been treated piecemeal so far