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## INTRODUCTION

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The origins of immunology can easily be traced to the 19th century. But in the late 1960s the notion of an “immune system” first appeared, marking a conceptual shift in which immunity involved not only sensitive reactions to allergens and pathogens, but an orchestrated cellular defense in which complex responses protected an autonomous self. Since then, immunity has in broad terms come to be understood primarily as a dynamic process of recognizing and eliminating so-called “non-self.” However, over that same period, immunologists have gradually grown dissatisfied with the general self–nonself construct as they grapple with the disjunction between what they evidence experimentally, and received ideas about organic preservation and the effects of “foreign” bodies on a self that is otherwise sovereign.

This disjunction has increasingly demanded a serious rethinking of the nature of selfhood, reaching far beyond the constraints of bench science. Why is anthropology so relevant to this emerging change in a scientific subspecialty? One answer is that immunology and virology are not only the very sciences that focus on the individual as “self” but also the sciences, it could be argued, that most embody social constructions of personhood and, today, prevailing neoliberal ideas about individual autonomy. Cultural discourse influences medicine as does medicine influence culture; our everyday notions of selfhood affect as much concepts of mortality and morbidity as concepts of health and illness affect our views on agency and autonomy.

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2 Some 15 years ago, Anne Mare Moulin—medical doctor, infectious disease  
3 researcher, and noted historian of immunology—organized a uniquely interdis-  
4 disciplinary series of seminars through La Fondation Mérieux and l’Institut Pasteur  
5 involving theoretical immunologists and social scientists. Thanks to those events,  
6 and support from my then-colleagues at the Harvard Medical School Department  
7 of Social Medicine, I had the opportunity to participate in a number of the ensu-  
8 ing exchanges. These seminars focused on emerging research and the relationship  
9 between accepted wisdom and new scientific theories. The opportunity to meet  
10 together groups of leading immunologists in an interdisciplinary forum was both  
11 novel and telling.

12 At that time the dominant idea of the immune system (as a device for recog-  
13 nizing and expelling foreignness) was raising problems in theoretical immunology,  
14 but otherwise remained largely unchallenged—at the bench, in clinics, and in the  
15 popular imagination where the “body at war” mirrored earlier postwar ideas about  
16 eliminating infectious diseases such as smallpox and polio. The meteoric growth  
17 of microbiology after the World War II had already set the stage for viruses to be  
18 conceptualized as infectious agents, even though viruses, unlike bacteria, have no  
19 mobility and cannot strictly speaking invade cells independently. In short, the body  
20 was seen as a fortress, and the immune system its mechanism of defense.

21 Thus, from the dawn of the Cold War—era well into the 1980s, bacteriology  
22 (where living infectious agents often struggle against one another) had more or less  
23 eliminated embryology (where symbiosis is essential) as immunology’s parent field.  
24 Stem cells had not yet emerged as enough relevant for anyone to give serious thought  
25 to the fact that modifying naive, “uncommitted” embryonic growth might prove  
26 more successful in addressing illness than simply killing off diseased cells. Because of  
27 the dominance of immunology’s now central “recognition and elimination” model,  
28 research programs in the field remained based largely on unexamined assumptions  
29 about bodies as autonomous, prior, and persistent entities. Likewise, the popular  
30 press heralded evolutionary arguments about “selfish” genes that survived battles  
31 against other independent life forms to reproduce through competition, rather than  
32 survive through awareness of similarity and difference.

33 Although theoretical immunologists in the 1980s and 1990s grew demon-  
34 strably more vexed by the failure of the self–nonself model of infection to ex-  
35 plain the relationship between host cells and viruses, the deeper question of  
36 whether Enlightenment-based assumptions about personhood actually drove re-  
37 search along specific trajectories remained largely unconsidered. The legacy of René  
38 Descartes’s “cogito ergo sum” not only epitomized the fundamentally solipsistic

2 nature of the self but also left wholly unexamined the more complex question of  
3 whether alternative notions of personhood could challenge how we conceptualized  
4 immunity.

5 Thus, despite the fact that the “immune system” (as opposed to “immune  
6 responses”) could not be easily verified, most researchers came to live, if on  
7 occasion uncomfortably, with the idea that immunity was a process by which  
8 some autonomous, selfish being raised a defense against invasive agents through  
9 an orchestrated recognition and elimination of otherness. The basic trope—that  
10 defense involved systematic immunologic recognition and cleansing of difference—  
11 became dominant in science, as indeed it yet still so remains in popular discourse.  
12 Such a model, however, is now increasingly thought to be at least misconstrued, if  
13 not wholly inadequate.

14 The problems created by mapping a microbiological model onto a viral one  
15 were taken up in a number of papers and presentations and eventually in my  
16 2003 book, *The Age of Immunology: Conceiving a Future in an Alienating World*. There I  
17 argue that in applying non-Cartesian models, the immune system could as readily be  
18 understood as a search for difference, as it could a defense mechanism for eliminating  
19 otherness. Taking my basic 2003 argument and simplifying it, I began to present  
20 the idea in various settings, speaking and debating alongside immunologists, and  
21 eventually bringing the argument back to anthropologists themselves who have  
22 traditionally studied personhood cross-culturally.

23 In a version of the argument presented at the University of Malta in March  
24 2010, my respondent, Paul Clough, developed the neoliberal critique outlined for  
25 the present forum. Now, a group of anthropologists, including but not limited to  
26 those in this discussion, are taking a longer look at the question of how anthropology  
27 might actually not only critique this domain of scientific practices but also inform  
28 it. After all, the extraordinary diversity of ways in which humans have understood  
29 themselves produces an equal diversity of ways in which they conceptualize the  
30 body as host for various symbiotic exchanges.

31 “NonselF Help” outlines, then, some of the reasons why the self–nonself model  
32 is being abandoned by immunologists, and raises the question of how anthropol-  
33 ogy might engage immunology more directly. In particular, it examines those  
34 paradoxes that now challenge immunology’s previously unexamined assumptions  
35 about personhood, arguing that they are readily resolved by transcending Enlight-  
36 enment categories. In assessing these paradoxes it also challenges parallel notions  
37 of determinism—of self-interest, efficiency, and agency—that are taken up in the  
38 following discussion and in other theoretical arenas that critique neoliberalism.

## INTRODUCTION

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2       The exchange following “Nonselﬀ Help” invites responses to the argument  
3 that the so-called “immune system” is as much a “search engine” as a “system of  
4 defense”—that engaging diﬀerence is not only an eliminating process but also an  
5 assimilating one.

6       In addressing this argument, respondents also contribute to the core question  
7 of whether the adoption of anthropologically abundant “non-Cartesian” notions of  
8 the self can reshape central paradigms that inform if not govern this important  
9 domain of scientiﬀic inquiry.

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