



Neo-tribalism, epistemic cultures, and the emotions of scientific knowledge construction



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ABSTRACT

Maffesoli's (1996) metaphor of the neo-tribe is useful for analyzing the emotions and spatial dynamics of group life. However, the idea of neo-tribes is not explicitly designed for making sense of the work of scientists in laboratories. To supplement Maffesoli and further understand the group dynamics of scientific knowledge construction, we draw from Knorr-Cetina's (1999) concept of epistemic cultures to highlight the ritualistic character of lab science. By showing how Maffesoli and Knorr-Cetina can supplement one another, we create an encounter between the sociology of emotions and the sociology of science to demonstrate the centrality of emotions in laboratory life. In-depth interviews and on-site laboratory observations with physicists, earth scientists, biologists and chemists form the empirical basis of this study. Commenting on the ritualistic nature of scientific lab work, as well as the emotional experiences of scientists, we analyze the role of emotions in scientists' work. We introduce the concept of value-proxemic emotions to account for the role of specific emotions in binding members to the group. We also examine the emotional experience of the creation and maintenance of group and lab boundaries, which we conceptualize as inter- and intra- tribal cooperation and conflict. Our analysis suggests that emotions are a crucial component of knowledge construction and group life in laboratory work.

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1. Introduction

Characterizations of science have only recently started to deal with the issue of emotions (see Barbalet, 2002; Shapin, 2010). Historically, the scientific persona has been associated with objectivity (Carson, 2003), high social class (Secord, 2003), authority and public trust (Shapin, 2004), and, in the case of Charles Darwin, celebrity status (Browne, 2003). While previous research has focused on the public scientific persona and individual success, little research has explored the personas within laboratory spaces and the emotions that bind these groups together. Below we investigate the role of emotions in scientific knowledge construction, paying close attention to how emotions shape the experience of laboratory life, bind scientific personas to common projects, and continuously animate scientific discovery.

Below we use the work of Maffesoli (1996) on neo-tribes to illustrate the dynamic interactions that hold groups of scientists together and, more specifically, the efficacious emotions that keep scientists connected. Maffesoli (1996) asserts that small groups

operate through proxemics, generating bonds through an emotional climate, and fostering a communal ethic. Maffesoli also addresses the kinds of friction that can emerge within and between groups and how this leads to group decomposition and reassembly. Though Purdue (2000) uses the metaphor of the neo-tribe to explain the character of groupings of scientists, he does not assess the role of emotions in group formation or knowledge construction. While Maffesoli's idea of the neo-tribe can be applied to understand the emotional dynamics of scientists working in labs, it must also be supplemented by drawing more explicitly from the sociology of science.

Important ethnographic research has been conducted on laboratories and the quotidian practices of scientific knowledge construction (e.g. Knorr-Cetina, 1981; Latour and Woolgar, 1979; Lynch, 1985). Specifically, Knorr-Cetina's (1999) ethnographic research has noted the ontological and methodological differences amongst the natural sciences. She suggests that rather than viewing scientists as embedded in scientific disciplines, the sociology of science should focus on the embeddedness of scientific experts in diverse *epistemic cultures*. While Knorr-Cetina's research has led to a greater understanding of the symbolic dimensions of laboratory practices, less emphasis has been placed on the emotions and interactions that bind the groups that make up

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epistemic cultures and the friction that can emerge in scientific knowledge networks. Below we argue that the work of Maffesoli and Knorr-Cetina can supplement one another, insofar as both Maffesoli and Knorr-Cetina focus on rituals, groups, and emotions and address the lacunas in one another's work.

Demonstrating the role of specific emotions in laboratory work, including grief, boredom, frustration, pride, joy, and excitement, we analyze the role of emotions in building and sustaining groups engaged in scientific knowledge construction. We conceptualize emotions as embodied, relational, action-oriented responses to a subject or object (Barbalet, 2001; Bondi, 2005; Probyn, 2005). We use the idea of *value-proxemic emotions* to refer to emotions that are generated through close activity on shared projects and that result in group solidarity. Underscoring the role of emotions in scientific rituals, we also examine how the tribe is sustained, and how epistemic subjects are formed through cooperation and conflict.

The principal aim of this article is to use the idea of neo-tribes to understand the emotional dynamics of how epistemic cultures take shape. This article is divided into four sections. The first section consists of three subsections. First, we review Maffesoli's work on neo-tribes, emotions, and proxemics. Second, we draw from Knorr-Cetina to clarify the character of epistemic cultures. Third, we offer a synthesis of these two theorizations of group life, emotions and rituals. In the second section, we summarize our method. To substantiate Barbalet's (2002) claim that emotions are inherent to the work of science, we then analyze the results of our research with scientists and examine the emotional experiences of scientific rituals and the role of efficacious emotions in energizing scientific discovery. Finally, we explicate the nature of inter- and intra-tribal cooperation and conflict and how these dynamics provide the basis for epistemic cultures.

2. Science, rituals, and group emotions

2.1. Maffesoli, neo-tribes, and proxemics

Many scholars, most notably Zygmunt Bauman (2000), have claimed that today we are witnessing the unbundling of social relations in work, family life, consumption, and leisure. Against the tide of scholars that have made claims about growing individualism, Michel Maffesoli (1996) argues that there has been a rise of small, ephemeral groupings that we are all members of in our daily lives. Maffesoli uses the metaphor of the neo-tribe to account for the process of disindividuation. Neotribalism consists of "fluidity, periodic assemblies and dispersals" (Maffesoli, 1993: xv). Humans are in a "state of perpetual swarm" (Maffesoli, 1996: 6) as they coalesce into tribal forms, break up, and as the persons in these tribes move from group to group.

The metaphor of the neo-tribe moves beyond the concept of the individual and toward recognition of the *persona*. The persona only finds fulfillment in relation to others, the sense of group emotion that comes with it, and the performance of roles. In the words of Maffesoli (1996: 10) the persona is the "changeable mask which blends into a variety of scenes and situations whose only value resides in the fact that they are played out by the many". Though each persona in the neo-tribe compliments the others, the "communal drive" (Maffesoli, 1996: 13) that brings neo-tribes together is emotion. The emotional experience of the neo-tribe is what gives it effervescence, serving to bond the group together and create shared focus: "the circulation of affects and passions constitutes an efficient cement for social structuring" (Maffesoli, 1993: 69). Efficacious emotions are both shared and individually experienced within the group. This will to live and be together – vitalism – is a salient facet of the neo-tribe (Maffesoli, 1996:

32–33). The shared sentiment of being part of a community is central to group solidarity. The specific ambience uniting the tribe, but also their sense of differentiation from other tribes of like kind, emanates from shared practices.

While the shared sentiment of being part of a community enables solidarity, the mechanism that gives the neo-tribe a sense of regularity is the ritual. Following Durkheim (1917/2001), for Maffesoli the ritual renews the sense of community of tribe members. As Maffesoli (1996: 17) writes, "[i]n its very repetitiveness, the ritual is the strongest proof of this expenditure and by so doing it guarantees the continued existence of the group". Vitalism is also expressed through the emotional experience of rituals (cf. Collins, 2004). While Durkheim discussed ritualized practices as organized around the sacred and the profane, this distinction is not necessary for an analysis of ritual. Instead, *meaningfulness* is the chief organizing mechanism of ritual. These rituals serve as the means by which the personas that comprise neo-tribes play their roles.

The final component of Maffesoli's framework is that the neo-tribe becomes a source of mutual aid. Members of networks help each other in and through the numerous trials, for example, in experimenting and publishing. These links are not just instrumental, but are enjoyed for the sense of belonging and group solidarity reinforced through the network. While at times the tribes can be characterized by strife, which we comment on below in our analysis of intra- and inter-group conflict, its perdurability is derived from shared sentiment and the manifold emotional experiences of the tribe.

Though useful for conceptualizing clusters and groups of scientists at work together, this notion of the neo-tribe must be qualified to account for the role that regulatory bodies play in laboratories. In our example, the university is key for the life of neo-tribes, in two respects. First, the university configures access to resources available to the tribe (Becher and Trowler, 2001). Funds for faculty hiring, space for doing experiments and storing rudiments, are contingent on the relationship between the departments and the university administration. Second, the insignia and the name of the university can have a circulating sign value appropriated by the neo-tribe during intra- and inter-tribal conflict and cooperation. Scientists may deal with other tribes on the basis of shared practices, rituals, knowledges, personas, but this relationship between tribes might also be mediated by the value of their respective universities as a sign. The neo-tribes of science exist in a particular economic and political milieu (see Merton, 1968). However, since our research methods lend themselves to "micro-sociological" investigations, we concern ourselves only with interactions and conflict in one set of relations in a small number of sites for the purpose of exploring the emotional dynamics of neo-tribes.

2.2. Knorr-Cetina, epistemic cultures, and scientific knowledge construction

Missing from Maffesoli's account is an assessment of how emotions and groups relate to scientific knowledge construction, and for this reason it must be put in contact with literature from the sociology of science. The work of Knorr-Cetina is noteworthy in this regard. Knorr-Cetina (1999) asserts that the knowledge society we inhabit is permeated with epistemic cultures: "amalgams of arrangements and mechanisms – bonded through affinity, necessity, and historical coincidence – which, in a given field, make up *how we know what we know*" (Knorr-Cetina, 1999: 1). By replacing scientific disciplines with epistemic cultures, Knorr-Cetina draws attention to the knowledge practices of contemporary sciences and illuminates the technical, social, and symbolic aspects of complex expert systems.

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