

Losing by Expanding: Corralling the Runaway Object

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Abstract

Third-generation activity theory (3GAT) has become a popular theoretical and methodological framework for writing studies, particularly in technical communication. 3GAT involves identifying an *object*, a material or problem that is cyclically transformed by collective activity. The object is the linchpin of analysis in the empirical case. Yet the notion of object has expanded methodologically and theoretically over time, making it difficult to reliably bound an empirical case. In response, this article outlines the expansion of the object, diagnoses this expansion, and proposes an alternate approach that constrains the object for case-study research in writing studies.

Keywords

Activity theory, research methodology, object

Losing by Expanding: Corraling the Runaway Object

Over the last 15 years, third-generation activity theory¹ (3GAT) has become a popular theoretical and methodological framework for writing studies, especially in professional communication. Many publications have dealt with its theory (e.g., Mehlenbacher, 2007; Mirel, 1998, 2004; Russell, 1995, 1997a, 2010) and framework (e.g., Artemeva, 2008; Berkenkotter & Huckin, 1995; Sun, 2006). At least as many have applied it to empirical studies, primarily case studies (e.g., Artemeva & Freedman, 2001; Geisler, 2003; Paretto, McNair, & Holloway-Attaway, 2007; Russell & Yañez, 2003; Spafford, Schryer, Mian, & Lingard, 2006; Spinuzzi, 2003, 2008; Walker, 2004; for overviews of activity theory in writing studies, see Russell, 1997b, 2009). Activity theory provides a way of examining complex, mediated activity in bounded cases. It supplies a socioculturally meaningful unit of analysis. It is amenable to synthesis with constructs such as genre. In short, activity theory seems custom-made for providing a sociocultural case-study framework for writing studies.

Yet activity theory has faced criticisms as well. Witte (2005), for instance, critiqued 3GAT for not providing a clear unit of analysis, one that can bound a case without being tautological (p. 141). Activity theorists might counter that 3GAT supplies just such a mechanism for bounding the case: the *object*. The object is the linchpin of analysis, the “sense-maker” around which the rest of the unit of analysis, the activity system, forms (Kaptelinin, 2005). Empirically, the object is what defines the activity system, what bounds the case intelligently so that we can make statements about the activity that cyclically achieves this object. As the linchpin, the object is critically important for a principled empirical analysis.

But how well does this linchpin work? To investigate, I briefly compared how seven case studies of professional communication, published in major writing journals in 2008–2010, applied the object in their activity-theoretical analyses. Table 1 shows the results, which are startling. Two of the studies, do not even identify an object; two others define the object based on an already-defined activity rather than the other way around; and two more present an unclear analytical relationship between the object and the activity. Remarkably, only one study unambiguously uses the object as a sense-maker to define the activity. Whether Witte (2005) is theoretically correct or not in his critique of 3GAT, these studies seem to bear out his methodological point: If activity theorists are not using the object to bound the case, they are not providing a clear unit of analysis.

(INSERT TABLE 1 ABOUT HERE)

Nevertheless, these are good studies, and they do not represent some sort of bastardization of 3GAT as we apply it to writing studies. To the contrary, we see a similar drift away from the object as sense-maker in other fields using 3GAT. This drift, I believe, springs from a fundamental tension in how activity systems are defined. The notion of the object as sense-maker is honored more in the observance—even by the originator of 3GAT himself, Yrjö Engeström.

Let me illustrate. In 1987, Engeström emphasized that the goal of his 3GAT approach was to gain phenomenological insight into an activity and then use that insight to delineate the activity system under investigation. “Expansive research is not dealing with activities ‘in general’ but with real activities realised by identifiable people in identifiable locations,” he argued. “Delineation is the very act of identifying the personal and geographical locus and limits of the activity” (Chapter 5; cf. Engeström 1990, pp. 77–79). In his early works, Engeström provided illustrations of such “identifiable people” involved in bounded activities: hunter-gatherers whose object is the quarry (Engeström 1987, Chapter 2); blacksmiths whose object is iron (Engeström 1990, p. 107); and farmers, whose object is the field that is “transformed time and again from brute earth to crops of grain” (Engeström & Escalante, 1996, p. 360). In these agricultural and craft examples, activities are strongly and closely bounded by their material objects: We can touch and examine these objects and we can witness them being

¹The term “third-generation activity theory” suggests that activity theory has developed linearly from the first generation (Vygotsky) to a second (Leont’ev, Luria, Ilyenkov) to a third (Engeström and colleagues). Engeström tells this story consistently (see for instance 1987; cf. Lompscher, 2006). But others question it, claiming that Engeström’s version of activity theory breaks theoretically and methodologically from its progenitors and that Engeström has appropriated parts from theoretically divergent areas (Avis, 2009; Bakhurst, 2009; Martin & Peim, 2009; Peim, 2009; Witte, 2005). In this article, I avoid engaging in that debate, instead focusing on Engeström’s version of activity theory (3GAT).

transformed in cyclical activity.

But by 2008, Engeström's examples seem much less bounded. For instance, Engeström described "runaway objects," which "have the potential to escalate and expand up to a global scale of influence. They are objects that are poorly under anyone's control and have far-reaching, unexpected side effects" (p. 227). Examples include global warming, narcotics, Linux, and chronic illness. Runaway objects start as small problems or marginal innovations but balloon into objects that are larger than any of the activity systems that are oriented toward (and defined by) them (p. 227). That is, objects are no longer closely bounded or material, are much bigger than the materials in which they are instantiated, are multiperspectival, and are the nexus of many different activities. Not coincidentally, they are generally not agricultural, craft, or industrial objects.

That is bad news for those of us who use 3GAT as a sociocultural approach for empirically investigating writing. This expansion of the object threatens the principled boundedness of the activity system. Without a defined object, the unit of analysis is inadequate, the case is unbounded, and the analysis is unanchored. If we expand the object indefinitely, we have a difficult time conducting principled 3GAT case studies.

I have two concerns in this article. The first is, how did we get here? How did the object run away from us, methodologically and analytically, and what are the repercussions for 3GAT studies of writing? The second is, how do we address the issue? How do we corral the runaway subject in writing studies?

Background: On the Life of the Object

Let us backtrack a bit to see how the object is defined and how it has been applied from Engeström's seminal 1987 book *Learning by Expanding* to the present. Here, we must delve into the mainstream of 3GAT: the works of Engeström and the interdisciplinary scholars who collaborate with him or closely follow his work. I bring in work from writing studies periodically to ground the discussion for our field.

The Structure of Activity

As I discussed, the object anchors the *activity system*, activity theory's unit of analysis. Drawing on earlier work such as Vygotsky and Leont'ev, Engeström (1987) first popularized the triangular representation of the activity system in Chapter 2. In the activity system, one or more subjects labor to cyclically transform an object in order to achieve an outcome. To transform the object, they use mediating instruments (physical and psychological tools). This activity takes place within a community that makes the activity meaningful, and is conducted with rules and a division of labor related to that community (see Figure 1).

(INSERT FIGURE 1 ABOUT HERE.)

The object defines the rest of the activity, which is necessary, since each point in the triangle intersects with a number of other activities. For instance, a person who serves as a subject in one activity (e.g., producing software documentation) also serves in other, unrelated activities (e.g., a political party, a church, a cosplay group). Mediating instruments used in one activity (e.g., the word processor in which the documentation is written) are also used in other unassociated activities (producing short stories or flyers for lost cats), and so on. To bound a case that may include an infinitely extensible set of associations, we need a linchpin of analysis: a sense-maker.

The Object as the Sense-Maker

For activity theorists, this linchpin is the object, particularly in its relation to the outcome. Kaptelinin called it "the sense-maker," which "gives meaning to and determines values of various entities and phenomena" (Kaptelinin, 2005, p. 5). Engeström, Puonti, & Seppänen (2003) declared that "the object determines the horizon of possible actions" (p. 152).

The object is both objective and projective²: both the raw materials and problems at hand and the use-value that is envisioned for those raw materials and problems. For example, the object of construction includes both the construction materials and the building they will form (Miettinen & Virkkunen, 2005, p. 444; cf. Kaptelinin, 2005, p. 5; Nardi, 2005). The brute earth becomes a field of grain (Engeström & Escalante, 1996, p. 360), the raw metal becomes an implement (Engeström, 1992, p. 107), the fish becomes dinner (Leont'ev, 1978, p. 63). The object is the raw material or problem space for the activity (Engeström, 1990, p. 79). It defines what counts as an activity for a particular analysis (Miettinen & Virkkunen, 2005, p. 444). And in doing so, it delineates "real activities realised by identifiable people in identifiable locations" (Engeström, 1987, Chapter 5).

The Ambiguity of the Object

And yet, despite its function as the linchpin for the activity theory analysis, the notion of the object is rather ambiguous when applied to phenomena that are less material and less concrete. Even in 1987, Engeström mixed his

² Russell (1997a) captures this double nature of the object in his term "object(ive)".

closely bounded examples and cases with examples of extraordinarily broad, relatively *unbounded* activities such as “science,” “learning,” and even “vagabondry” (Chapter 3). As Engeström (1990) stated, “contexts are activity systems” (1990, p. 79)—and context is in many ways the opposite of a bounded case.

Yet when Engeström applied activity theory to concrete case studies, the results were tightly bounded. For instance, his 1990 studies included specific classroom and workplace activities with defined, concrete objects that delineated activity systems: a classroom unit about eclipses, physicians’ consultations, record-keeping at a hospital, specific instances of children’s play. Similarly, his 1992 studies described activities such as courtroom judging and medical consultations performed by multiprofessional teams. In each of these cases, Engeström could articulate a particular object—and sometimes conflicting objects—around which an identifiable cyclical activity could be discerned. These activities include primary medical care, whose object is the patient (1987, Chapter 2; 1990, p. 109); health care, whose object is the consultation (1990, pp. 71, 85); and judging in driving-while-intoxicated (DWI) cases, whose object is the defendant and the case file (1992, pp. 29, 61).

After 1992, though, the object began to expand and diffuse, even in case studies. Shortly afterward, scholars introduced 3GAT to writing studies (e.g., Berkenkotter & Huckin, 1995; Russell, 1995). Writing studies have lagged in adopting 3GAT developments, but as Table 1 suggests, the object’s diffusion has happened here as well.

The Expansion of the Object: Diffusing From the Concrete to the Abstract

As we apply activity theory to more complex and interdisciplinary activities, the object itself becomes more difficult to describe in cyclical terms. In a complex collective activity, identifying a single object is difficult. An activity’s participants may have different motives (Hyysalo, 2005, p. 22; Nardi, 2005, p. 40) and different perspectives on the shared object (Christiansen, 1996; Engeström, 1999b; Foot, 2002; Holland & Reeves, 1996). In any collective activity, an object is “multifaceted, evolving” and even “dialogical” (Foot 2002, pp. 132, 138), understood differently by different participants at different points, developing over time.

The object becomes even more difficult to identify in complex work in which the activity crosses field, trade, and disciplinary borders (R. Engeström, 1995; Engeström, Engeström, & Karkkainen, 1995; Tuomi-Gröhn & Engeström, 2003). Activities become *polycontextual*: “knowledge of procedures is incomplete, problematic situations change constantly, and solutions are typically of short duration,” so “continuous experimentation in ongoing production becomes the new basis of expertise” (Engeström, Engeström, & Karkkainen, 1995, p. 331). Activities often involve *coconfiguration*, in which objects expand both spatially and temporally (Engeström, Puonti, & Seppänen, 2003, p. 154). Activities become *polymotivated*, with stakeholders acting on the object to satisfy multiple, sometimes conflicting motives (Kaptelinin, 2005, p. 13; Nardi, 2005). Stakeholders become more heterogeneous (Miettinen, 1998), as does the object itself (Miettinen, 2005).

These complications make our understanding of the object richer, but they also challenge the notion of making the object the linchpin of a 3GAT analysis because the object can only be identified by exploring perspectives (Foot, 2002), something that can happen only after the unit of analysis has been selected and the investigation has begun. In fact, these complications make it difficult to understand activity as unitary at all and in turn have led to conceptualizing *activity networks* in which multiple activities overlap the same spaces, actors, and tools, often presenting contradictory objectives (Miettinen, 1998, 1999; Saarelma, 1993). That is, by expanding the object, we lose the boundedness that makes 3GAT case studies so valuable—and that makes the activity system a viable unit of analysis.

Why is the object expanding? I suggest that this expansion is driven by two separate, but interrelated problems, both of which are prefigured in Engeström’s early works—and refigured in writing studies. The first problem is methodological: The activity theory framework is being applied more and more broadly, to more broadly scoped cases. The second is analytical: The activity theory framework is becoming more multidimensional, as more and more human activity is not fitting the past characteristics to which activity theory was developed as a response.

The Methodological Problem: Mission Creep

Earlier, I noted the different ways in which the seven 3GAT studies of writing listed in Table 1 treated the object in methodological terms: as a sense-maker, as a component of a predefined unit, as a component with unclear relations, and as undefined. Here, I examine mainstream 3GAT texts to see how these different treatments emerged.

Bakhurst (2009) argued that in the West, 3GAT is principally used as “an empirical method for modeling activity systems” (p. 197). Problematically, the 3GAT framework is being applied to more broadly scoped cases, and the object expands accordingly. This problem is prefigured in Engeström’s (1987, 1990, 1992) early work. For instance, Engeström (1990) argued that “the entire activity system [is] the unit of analysis” (p. 77) and that “contexts are activity systems” (p. 78). How much is covered by “contexts” is unclear, though, since Engeström stated that an activity system is impinged by other activity systems and “connected to other activity systems through all of its components” (p. 84; cf. Engeström 1987, Chapter 2; 1992, p. 13). These connections are not simply conduits. Engeström (1992) demonstrated that the object itself is beset by contradictions. In the activity of judging, the object

is the case file—and the defendant it represents (p. 60). In medical consultations, the object is the patient herself—and the pain the patient is feeling (p. 109). As Engeström said, “an activity system is by definition a multi-voiced formation” (p. 17; cf. Engeström, 1996).

Consequently, since the object is not narrowly defined in methodological terms in this early work, it can be expanded. We can already see, for instance, how the objects described in those examples—case files, defendants, patients, pain—do not exist in simply one context. Perhaps that is why Engeström (1987) suggested that we seek phenomenological insight *before* delineating the activity system (Chapter 5).

Yet Engeström’s later work edges away from bounded activities toward public-sphere issues such as global warming and narcotics—a problematic move, since 3GAT has well-known deficiencies in public sphere issues (see Spinuzzi, 2008, pp. 42–43, 72–73). Public sphere issues are by definition not well contained: they involve the entire public, balance complex competing interests, and do not necessarily lend themselves to a theory of learning and development.

We can see the expansion of the object, and the activities that it defines, through progressive methodological concepts in the 3GAT literature.

Method–Movement 1: An Activity System is Formed around the Object

The notion of the object defining the activity system, and of the activity system as the essential unit of analysis, appears as early as Engeström (1987, Chapter 5), where he urged us to delineate an activity system based on an object that is deduced through initial phenomenological work. The model for a single activity system is represented in Figure 1.

(FIGURE 1 GOES ABOUT HERE)

In the seven writing studies I reviewed in Table 1, both Pickering (2009) and Walsh (2010) defined a single activity system (a technical communication class; a class using a wiki)—although neither defined the activity in terms of the activity’s object. Indeed, much of the early work in writing studies focuses on a single activity system, illustrated (if at all) with a single triangle, sometimes without the elaborated elements of rules, community, and division of labor (e.g., Berkenkotter & Huckin, 1995; Haas, 1996; Russell, 1995, 1997a; Spinuzzi, 1996).

Method–Movement 2: Two Activity Systems Share an Object

Yet, Engeström (1996) claimed, the minimal model for 3GAT is not one but *two* interacting activity systems (p. 133; see also 1987, 1990). In a move that distinguishes 3GAT from Leont’ev’s (1978, 1981) “2GAT” work, Engeström (1987) introduced this minimal model through the notion of a *shared object*. He applied Ilyenokov’s (1977, 1982) theoretical work with contradictions, specifically contradictions that arise when two activity systems share the same object, to Leont’ev’s activity theory (Engeström, 1987, Chapter 2; 1990, p. 128). For instance, Engeström (1990; 1996) provided the example of doctors and patients, each with their own activities, sharing the object of the patient. This model of two activity systems sharing an object dominates many of Engeström’s early case studies, which feature dyadic encounters such as patient consultations. And with such a contradictory object, the activity must be seen as dialogic or multivoiced. Engeström (1987, Chapter 4; 1990, p. 54; 1992, p. 7) began referring to dialogism and multivoicedness early in his works, particularly in terms of expertise. Figure 2 represents this model.

(FIGURE 2 GOES ABOUT HERE.)

In the seven writing studies I reviewed in Table 2, Gygi and Zachry (2010) defined three progressive objects (a plan, course content, and an improved course) and examined two activity systems that shared them (a corporation and an academic group). Similarly, although McNair and Paretto (2010) did not start by defining the object, they also examined pairs of activity systems (globally networked teams in a workplace and in a classroom) that shared objects (“a way to mathematically model energy, stress, and strain on the product,” p. 335, and “to initiate team relationships and to identify and exchange the necessary information for the assignment,” p. 343). We also see this analytical tack in other 3GAT writing studies, particularly those that contrast school activities with nonacademic ones (Le Maistre & Paré, 2004; Russell & Yañez, 2003).

By introducing the interaction between activity systems—particularly the critical notion of contradictions between them—Engeström (1987, 1990, 1992) immediately widened the context we must examine in order to understand activity. Perhaps “contexts are activity systems” (1990, p. 78), but without understanding the contradiction that is introduced when two activity systems meet, we cannot really understand activity per se. The methodological scope widens.

Method–Movement 3: Networks of Activity Systems Share Components

Activity systems can, of course, be related in ways other than through shared objects. For instance, when one activity system takes a particular product as its object (e.g., a company develops software), that object can then become a tool in some other activity (e.g., other organizations then use that software to process their own orders). We might see such activity systems as atomic components that interlink to form larger, but relatively coherent, *activity networks* (see Miettinen, 1998, 1999; Miettinen & Hasu, 2002). Like the concepts in the first two method-movements, the concept of activity networks appeared early on in Engeström's (1987, Chapter 2; 1990, p. 13) work. In fact, we can understand the concept introduced in method-movement 2 (two activity systems sharing an object) as a simple version of an activity network.

In an activity network, interlocking activities can “potentially destabilize each other through their exchanges and inter-penetrations” (Engeström, 1990, p. 13). We have already seen that contradictions in a shared object might destabilize activities. But such contradictions can occur at any point: for instance, an activity system might use an instrument (e.g., software) that conflicts with other tools or other parts of the activity (Spinuzzi, 2003). So Engeström's (1987, 1990, 1992) early emphasis on multivoicedness becomes quite important here. If the elements of the activity system are truly multivoiced and multivalent, activities do not simply link or collide, they collapse into interpenetrated, overlapping activities that cannot be easily separated (R. Engeström, 1995; Saarelma, 1993; in writing studies, see Spinuzzi, 2003, 2008). Figure 3 represents of an activity network.

(FIGURE 3 GOES ABOUT HERE.)

Consequently, we begin to see work that emphasizes multiple perspectives (Christiansen, 1996; Holland & Reeves, 1996), multivoicedness and dialogue (R. Engeström, 1995), and polycontextuality and boundary crossing (Engeström, 2001, 2004; Engeström, Engeström, & Karkkainen, 1995; Tuomi-Gröhn & Engeström, 2003)—all work that reacts to the expansion toward multiple activity systems and the destabilizations that result. Once again, without understanding these multiple potential destabilizations across activity systems that are linked—and later interpenetrated—in an activity network, we still cannot really understand activity per se. Again, the methodological scope necessarily widens, this time with no limit: we could continue traversing the links in the activity network forever.

In the seven writing studies I reviewed in Table 1, Propen and Schuster (2009), Sherlock (2009), and Ding (2008) examined such networks (although none use that terminology). For instance, Ding identified the object of the grant proposal, which was shared by multiple actors in multiple activities with different perspectives (e.g., graduate students; the NIH bureaucracy; NIH reviewers; sponsoring faculty; and university administrators). In his study of World of Warcraft, Sherlock did not identify an object, but identified multiple interacting activities (grouping, making money) with their own values and motives. And in their study of courtroom cases, Propen and Schuster described different actors, activities, and values that interacted in the activity of the sentencing hearing. With all these studies, we can imagine tracing the links to further actors, activities, values, and motives.

In such activity networks, activity systems are still delineated as cyclical activities with material objects, so we might expect to be able to arbitrarily select a stopping point in order to bound a case and conduct an analysis. Unfortunately, even this limiting factor begins to erode because we cannot necessarily determine what constitutes a multiperspectival object. In a courtroom, for instance, is the object the defendant or the case (Engeström, 1992, p. 60)? Some objects seem bigger than others, and when multiple disciplines are involved, they may not conceive of the same object in the same terms (cf. Mol, 2002). To conceptualize shared work as being performed on the same object, we must define the object expansively enough to be recognized across boundaries. Yet in this method-movement, we still have the anchor of shared cyclical activity to ground our analysis.

Method-Movement 4: Runaway Objects Are Transformed via Knotworking in Substrates of Mycorrhizae
In method-movement 4, we lose that anchor as well. To understand how, we must dissect the longish title for this method-movement. *Mycorrhizae* represent relatively durable horizontal connections across activity systems (Engeström, 2008, pp. 228–229, 2009, p. 309). These connections allow “knotworking,” or irregular, distributed pulsing collaborations that may involve different people in different locales during each pulse (Engeström, Engeström & Vähäaho, 1999). Engeström (2008) explained that the

knot refers to rapidly pulsating, distributed, and partially improvised orchestration of collaborative performance between otherwise loosely connected actors and activity systems. Knotworking is characterized by a movement of tying, untying, and retying together seemingly disparate threads of activity. The tying and dissolution of a knot of collaborative work is not reducible to any specific individual or fixed organizational entity at the center of control. ... The unstable knot itself

needs to be made the focus of analysis. (p. 194)

Knotworking in mycorrhizae is oriented toward a *runaway object*, one that is shared by multiple activities with variable actors occupying different locations and collaborating irregularly. And that is how we get from a concrete, material object to an object that is so expansive that it represents a global issue, one that potentially involves all human beings on the planet as subjects. The object is no longer common, distinct, and atomic but multiperspectival, fractional, and runaway.

None of the seven writing studies that I examined in Table 1 speak to this method–movement. But Varpio (2006) used knotworking in her award–winning dissertation to describe cross–disciplinary collaborations in which “no one stable motive was shared” (p. 99; cf. Varpio, Hall, Lindgard, & Schryer, 2008). Varpio noted that knotworking is not well elaborated in methodological terms in the 3GAT literature (p. 125), so she developed case–specific criteria for her own research.

Summary of the Methodological Problem: From Well–Bounded Studies to Mycorrhizae Activities

This method progression represents a feedback loop. The more that 3GAT researchers knew about how an activity overflows its contextual bounds, the more they expanded the object to help encompass the activity to account for everything. 3GAT aims to be a theory of context, and context is infinitely expandable. Here, we run into the classic methodological problem of how to bound the case (e.g., Yin, 2003). The 3GAT framework becomes a totalizer, attributing even spontaneous chance interactions to subterranean mycorrhizal roots. To put it colloquially: With 3GAT’s hammer we have a mighty analytical tool, but we also begin to see a world composed entirely of nails.

The Theoretical Problem: Changes in Work Activity

The methodological problem hints at the theoretical one. Context is expanding, activities are interpenetrating, and their connections are becoming more multiperspectival for a reason: Mediated activity itself is changing. Changes in work activity have made the object more *multidimensional*: more broadly circulated, shared, and interpreted in different activities. Such objects tend to be informational. And here we return to writing studies, whose objects are by definition informational: objects such as wikis (Walsh, 2010), models of physical products (McNair & Paretto, 2010), grant applications (Ding, 2008), plans, course content, and course prototypes (Gygi & Zachry, 2010).

The foundational ideas of activity theory came of age during the industrial era, grounded in Marx’s (1990) critique of early industrialization, and developed during the rapid industrialization of the Soviet Union (see especially Luria, 1976). Early activity theorists used examples grounded in agricultural and craft labor: hunting, fishing, farming, blacksmithing. But Engeström (1990, 1992) recognized that work organization is changing in “the age of information technology” (1990, p. 50) and that “there is a pervasive historical transition taking place in the very core of expert cognitive procedures” (1992, p. 10). He argued that we are undergoing a historical transformation in the nature of expertise, moving toward “multi–professional team and network work and expertise” (1992, p. 25). Here, Engeström embraced the hypothesis that society is moving from hierarchy and market to network forms of organization (p. 26; cf. Engeström, 2005), quoting from W. W. Powell but sounding strikingly like Toffler (1970, 1980) and Drucker (1994). That is, Engeström applied 3GAT to knowledge work. And knowledge work is quite different from the agricultural work and craft work that supplied the early illustrations of 3GAT.

Knowledge work primarily involves creating, manipulating, analyzing, and transforming symbols (Spinuzzi, 2007). In other words, its objects tend to be texts and other representations. Such work has accounted for an increasingly large share of the developed world’s economy in the last century (Beniger, 1989; Drucker, 1994). Even in his early studies (1987, 1990, 1992), Engeström was studying professional work whose objects were primarily representational: In health care and judging, for instance, objects included both people (patients, defendants) and the texts that represented them (computerized records, case files). Strikingly, 3GAT has become widely adopted by scholars in fields that involve knowledge work: human–computer interaction, computer–supported cooperative work, education, medicine, organizational studies—and writing studies.

Yet knowledge work’s objects are different from the objects of other work. Agricultural work and craft work tend to have concrete objects and relatively simple divisions of labor. Hunting, fishing, and blacksmithing are limited quite strongly by their objects: Only a small number of blacksmiths can stand at the forge, the metal affords a relatively small number of configurations, and customers might be able to give specifications but cannot work the metal themselves. In contrast, knowledge work involves specialists interacting heavily as they transform knowledge at multiple points. Knowledge work objects are less material (knowledge represented in various texts as opposed to fields, game, or iron). They are more multiperspectival, worked by “multi–professional team[s]” (Engeström, 1992, p. 25) that share the objects and transform them according to their diverse fields of expertise, engaging in frequent boundary crossing to communicate their field–based assessments. Participants in such multiperspectival activities may not even agree on what the object is (the defendant or the case file? the patient or the patient’s records?).

Furthermore, this increase in knowledge work is not restricted to certain sectors. Increasingly, knowledge work

tends to be layered onto other sorts of work (cf. Karlsson, 2009). Farmers who labor to transform their fields now use a GPS. Given these changes in work activity, activity theorists are increasingly concerned with addressing knowledge work. In the past few years, at least three collections on activity theory have addressed how it must adapt to discussing knowledge work (Daniels, Edwards, Engeström, & Ludvigsen, 2010; Sannino, Daniels, & Gutierrez, 2009; Sawchuk, Duarte, & Elhammoumi, 2006), as have various monographs (Engeström, 2008; Kaptelinin & Nardi, 2006; Spinuzzi, 2008).

If work and work organization are changing, if the object of activity is primarily representational and thus more abstract, transformable, and circulable, then we might expect the concept of the object to develop in response. And so it has.

Theory–Movement 1: Knowledge is the Object; Objects Become Knowledge

In method–movement 1, we saw that the activity system forms around an object, defined as the raw material or problem space (see Figure 1). Knowledge work takes knowledge as its object. Knowledge, of course, is still instantiated in materials: a printed report, a database, a graph, a case file. But as knowledge, it can be instantiated in various materials, in redundant materials, even in an ecology of interrelated genres (as Ding, 2008, illustrated). It can be copied, transformed, and fractured freely. When doctors “work” on a patient, they deal with a unique individual; when they “work” on an article, they transform a printout that they can photocopy or a file that they can email. If they lose the patient, that’s it; but if they lose the patient’s records, they can usually get a copy from clerical staff.

In the seven writing studies I reviewed in Table 1, all of the identified objects are some form of knowledge object, and most are some kind of textual object. Textual objects are easier to transport, manage, aggregate, and manipulate than are the objects that they represent—which brings us to the next theory–movement.

Theory–Movement 2: Knowledge is a Representation(s) of Another Object(s)

In method–movement 2, we saw that the minimal model for 3GAT was two activity systems sharing the same object (see Figure 2). But in Engeström’s early examples, that object was doubly manifested. As we can infer from Engeström’s (1990, 1992, 1999a) early studies, a contradiction exists between knowledge and that which it represents: the records versus the patient, the case file versus the defendant. The material object and its representation occupy the same space, often interfering with each other: doctors are distracted from the patients by their records and draw back to them when the patients go off script; judges must repair the ruptures when defendants do not conform to the representations of their cases.

Of course, the patients and defendants are also objects in their own activities—with different motives. Indeed, in this theory–movement, objects are separated from motives, as Kaptelinin and Nardi (2006) noted (p. 157; cf. Kaptelinin, 2005; Nardi, 2005). The object expands to encompass multiple motives and to therefore become the nexus of two literate activities. It does this partly by encompassing representations of itself.

In the seven writing studies I reviewed in Table 1, Gygi and Zachry (2010) demonstrated how industry and academics work on progressive objects (plans, course content, and course prototypes) that represent a later course. Similarly, McNair and Paretti (2010) demonstrated how distributed teams (whose members did not share a location) collaboratively transformed representational objects (a model; an assignment). But these representations can always be contradictory to what they represent. In this contradiction, the representational object has a tremendous advantage: It is more easily circulated and transformed.

Theory–Movement 3. Knowledge is Transformed in Multiple Activities; Objects Become Polycontextual

In method–movement 3, we saw that 3GAT spread outward to examine activity networks, first as atomistic, chained activities, then as overlapping, polycontextual activities (see Figure 3). Through these networks, representational objects circulate and are transformed by different specialists. Hospital staff may have trouble convincing a medical patient to move from one office to another, visiting different specialists, clerical staff, and insurance companies, and they may find it nearly impossible to get a patient to tell all these people the same story. But the staff can quite easily represent the patient in easily circulated, standardized records.

Activity theorists have characterized this phenomenon of transportability in various ways. For instance, some have borrowed Star and Griesemer’s (1989) notion of *boundary objects* that circulate among activities (e.g., Engeström, Engeström & Karkkainen, 1995; Furstenau, 2003; Ludvigsen, Havnes, & Chr. Lahn, 2003; Russell, 2010; Tuomi–Gröhn, 2003; Weber, 2003; Wenger, 1998). Others in writing studies have used the concept of *genre* in conjunction with boundary objects (e.g., Russell, 2009; Spinuzzi, 2008, 2010). Importantly, embedding the knowledge object in multiple representations means that it might fragment into multiple competing objects that interact with different activities and represent fractional aspects of the same or competing physical objects. For instance, the patient might be represented by texts such as X-rays, blood-test results, a database of payments and insurance reimbursements, and a liability waiver, all of which compose the patient’s records, but which circulate independently and represent different aspects of the patient (Mol, 2002).

But transportability does not simply mean traversing a chained activity network: Multiple interpenetrating activities begin to collapse into each other as specialists from different fields work on the same knowledge objects, transforming them to meet the requirements of their different fields—a common work arrangement in knowledge work (Adler & Heckscher, 2007; Toffler, 1980, 1990). For instance, the doctor and the clerical staff cooperate on transforming patients' records, but one does this to heal, while the other does this to ensure that the office can be paid. (And both transform these knowledge objects to avoid legal liability. Engeström's doctors do not want to become Engeström's defendants.) To work effectively, these specialists must cross boundaries (Tuomi-Gröhn, Engeström, & Young, 2003). They must learn not just vertically, about their own profession, but horizontally, about others' work (Engeström, 2001; Tuomi-Gröhn & Engeström, 2003). Thus multiple field and disciplinary frames are brought to bear on the same knowledge objects (Ludvigsen, Havnes, & Lahn, 2003). Such activities become polycontextual (Engeström, Engeström, & Karkkainen, 1995), with different specialists applying different frames to shared objects. Yamazumi (2009) proposed "hybrid activity systems" to address such interactions among activity systems (p. 213). In 1990, we could say with Engeström that "contexts are activity systems" (p. 79); twenty years later, we must agree with Russell (2010) that "the network is the context" (p. 354).

The more representational such objects become, the more transportable they are. Workplaces increasingly become systems of fragmented knowledge, spread across space, time, and disciplinary activities (Bruni, Gherardi, & Parolin, 2007). Activities become placeless (Nardi, 2007, 2010). Ruckriem (2009) argued that the global communication networks that enable so much of this boundary crossing also challenge 3GAT, since they enable pure contingency in self-weaving communication networks (p. 91; cf. Lompscher, 2006). Kaptelin and Nardi (2006) argued that

Work itself is changing. Work is more distributed, more contingent, less stable. How do we understand social forms such as networks and virtual teams that partially replace standard organizational hierarchies? ... Knowledge work usually involves multitasking and working with diverse groups and individuals (p. 26).

And they conceded that "the conceptual apparatus of activity theory currently does not provide an elaborated set of concepts for the analysis of multiple activities" (p. 256).

Hence, the object expands again. Whereas the object was once understood as the linchpin that anchored the activity system, we now find that "being embedded in multiple activities simultaneously, objects have lives of their own and resist goal-rational attempts at control and prediction" (Engeström, 2006, p. 194).

In the seven writing studies I described in Table 1, Proppen and Schuster (2009) illustrated this expansion by discussing how the activity of judging was disrupted by victim impact statements, which introduced a different genre and logic into the courtroom activity system. Sherlock (2009) did not name an object, but he emphasized how the activity of grouping emerges from negotiations between player factions and the software manufacturer, stakeholders with quite different values and motivations. Finally, Ding (2008) showed how introducing students to NIH grantwriting entailed teaching them how to see a cluster of genres as a whole object and how to negotiate among the different audiences that read the grant application.

To understand a given object with its multivalence and multiple motivations, then, we must examine the networks of multiple activities brought to bear on a necessarily abstract object that is increasingly fragmented, and contested.

Theory–Movement 4: Coconfiguration Emerges as a Historically New Form of Work

In method–movement 4, we had to dissect a complex statement: "*Runaway objects* are transformed via *knotworking* in substrates of *mycorrhizae*." This string of methodological concepts points us to corresponding theoretical changes in 3GAT: Engeström (2008) argued that new objects (runaway), collaboration patterns (knotworking), and anchored links among activities (mycorrhizae) have developed to address a historically new type of production. Drawing from Victor and Boynton's (1998) account of historical types of production in capitalism (e.g., Engeström, 2008, p. 191; Engeström, Puonti, & Seppänen, 2003), Engeström claimed that production has moved through the stages of craft, mass production, lean production, mass customization, and finally coconfiguration, which is

an emerging, historically new type of work that relies on adaptive, 'customer-intelligent' product-service combinations; continuous relationships of mutual exchange between customers, producers, and the product-service combinations; ongoing configuration and customization of the product-service combinations over lengthy periods of time; and active customer involvement and input into the configuration. (Engeström, 2008, p. 19)

Coconfiguration examples include agencies and neighbors coordinating to capture a mental patient (Engeström, Engeström & Karkkainen, 1995); police investigating economic crimes (Engeström, Puonti, & Seppänen, 2003); and a high-tech manufacturing company developing a product (Engeström, 2007; see also Daniels, Edwards, Engeström, & Ludvigsen, 2010). In each example, people from newly interoperating activities cross boundaries to co-configure their shared object. They knotwork, coming together in teams that are not necessarily persistent, but that use mycorrhizae substrates to anchor the relationships between their activities. And in each example, we get the “spatial and temporal expansion of the object” (Engeström, Puonti, & Seppänen, 2003).

As Engeström (2008) argued, “the nature of teams depends on the historical type of production in which they are implemented” (p. 190)—and teams are but one of multiple “fluid forms of organizing collaborative work” (p. 194). Fluidity is characteristic of coconfiguration work. As we saw in the discussion of method-movement 4, knotworked actors are not consistently the same; mycorrhizae are loosely held together and rely on alliances across rapidly changing activities; and objects are runaway, expanding in acute crises and breakthroughs. Because of this fluidity,

it is difficult for practitioners to construct a connection between the goals of their ongoing actions and the more durable object/motive of the collective activity system. Objects resist and bite back: they seem to have lives of their own. But objects and motives are hard to articulate: they appear to be vague, fuzzy, multifaceted, amoeba-like, and often fragmented or contested. The paradox is that objects/motives give directionality, purpose, and meaning to the collective activity, yet they are frustratingly elusive. (p. 204)

The more activities are brought to bear on an object, the more fragmented, fractional, and contested it becomes. No one masters a given activity, which is now understood to have a changing object and motive (Miettinen, 2008). Activities’ boundaries and certainties dissolve (Edwards, 2009). Activities now change so rapidly, become so interrupted and stochastic, that developmental spirals become more like eddies (Spinuzzi, 2008).

None of the seven writing studies that I described in Table 1 involve coconfiguration, and few do in writing studies. One study that does involve it is Varpio’s (2006), which examines how nurses and residents interact with electronic patient records and other genres in pulsing interactions. In these cross-disciplinary interactions, “the object-related motive for participants was not sufficiently stable to constitute a constant component of a single activity system” (p. 99).

Summary of the Theoretical Problem: Spatial and Temporal Diffusion of the Object

This theoretical problem involves a second feedback loop. Activity theory brings ideas about individual and collective human development to the question of knowledge work—yet knowledge work’s fluidity challenges activity theory’s cyclical, developmental account of work, straining it in ways that agricultural and craft work did not. The problem is not just that we have trouble bounding the case, but that the cases are actually growing more interconnected and multidimensional. To make sense of them, we must account for multiple perspectives and polycontextuality by again expanding the object.

The Feedback Loops Expand the Object: The Center does not Hold

So now we have two feedback loops: one methodological, in which the object expands to encompass the continually receding horizon of context, and one theoretical, in which the object expands to address the deepening multidimensionality of activities and the multiplying perspectives on any given object (Figure 4). The methodological and theoretical expansions each stretch the object, making it more abstract, more broadly contextual, more multidimensional. In this expansion, each progressive version of the object defines an activity that is less bounded and coherent. The object becomes progressively less explanatory. Witte (2005) arguably had a point when he complained that when an object is demonstrably used by more than one activity, it cannot serve to define an activity: Toward the end of the progression, runaway objects encompass global issues, defining not *an* activity, but multiple activities simultaneously (Engeström, 2008)! 3GAT loses by expanding.

(INSERT FIGURE 4 ABOUT HERE.)

An Alternate Approach: Or, the Future of the Object, a Rough Draft

For 3GAT in general, and particularly in professional communication, whose focus is on knowledge work in organizations, the object has expanded past its methodological and theoretical usefulness. I argue in this section that we should try contracting—that is, qualifying—activities to productively use 3GAT in writing studies.

I postulate the following:

- *Writing studies, particularly studies of workplace and professional writing, tend to be studies of knowledge work.* Even “nonliterate” occupations often use texts to instantiate and circulate knowledge and to regulate their work (see Karlsson, 2009). Such texts, then, are the focus of at least components of people’s work.
- *Knowledge work focuses on knowledge, bringing in specialists from different areas to transform it.* This work involves analyzing, transforming, processing, copying, and aggregating representations, which are primarily but not exclusively texts. This work with texts tends to be interdisciplinary, done under different assumptions to achieve different outcomes.
- *Knowledge work, consequently, is collaborative:* Specialists must work together across boundaries to develop the same object, even if they envision different outcomes and use different tools. Indeed, we see some activity theorists taking collaboration itself as the object of interdisciplinary activity (Adler & Heckscher, 2007; Nardi, Whittaker, & Schwarz, 2002; Gygi & Zachry, 2010).

Further, I concede that this approach will not be a global solution for 3GAT but rather a narrowly targeted approach for defining activities in which the object is a text or cluster of texts. (Other sorts of activities can await other reformers.)

Rather than expanding the object to encompass the interdisciplinary activities surrounding texts, we can consider a text as comprising a particular type of object: a claim to which involved (collaborating) parties agree, as long as it meets their qualifications (desired outcomes). What might this claim be in a given activity? Rather than speculating, let us turn back to phenomenology, as Engeström (1987) once did (cf. Russell, 2010), to identify the common claim(s) that participants make about their work object(ive) and the qualifiers that differentiate their versions of the claims. Doing so should allow us to generate a minimal, tightly qualified claim and to detect additional common materials (representations, texts) that instantiate and qualify it.

Earlier, I identified method–movements and theory–movements that progressively expanded and diffused the object. Now I refocus the object by using the following counter–movements for identifying a *claim–object* (a phenomenologically unified, material, representational text) and for qualifying it to define manageable boundaries. Consider the following fictional study of grant proposal writing.

Counter–Movement 1: Provisionally Bound the Case

Engeström (1987) told us to start phenomenologically, gaining preliminary insight into participants’ discourse and problems before delineating the case, because “often the locus and limits of activity can be properly defined only after a relatively extensive ‘dwelling’ in it” (Chapter 5). But Engeström first identified sites, organizations, spaces, and events in which people participate, just as case study research suggests (Yin, 2003). Engeström seemed to argue that identifying the site bounds the case only provisionally (Chapter 5). These boundaries are a starting point; boundaries will overflow in some places and shrink in others.

For example, suppose we set out to study grant writing. We approach a research group that consists of people in a defined organization; the group provides the provisional bounding of the case. Within this organization, we can identify one or more representational objects that participants recognize as the organization’s business. We will look for the transformations and meanings of such objects within these provisional boundaries (i.e., within the organization).

Counter–Movement 2: Identify a Common Representational Object (Text) within these Bounds

Once we have defined provisional boundaries, we can then identify one or more objects phenomenologically, based on the statements and actions of the participants. They do not have to see the object in exactly the same way, but they do need to agree on some basic characteristics of the object. Such objects can be composed of many texts, as long as participants identify and treat a cluster of texts as a single object: the grant proposal (Ding, 2008); the course plans (Gygi & Zachry, 2010). I discourage extremely vague objects such as Engeström’s (1987) “learning” and “science,” and encourage material, representational objects such as learning plans and research reports. (This approach is Latoureaux [cf. Spinuzzi, Hart–Davidson & Zachry, 2006], but should work with a 3GAT framework.)

For example, in observing and interviewing the members of the research group, we find that they are individually working on separate texts that they identify as sections of a grant proposal. They strongly insist that they are writing the grant proposal (that is, a single, unitary document), and they can articulate why they are writing it, what it will look like, and what they hope it will accomplish. As we triangulate across participants’ statements and observations, we find many differences but also many similarities. We can think of their shared understanding of the grant proposal as a *claim*: “We are working on a *grant proposal*, which we define as ...” When they labor on the object of the grant proposal, they labor to make this claim true—to create the grant proposal as they have defined it.

In some ill–defined activities, we may have difficulties identifying a shared claim. That brings us to counter–

movement 3.

Counter–Movement 3: Identify Outcomes (Qualifiers)

In identifying an object, we identify how participants agree on the representational object that they are working to produce or refine. But participants will often see this object in slightly different terms, especially if they play different roles or have different specialties. Perhaps more important, through their statements and actions, they may identify different outcomes: different things that they hope the object will accomplish, different sorts of promises they see in it. We must be able to identify this fragmentation of the object, which Mol (2002) calls multiplicity.

Indeed, in theory–movement 2, we saw that the multiplicity of the object is exactly why the object was split from its motive in 3GAT. And in theory–movement 3, we saw that in knowledge work, those motives no longer served to distinguish different activity systems, because knowledge work activities are characterized by interdisciplinary teams with contradictory expectations of the object. Those theory–movements expanded the object, but I advocate treating different outcomes as qualifiers that constrain it. For the object to produce the multiple outcomes identified by different participants, it must become more definite; it must contract.

For example, the participants in the research group identify various outcomes for the object (see Table 2). In fact, each individual can identify several outcomes. A grant proposal that meets just one outcome can be broad indeed—for instance, a grant proposal that “provides the experience of a grant application to graduate students” is not very definite at all. But as participants add outcomes or qualifiers, the object becomes progressively more definite, more constrained, and participants must cooperate closely to make the object, or claim, succeed. That is, the grant proposal must promise all these outcomes (and fit all these qualifiers) in order to continue enlisting and sustaining effort from the participants.

(INSERT TABLE 2 ABOUT HERE)

Counter–Movement 4: Re–Bound the Case

In counter–movement 1, we provisionally bounded the case, but we did so based on a site, organization, space, or event rather than an activity. Now that we have discovered and qualified representational objects, we can re–bound the case. This re–bounding certainly might involve expanding boundaries: participants may tell us that people outside the original bounds are directly involved in transforming the object to meet outcomes. But re–bounding will usually also involve contracting boundaries: Some people within the original boundaries will be uninvolved in transforming the object. In counter–movement 4, we use observable, verifiable data to redraw the boundaries around the activity, defining the activity in terms of the object, as 3GAT suggests. But in doing so, we keep the object tightly qualified.

For example, as we examine the object of the research grant, we find that participants identify others outside the research group as critical collaborators. One identifies a college–level grant specialist who has taken a particular interest in this project and is collaborating on drafts of the budget and abstract. Another confesses that she enlists her husband, who is not a university employee, as a proofreader. These people are outside the original boundaries of the case, but they are part of the activity, directly working to transform the object we identified in counter–movement 2. We might pursue these people as additional participants.

On the other hand, we may find that many in the research group are uninvolved in this object. Some fulfill other roles in the research group, such as administration or fundraising; some work on other proposals; and some serve in name only. Although they are inside the original boundaries of the case, they do not work to transform the object, and therefore are not part of the activity.

Although the participants may say that they are writing the grant for a granting agency, we should not add the granting agency to the activity system. At some point this grant proposal will presumably circulate to the granting agency, but at that point, it will pass to a new activity in which it will have to meet a largely new set of outcomes (see Table 3). When we no longer have an identifiable, coherent, qualified claim that is shared across participants and instantiated in common materials, we no longer have the same activity. In Table 3, the rows describe the many outcomes expected from the object (constraining its multidimensionality), while the columns describe specific, well defined activities that take up the object (constraining its contexts).

(INSERT TABLE 3 ABOUT HERE.)

Counter–Movement 5: Describe the Activity

Now that we have re–bounded the case as an activity that is centered on a representational object, we can fill in the rest of the activity. We conceive the activity as a collaborative, multiperspectival, often multidisciplinary attempt to achieve an object that meets certain outcomes—that is, to make the claim within the given qualifications. In

describing the activity, we focus on the tools, rules, division of labor, and community stakeholders that are brought to bear on that heavily qualified claim.

Summary of the Alternate Approach

Through these five counter-movements, we produce what 3GAT seeks: a phenomenologically identified object that defines a cyclical activity. But rather than relentlessly expanding that object to cover broader contexts and address deeper multidimensionalities, we contract it, taking each counter-movement to progressively narrow it (see Figure 5).

(INSERT FIGURE 5 ABOUT HERE.)

Conclusion

Losing by expanding is not a viable strategy for underpinning research in writing studies. As I have illustrated here, the object's inexorable cycle of expansion has proven problematic for 3GAT-based case studies of writing. At the same time, 3GAT continues to hold promise for writing studies—if we can address the crisis of the expanding object.

Here, I have offered a rough proposal for addressing that crisis in writing studies. Specifically, I have suggested that by using some of our familiar rhetorical tools to recast the process of identifying the object in terms of claims and qualifiers, we can reverse the cycle, allowing us to narrow and focus the object rather than indefinitely expand it, and thereby support rigorous case studies. We can methodologically constrain context by bounding the case appropriately, and theoretically constrain the dimensions by isolating the ones that are most operant.

But this rough proposal is only a starting point. To progress further, we need to look back, look forward, and look sideways.

Looking back, we need more thoroughgoing meta-analyses of writing studies based in activity theory. I began this article with a rough comparison of seven recent studies; a thorough, rigorous, and comprehensive meta-analysis could further clarify common issues and emerging trends in how writing researchers methodologically operationalize the object. Examining our recent work may give us insights into new forms of expansive learning.

Looking forward, we need more case studies based in activity theory and built to theoretically and methodologically limit the object. Performing such case studies should provide us with pragmatic insights as we continue learning, working, and imagining with them.

Looking sideways, we need to explore alternate theoretical and methodological approaches to limiting the object. Surely the proposal I have outlined here is not the only one. We can benefit from our interactive expertise as we compare and synthesize across approaches.

Activity theory, like any framework, needs to be periodically applied to a testbench; it is a theory of expansive learning that can stand to be enriched by our field. By constraining the object, we can enrich it appropriately.

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Table 1. Writing studies using activity theory.

Publication	Case	Activity	Object	Object Delineates Activity System?
McNair and Paretto, 2010	Globally networked teams in workplace and in classroom	Team meetings (p. 343)	Workplace object: "a way to mathematically model energy, stress, and strain on the product" (p. 335). Classroom object: "to initiate team relationships and to identify and exchange the necessary information for the assignment" (p. 343).	No; the object is identified with other activity system components once the activity system is defined as the team meeting (p. 335).
Sherlock, 2009	Documentation supporting grouping in World of Warcraft	"Grouping, which exists within the larger activity system of online gameplay" (p. 264)	Unidentified	No
Proppen and Schuster, 2009	The introduction of victim impact statements into sentencing hearings	Unidentified, but apparently the sentencing hearing or, more generally, the legal system (see pp. 9–10)	Unidentified	No
Gygi and Zachry, 2010	Applying GNLE practices to the design of a corporate engineering communication workshop	Three: planning, researching, and offering (p. 367)	Three: "devising plan for moving forward with course development"; "defining relevant course content to meet course goals" (p. 368); "transforming course prototype into an improved version of course" (p. 369)	Yes
Walsh, 2010	Service-learning projects in technical communication courses	The "writing activity" (p. 204), "the wiki activity system" (p. 207)	The wiki, seen as instantiating multiple parts of the activity system (p. 204)	No
Ding, 2008	Initiating graduate students into NIH grant writing	"National Institutes of Health grant applications" seen from the perspective of graduate students (pp. 3, 9)	"The complete grant application package" (p. 9)	Unclear
Pickering, 2009	Student ethos in an online technical communication classroom	A technical communication class (p. 172)	"Education/learning about professional communication through the online course interface" (p. 172)	Unclear

Table 2. The object is progressively qualified (narrowed) by different outcomes.

Object (Claim)	Outcome (Qualifier)
A grant proposal that...	has a good chance of acceptance because it fits the request for proposals
<i>and...</i>	justifies the maximum award specified in the request for proposals
<i>and...</i>	supports the current projects of the research group
<i>and...</i>	puts idle resources of the research group to work (including graduate students, faculty, equipment)
<i>and...</i>	justifies recently purchased equipment to the college by using it in a funded project
<i>and...</i>	provides the experience of a grant application to graduate students
<i>and...</i>	provides funding experience to a junior faculty member who serves as co-primary investigator, so she can credibly serve as a primary investigator on a later project

Table 3. The object is progressively qualified (narrowed) by different outcomes, but it is treated separately in different activities.

Object (Claim)	Desired Outcome (Qualifier) of Research Group	Desired Outcome (Qualifier) of Granting Agency
A grant proposal that ...	has a good chance of acceptance because it fits the request for proposals	fits the request for proposals
<i>and ...</i>	justifies the maximum award specified in the request for proposals	does not look too much like other proposals the granting agency will fund
<i>and ...</i>	supports the current projects of the research group	reflects a strong primary investigator track record
<i>and ...</i>	puts idle resources of the research group to work (including graduate students, faculty, and equipment)	accounts for grant money spending reasonably and well
<i>and ...</i>	justifies recently purchased equipment to the college by using them in a funded project	makes the granting agency look wise to its stakeholders and contributors
<i>and ...</i>	provides the experience of a grant application to graduate students	focuses on research that the granting agency considers high priority
<i>and ...</i>	provides funding experience to a junior faculty member who serves as co-primary investigator, so she can credibly serve as a primary investigator on a later project	can provide concrete benefits

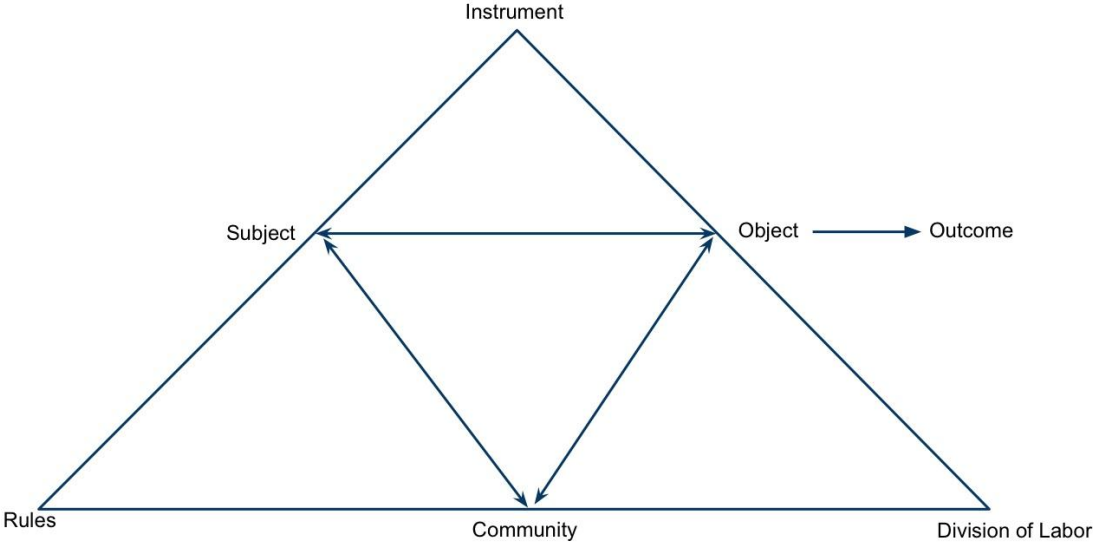


Figure 1. Engeström’s representation of the activity system.

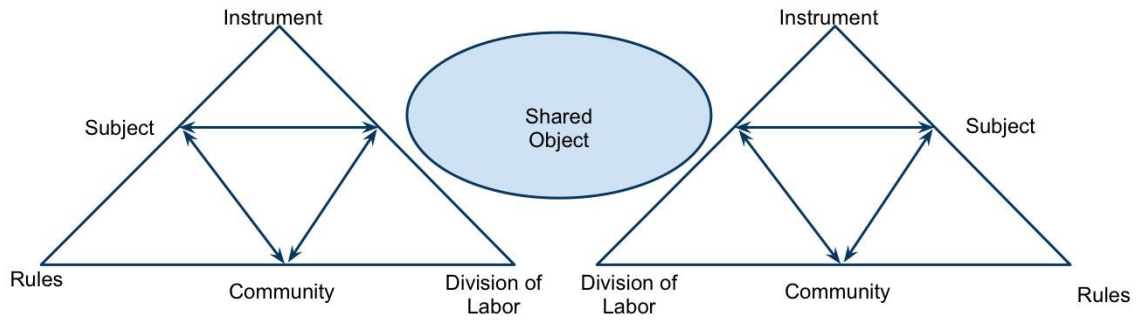


Figure 2. Two activity systems sharing an object.

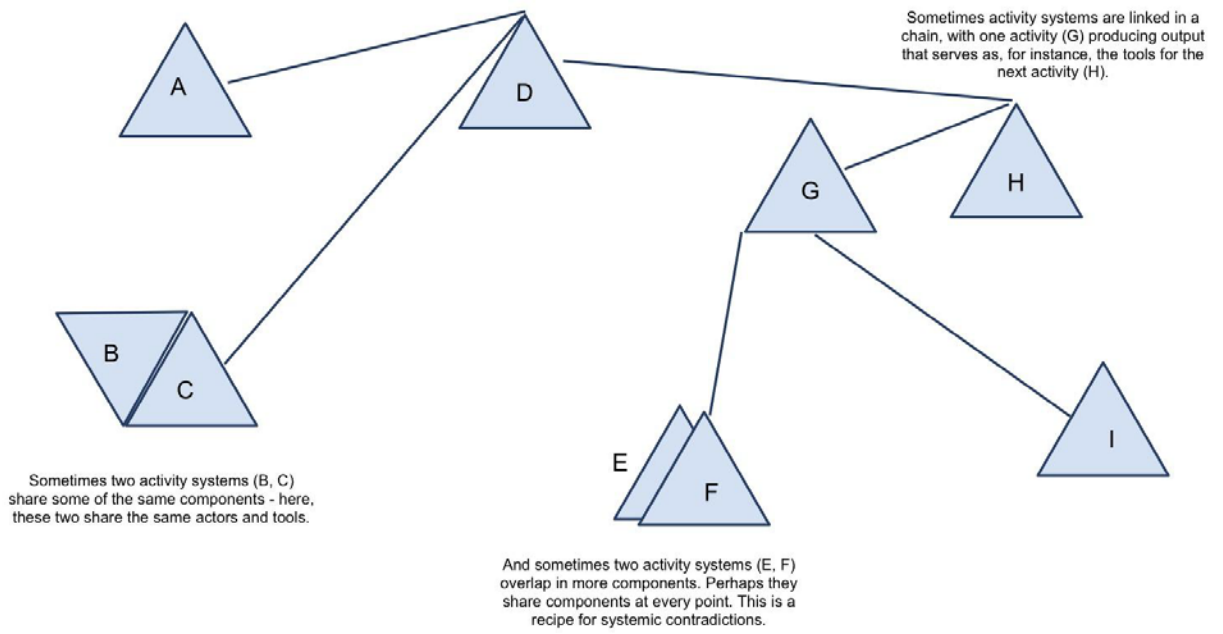


Figure 3. An activity network.

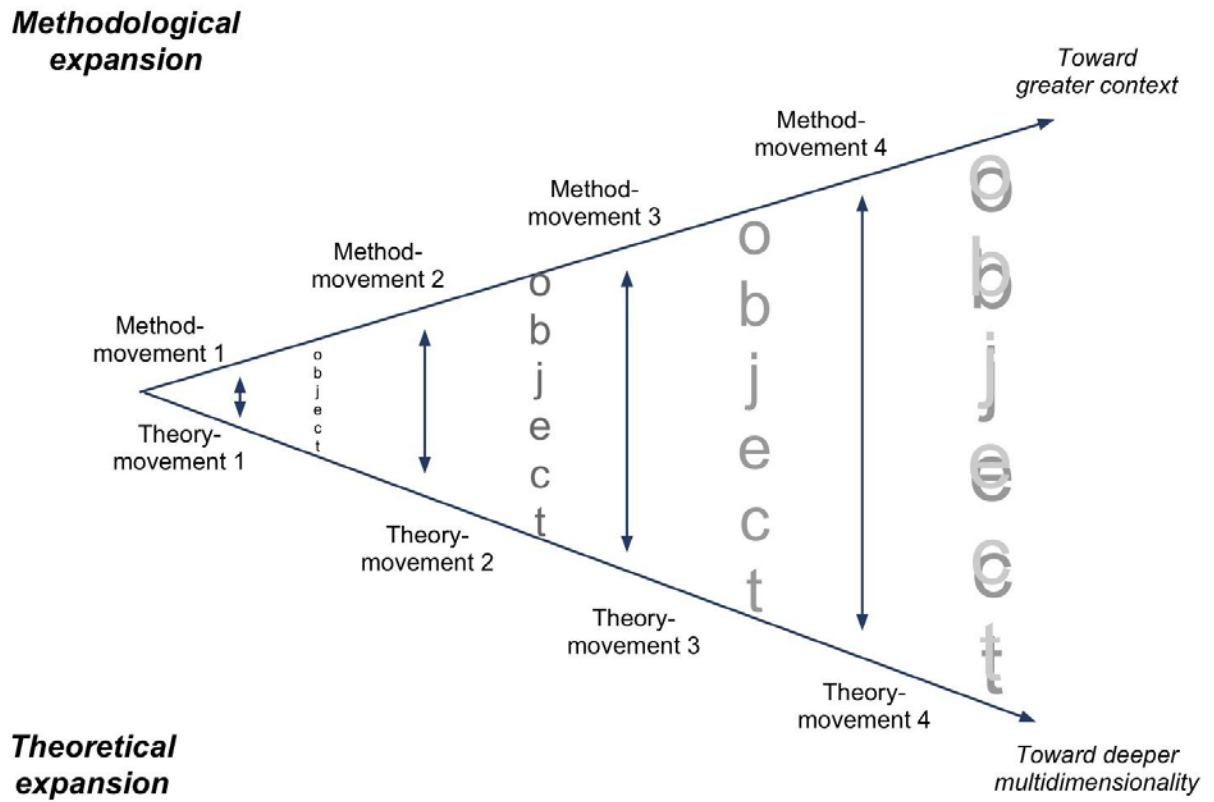


Figure 4. The expansion of the object.

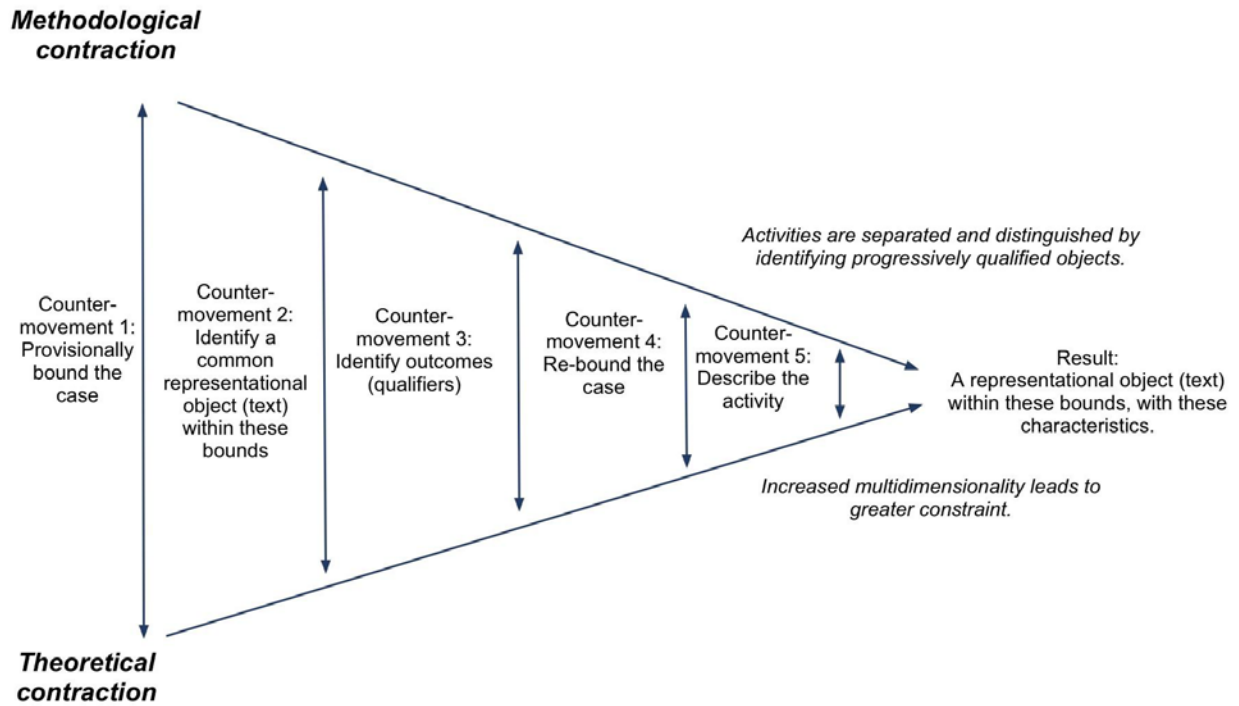


Figure 5. The contraction of the object.

