

# PARTICIPATORY AUTONOMY

CARL DISALVO, JEFF MAKI,  
AND NATHAN MARTIN

OF THE CARBON DEFENSE LEAGUE

DARA GREENWALD

CHRISTA DONNER

JACK FISHER

RICK GRIBENAS

MARK HERELD

TODD MATTEI

CLAIRE PENTECOST

DEBORAH STRATMAN

ANDY YANG

SABRINA RAAF

JOHN TILLMAN

MICHAEL WORKMAN

INDUSTRY OF THE ORDINARY

AMY YOUNGS

SUBROSA

PATRICK LICHTY

ANDREA POLLI

WITH FOREWORD

BY HANNAH HIGGINS

©2006 BY RICK GRIBENAS, THE AUTHORS, AND THE ARTISTS.  
ALL RIGHTS RESERVED. NO PART OF THIS PUBLICATION MAY BE REPRODUCED  
IN ANY FORM WITHOUT PRIOR WRITTEN PERMISSION FROM THE PUBLISHER.

ISBN 978-1-57027-190-8

BOOK DESIGN  
JONATHAN KROHN  
JKROHN@GMAIL.COM

EDITED BY REBECCA SULLIVAN

PRINTED IN USA  
PRINTED BY NEW IMAGE PRESS  
IN COORDINATION WITH SMITH COMMUNICATIONS  
PITTSBURGH, PA

DISTRIBUTED BY  
AUTONOMEDIA  
POB 568 WILLIAMSBURGH STATION  
BROOKLYN, NY 11211 USA  
718-963-2603  
INFO@AUTONOMEDIA.ORG  
WWW.AUTONOMEDIA.ORG

COLLEGE OF ARCHITECTURE & THE ARTS

**UIC** School of  
UNIVERSITY OF ILLINOIS  
AT CHICAGO Art and Design

THESIS:  
ANTYTHESIS  
(CONSIDERING  
PARTICIPATION  
AMONG THE  
TINY)

ANDY YANG

“Go to the ant, you sluggard. Consider her ways, and be wise; which having no chief, overseer, or ruler, provides her bread in the summer, and gathers her food in the harvest.” — Proverbs 6:6-8

An art student came to my insect class the other day. She was looking into the possibility of taking the course, and wanted to observe how I approached teaching the subject. She sat listening, but halfway through at the break she left and never came back. I figured that was that, until two days later when we happened to see each other on the train.

We got to talking about things, and she admitted that the course didn't seem much to her interest. As a possible participant, she wasn't so keen on collecting and identifying insects but instead wanted to learn the details about insects like bees and ants. She explained that she had become fascinated with the similarities between the behavior of ants and people, and that this fascination was influencing her work.

She didn't elaborate, but I wondered exactly what she meant by the comment. Was she possibly referring to the tendency for both ants and people to spend so much of their time grooming? Or were we, like little ants in (literally) an underground tunnel, feeling each other out? Like ants, humans are *such* social creatures. Many creatures live in groups or co-mingle, sure. But often this is only for the brief purposes of mating, to participate in a safety-in-numbers scheme, or simply a case of what might be called “synchronous loitering.” Humans, however, not only spend our time together, we work intimately and coordinate amongst ourselves to get things done (like raising barns, working in bucket brigades, and organizing political rallies).

No, creatures like ants, bees, and termites demonstrate something special, something truly collaborative and evocative enough to us that the authors of the Bible, Aesop, and the producers of the movie *Antz* all see a story reflected in their lives that humans can not only relate to, but even learn something from. But what is the lesson, the wisdom of the hive?

Russian anarchist Peter Kropotkin claimed to know in 1902. In his book *Mutual Aid: A Factor of Evolution*<sup>1</sup> he laid out one long argument for how the social lives

of animals could teach us what we needed to know about living together, and his poster children were the ants:

In that immense division of the animal kingdom which embodies more than one thousand species, and is so numerous that the Brazilians pretend that Brazil belongs to the ants, not to men, competition amidst the members of the same nest, or the colony of nests, does not exist. . . . Mutual aid within the community, self-devotion grown into a habit, and very often self-sacrifice for the common welfare, are the rule. The ants and termites have renounced the 'Hobbesian war,' and they are the better for it.

It is all pretty clear: cooperation over competition, mutual aid within the community. Kropotkin continues, "The morality which emerges from the observation of the whole animal kingdom may be summed up in the words: 'Do to others what you would have them do to you in the same circumstances.'"

The ants in the colony form a network of collaboration. Some forage, others tend the brood. But they all work on behalf of the colony and its growth and reproduction. The goals of every individual are met by their participation in the group!

But this is all too easy. Are the goals of all the ants, after all, any different? If their goals aren't at least somewhat different, then their mutual aid is not really "all that," because there is no potential conflict to negotiate among them. Like thousands of cells in a body, it would seem they are really part of the same individual. As a model for human affairs this would seem to be poor soil.

#### Using a Magnifying Glass

And yet ants may still provide a fertile model for thinking about human collaboration, more apropos than Kropotkin himself realized. The useful details are in fact the ones Kropotkin was not aware of. In the framework of current biology, we now know that what first appears to be seamless mutuality in an ant colony is actually, upon closer inspection, a community burgeoning with conflict.

In the world of an ant colony, a worker ant may be more than happy to forego her own reproductive rights and instead help her mother raise more sisters: some who

will be other workers, and some who will become reproductive “queens” and go on to found their own colonies. According to evolutionary biology, natural selection favors traits in an individual that maximize the passing on of its own genes. Then why do they all cooperate? This is because the unusual genetic system of ants (which they share with bees and wasps) that results in sisters being more closely related to each other than to their own daughters. In the calculus of genes passed on then, rearing a sister who will become a reproductive queen is better than having a daughter that will become a queen.<sup>2</sup> This is the basic template for the mutuality of ant colonies. Queens lay the eggs and the workers rear them in a collaboration of mutual benefit because both are maximizing their reproduction in terms of the genes they are passing on.

But things become complicated quickly in this family. Because ants in a colony are not clones (like cells in a body), the genetically different individual ants do still have a conflict over the particular details of reproduction. For example, according to the math of ant genetics and reproduction, it turns out that queens and workers of a colony are predicted to have different ideal optima for what proportion of the offspring that the colony produces should be male versus female. The queen is predicted to want a 1:1 female-to-male sex ratio whereas the workers are predicted to want a 3:1 ratio.

In fact, the sex ratio is only one of many conflicts that members of the colony can have. Mapped in Figure 1 we see the structure of conflicts that are predicted to simultaneously exist regarding other colony “goals.” Each network of potential conflicts has its own unique structure. How these conflicts are resolved can vary just as much: sometimes force is involved (a worker eating a male egg of the queen), other times one party doesn’t have enough of the necessary information to act (is this a male egg another worker laid sneakily, or is this a male egg of the queen?), and still in other circumstances the conflict over one goal might actually help resolve the conflicts over another.

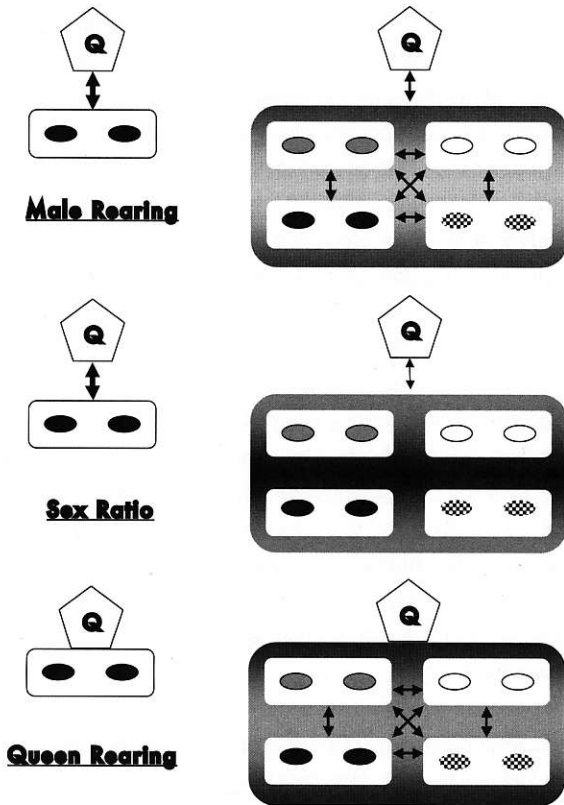


Figure 1: A network of interactions. These diagrams schematize the potential conflicts that can arise in the societies of ants, bees and wasps over what offspring the colony produces. Pentagons are reproductive queens and ovals are the workers of the colony, who are daughters of the queen. On the left side are colonies in which a queen mated only once. When the queen mates more than once (right side) the workers will be composed of various half-sisters, as denoted by ovals of different colors grouped together.

Three aspects of colony production are shown: the rearing of male offspring; the proportion of male and female offspring produced (sex ratio); and the rearing of females destined to become new queens. The arrows represent the potential or actual conflicts that exist among the different members of the colony over these colony productions. The thicker the arrow, the greater the conflict; when arrows are not present, conflict is not predicted to be present according to Inclusive Fitness Theory. Adapted from Ratnieks et al., Conflict Resolution in Social Insect Societies, *Annual Review of Entomology*, 51 (2006): 581–608.

In the case of sex ratio, the queen can often control the sex of the egg it lays, but the workers have control over its growth & rearing. Since both parties have a controlling hand in different steps of the creative process, a middle ground is achieved. In all these cases, however, resolution of conflict is best understood as an unplanned consequence of an active push-and-pull, rather than any actual compromise of "goals" or "ideals" among the participants.

Figure 1 also illustrates that whether the queen has mated once (and so the colony is made up of workers who are full-sisters), or whether she has mated multiple times (and thus the colony is composed of half-sisters), also makes a big difference. Affinity through kinship matters. Kinship determines the degree of individuality the ants recognize as having in regards to themselves, their siblings, their potential offspring, and the colony as a whole. Any ant then is participating in multiple kinds of individuals at once and helping to negotiate their various ends. Because all the members of the colony have a higher reproductive output in the colony than they would alone, the benefit of cooperation offsets the cost of conflict. The colony as an individual is more like a confederation of mutual interests and less a flawless single will.

Who's who?

This understanding of an ant colony offers a much more interesting model from which to consider human relations. However, in this model may lie the implication that nature is harsh and brutal and that cooperation is merely expeditious means to a selfish end. After all, the explanation above stems from evolutionary biology, and it was the apparently individualistic and competitive nature of Darwin's principle of natural selection that inspired Kropotkin to write his book over 100 years ago in the first place

And times haven't changed much. The Left has for some time disparagingly criticized the ant biologist E. O. Wilson for his theory of sociobiology, which analyzes social behaviors in all animals (humans included) in terms of survival and reproduction. His Pulitzer Prize-winning book *On Human Nature*<sup>3</sup> was seen by many as recasting our understanding of complex cultural practices and heartfelt human tendencies as simply competitive and deterministic algorithms honed by natural selection. If anything, an evolutionary explanation seemed to bolster the notion that individualism and competition were the

natural order of things, and therefore also justification for Right wing social and economic notions.

But to the extent that such an accusation would be unfair to Wilson, taking Kropotkin at his word for the “right reasons” politically would be perhaps an even bigger mistake. Indeed, Kropotkin was more of a sociobiologist than Wilson ever was. While Wilson has described ant colonies in the metaphor of a “factory-fortress,” Kropotkin likewise understood that outside the colony-community things weren’t necessarily so copacetic:

“Among ants it [mutual aid] does not extend beyond the anthill. All sociable customs, all rules of good behavior are applicable only to the individuals in that one anthill, not to any others. One anthill will not consider another as belonging to the same family, unless under some exceptional circumstances, such as a common distress falling upon both.”

Kropotkin then goes on to extend this notion by analogy to “savages” in a way that seems almost a caricature of what contemporary sociobiology is accused of: “And the savage will look upon a savage of another tribe as a person to whom the usages of his own tribe do not apply. It is even allowable to sell to him. . . .”

All this seems like a pretty big exception to the idyllic notion of mutual aid. If all cooperation stops and fierce competition starts at the border of the community then it seems the whole project of mutual aid is in jeopardy; it simply pushes the conflict of “us versus them” to a different level of organization without really resolving anything. Alas, the “Hobbesian War” continues.

This highlights the more important and more fundamental question in considering cooperation: who is my community anyway? That is, who am I as an individual to the group, and what kind of individual is this group relative to other groups? The preoccupation with labeling interactions as “competition” or “cooperation” misdirects us from the larger question of “Who exactly the inter-actors are and how they are defining themselves.” What if cooperation and participation are consequences of how participants identify, and not causes in and of themselves? And what about having more than a single identity at once? These are important possibilities that Kropotkin neglected.

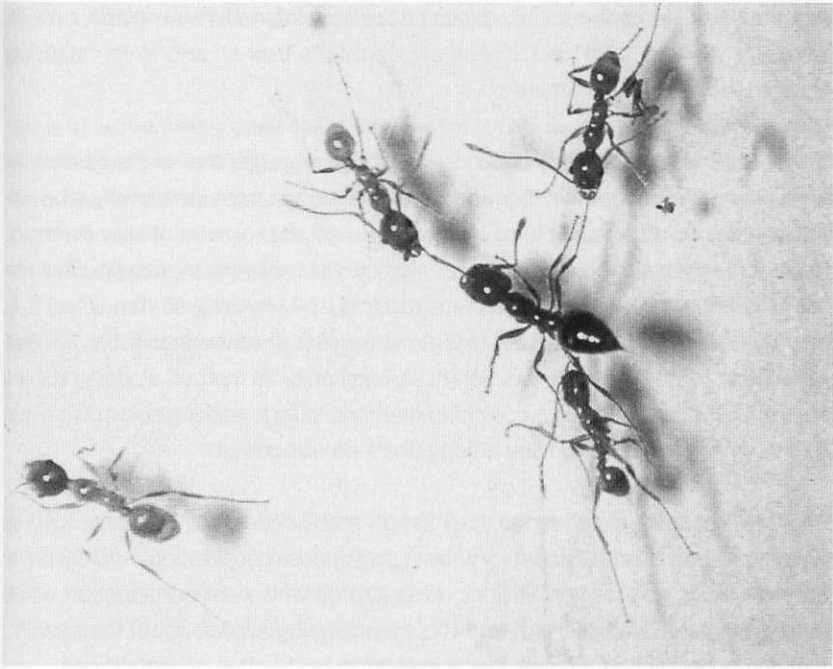


Figure 2: Ants in a moment of cooperative competition? Three ants of the species *Pheidole morrisi* work together to subdue and pull apart an ant of another species — the fire ant *Solenopsis invicta*.

For a Marxist anarchist, the social dynamics of ant colonies could all too easily and seductively be cast as a class struggle between workers and queens, or a “dialectic” in which competition and cooperation are contradictions — thesis & antithesis — that are “sublated.” But where can that framework really get us? Nowhere very specific or particular. If we demand some analogy, then the understanding of ant sociality in contemporary biology is a more fruitful one for considering collaboration exactly because the dynamics are complicated and because they involve various interests that have to be (and can be) negotiated in a collaborative group.

On the other hand, it is also important to recognize that ants are not participating the way we are, and are not likely making decisions in the same sense. They individuate themselves by pheromones and antennal probings, by a precise (but precisely limited) world of smelling and groping. Our own fair share of smelling and

groping aside, humans also individuate on the basis of matters like credo, politics, sexuality, fashion, and food. These are decisions that an ant, in its relatively scripted existence, never makes.

Unlike ants, whose genetic kinship is the underlying algorithm of their behavior, we allow psychological kinship and camaraderie to shape powerfully who we are socially. And so rather than competition and cooperation, it may be more meaningful to think about agents with agency. Does this mean, though, that we are inherently selfish? Maybe. But maybe this isn't anything so dire when it is also acknowledged that we have in fact many kinds of selves that act as various individuals at the same time: as Sarah, as mechanic, as mother, as daughter, as a scientologist, a citizen, as a book club member. In fact, working solo could even be thought of as a collaboration among one's various selves.

Ants are a plurality of selves too, they simply aren't defined by the same kind of agency we have. Certainly conflict doesn't presuppose cooperation. And certainly ants are a limited analogy. Still, for us sluggards who want participation while "having no chief, overseer, or ruler," this means being explicit about the specific individuals and agents we consider ourselves to be. Such is my anty-thesis.

#### Notes & References

1 Kropotkin, P. A.. *Mutual Aid: a Factor of Evolution*, London: William Heinemann, 1902. Full text available free from Project Gutenberg: <http://www.gutenberg.org/etext/4341>

2 The connection between genetic relatedness and cooperative behavior discussed here is known as "Inclusive Fitness Theory." The central idea is that the degree of relatedness (measured by the proportion of gene-variants that individuals share) is the best predictor of social behavior. These ideas were first fully articulated in the following papers:

Hamilton, W. D. "The genetical evolution of social behaviour. I"  
*Journal of Theoretical Biology*, 7(1) (1964): 1-16

Hamilton, W. D. "The genetical evolution of social behaviour. II"  
*Journal of Theoretical Biology*, 7(1) (1964): 17-52.

Trivers, R. L. and H. Hare. "Haplodiploidy and the evolution of the social insect." *Science*, 191(4224) (1976): 249-263.

Biologists such as Richard Dawkins have interpreted this to mean that genes are the fundamental unit of evolution and that we as individuals are just "vehicles" that genes selfishly make use of to perpetuate themselves. However the model just as easily supports the view that we as individuals are not in fact unitary, but rather a diffused and dispersed biological entity. All of those related to us are genetic extensions of the bodily self with which we are so preoccupied.

3 Wilson, E. O. *On Human Nature*. Cambridge: Harvard University Press, 1978.