Exploring the use of contradictions and tensions in activity theory studies: an interdisciplinary review

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Sub-theme 64: Activity Theory and Organizations

1. Introduction

A fundamental analytical concept of activity theory is the notion of cultural-historical contradictions and tensions, which occur within an activity and/or between multiple interrelated activities and promote dialectical transformation (Engeström, 2001; Ilyenkov, 1974). This concept has been used extensively in the fields of organisation and management, information systems/management, communications, human-computer interaction and education, amongst other fields where activity theory is employed. However, despite it being one of the most commonly employed concepts of activity theory, there does not seem to be a clear meaning for the terms contradictions or tensions in current literature. Their definition is often left vague and ambiguous, and according to Engeström and Sannino (2011, p. 368), "*there is a risk that contradiction becomes another fashionable catchword with little theoretical content and analytical power*". Oftentimes the definitions and interpretations are left for the reader to resolve and the terms are used interchangeably or only mentioned briefly. In addition, there is no broader understanding on the type of change enabled through contradictions and tensions, how they have evolved as concepts, as well as methodological developments to help uncover them. Because of this, the application of these concepts may be limited and researchers may only uncover surface level contradictions or tensions, or simply identify problems.

Building on the concerns raised by Engeström and Sannino (2011) we undertake an interdisciplinary review the activity theory literature to understand[1]: (i) the interpretations and definitions of contradictions and tensions; (ii) the analytical approaches to identifying contradictions and tensions; (iii) the type of change and development analytical identified; (iv) methodological developments, and (v) how use of the concepts have evolved over time. While there have been reviews of the use of other activity theory concepts—such as Engeström and Sannino (2010) study of expansive learning—this is the first review of contradictions and tensions.

2. Contradictions and tensions

Ilyenkov (1974) first identified contradictions as a historically accumulated dynamic tension between opposing forces in an activity system. The concept was further developed by Engeström (1987) in the third generation activity theory as a source for change and development, which open up opportunities and call for novel solutions that can lead to transformations in activities (Engeström, 1987). (As the terms contradictions and tensions are used interchangeably in the literature we simply use the term contradictions). Rather than perceiving contradictions as problems or conflicts, they should be identified as "*historically accumulating structural tensions within and between activity systems*" (Engeström, 2001, p. 137), which have transformative power and a significant effect on organisational change (Engeström & Sannino, 2011). A key aspect of contradictions is that their recognition delivers insight into the change and development possibilities of activities. As contradictions arise, or are observed, they expose the dynamics, inefficiencies, and most importantly, opportunities for change and action (Blackler, 2009; Helle, 2000; Holland & Reeves, 1996); precipitating the development of an activity. By so doing they reveal opportunities for creative innovations for new ways of structuring and enacting the activity (Foot, 2001) and learning (Engeström, 2001). While the term 'contradiction' may be considered by some as a disadvantage or a flaw, activity theorists take the view that they are a sign of richness, mobility and the capacity of an activity to develop —as growth buds—rather than function in a fixed and static mode, where expansive development takes place (Foot, 2001). The process of using contradictions to promote learning and change is referred to as expansive learning (Engeström et al., 1999). According to Engeström and Sannino (2010 p.7), "*the process of expansive learning should be understood as construction and resolution of successively*

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[1] The idea for this paper also arose from discussions and debate which arose from EGOS 2016 track on activity theory

evolving contradictions", it is the learning of "*what is not yet there*" (Engeström, 2011, p. 74).

As contradictions are aggravated and emerge within an activity individuals begin to deviate from the activity's established norms, which in some cases may lead to a deliberate collective change effort (Engeström, 2001). This process is cumulative, rather than final. In this view, contradictions are a cultural-historical force, which destabilises activities, leading to constantly evolving and transforming activities, in which "*equilibrium is an exception and tensions, disturbances and local innovations are the rule and the engine of change*" (Cole & Engeström, 1993 p.8). Therefore, importantly, for debates surrounding structure and agency (e.g. Giddens, Bourdieu), contradictions and tensions provide a lens for understanding how deviance from established rules and norms occur (Authors, 2013) it also provides a different view of contradictions to structuration theory which is concerned with primary and secondary structural contradictions (Canary, 2010).

Complex activities, involving inter-organisational relations, wholesome changes in established process and activities embedded in the context of deep cultural-historical problems (e.g. poverty, power relations) have an increasing number of contradictions (and therefore feedback loops) causing events to be the cause of more events, thus generating snowballs and arbitrary and unpredictable side effects and maladaptive changes as adaptations to contradictions in one activity engender new contradictions in other activities (Authors, 2014).

Engeström (1987), working on concepts initially developed by Leont'ev in the 1930s, classified contradictions into four distinctive, yet related forms of problematics, found either within or between activities, as described below and illustrated in Figure 1.

Primary contradictions: Located within each constituent component of the central activity e.g. within a tool. It references the "*double nature*" of the component;

*Secondary contradictions***:** These occur between constituents of the central activity e.g. between the community and the division of labour;

Tertiary contradictions: These occur between an activity and a culturally more advanced form of the central activity e.g. an activity pre- and post- the introduction of a new IS; and

Quaternary contradictions: These occur between the central activity and other concurrent or co-existing neighbouring activities e.g. the implementation of an e-health system for Doctor-patient interaction may initially disrupt the activity of administration.
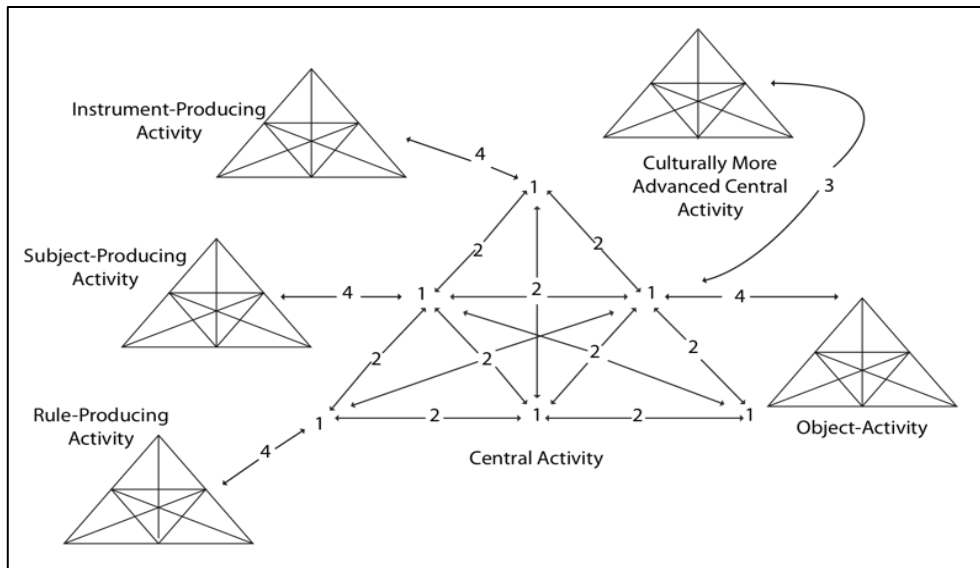
Figure 1: Levels of contradictions, adapted from CRADLE (2016)

2.2 Problems with contradictions and tensions

A challenge for activity theorists is that few scholars articulate their analytical approach to identifying contradictions and tensions (Engeström and Sannino, 2011). Most commonly, researchers examine misfits within, and between, elements of activity systems. Contradictions and tensions cannot be observed per se, as they are historically emergent and systematic phenomena. Engeström and Sannino (2011) suggest that they should be analysed through their manifestations, as the contradictions cannot speak for themselves. These manifestations can be treated as articulations or constructions of contradictions, through their recognition, articulation and construction into words and actions (Hatch, 1997). Activity theory emphasizes that contradictions cannot be constructed arbitrarily, as they have material and historical power, which prevents them from being reduced to situational articulations and subjective experiences.

Engeström and Sannino (2011) discuss four types of discursive manifestations of contradictions:

- Dilemmas, which are expressions or exchanges of incompatible evaluations, either between people or within the discourse of a single person.
- Conflicts take the form of resistance, disagreement, argument and criticism.
- Critical conflicts are situations in which people face inner doubts that paralyse them in front of contradictory motives unsolvable by the subject alone.

- Double blinds are processes in which actors repeatedly face pressing and equally unacceptable alternatives in their activity system, with seemingly no way out.

However, they note that this is not an exhaustive categorisation of manifestations.

3. Method and analysis procedures

In order to develop a broad understanding on the evolution and use of contradictions and tensions we undertake a literature review analysis. Literature reviews have been described as being essential for (i) advancing knowledge and learning in the breadth of research on a topic; (ii) synthesising empirical evidence; (iii) developing theories or providing a conceptual backdrop for subsequent research; and, (iv) identifying topics or research domains needing more investigation (Hart, 1999; Okoli & Schabram, 2010). They are also seen as valuable for becoming oriented in an emerging domain and as an aid in teaching, informing policy and supporting practice (Okoli & Schabram, 2010). In this section, we describe the procedure undertaken.

Prominent systematic literature reviews have typically relied on combinations of leading journals; using different, but comparable, journal classifications (Nandhakumar & Jones, 1997; Walsham, 1995). Authors have also used geographical spreads of journals (e.g. US and Europe), interdisciplinary journals (Guo & Sheffield, 2008; Smith et al., 2011), or a mix of academic and practitioner publications (Alavi & Carlson, 1992) as the basis for journal selection. We attempted to use a systematic approach by relying on academic databases such as Scopus, Web of Knowledge and Google Scholar. However, none of these approaches were suitable for several reasons associated with the specificity of our research framing.

First, we could not refer to rankings of top journals, because the rankings are frequently contested and more significantly, papers using activity theory are not often published in top journals. Second, while Google scholar provided the most hits, it suffers from bias ("the Matthew effect") and ranks papers by citations and by popularity. There is no function to sort by academic discipline or publication type (e.g. journal); meaning that the search is unmanageable. Third, academic databases had issues handling the specificity of our search. For instance, a Scopus search based on 'Title-Keywords-Abstract' returned many irrelevant results; often the term 'contradiction' or 'tension' did not appear in either the title, keywords or abstract, but was mentioned *en passant* in the body of the article. When the search was expanded to all fields it returned over 3,000 results. Web of Science was limited for other

reasons; most significantly, it only returned seven articles for the search 'activity theory' and 'contradictions' in the journal Mind, Culture, Activity. Whereas, when we searched the journal directly our search returned 103 relevant papers.

For these reasons, we adopted a blended approach using academic databases with the following set of heuristics developed to guide our search and frame our sample.

- We limited our search to academic journals; while we acknowledge the contribution of book chapters, books, conference papers and so on, academic journals tend to have more rigorous review processes. It also renders our search more manageable.

- We limited the search to several academic disciplines which embody current as well as some past use of activity theory. We focus on the following areas (i) organisation studies; (ii) management; (iii) information systems/information management; (iv) communication; and, (v) education. While there is argument against excluding areas such as health studies, social psychology and human-computer interaction, we needed to bind our framing to make the search and analysis manageable. We also acknowledge that there is considerable overlap in some areas. Journals such as 'Computers and Education' and 'Journal of Business and Technical Communication' could span more than one field. Rather than try to force categories, we simply used the association given by the journal. We also acknowledge that papers in any of the journals may have been focused on a different theme. For instance, a paper in a management journal may focus on technology, or a paper in an organisation journal may focus on education.

- To observe trends over time we actively included papers that spanned the last 20 years.

- Papers needed to be empirical. Theory development and conceptual papers were not included.

- Authors needed to explicitly mention that they are examining the use of contradictions and/or tensions in their study. We relied on self-reporting of the use of contradictions and/or tensions rather than attempting to uncover if they were applied or not; papers that alluded to contradictions and/or tensions *en passant* were omitted.

- To provide balance of perspectives we do not include the same lead author more than twice.

We limited the sample of papers to 100 papers. It merits mentioning that our review is different to typical systematic reviews as we are interested in how authors identify and apply contradictions and tensions within the extant activity theory research, as well as its evolution

and paradigmatic and methodological implications. It was beyond the exposition of this research to undertake an exhaustive and systematic review of the literature as is more common in reviews in medicine, environmental and economic interventions.

3.1 Analysis procedures

Our approach followed four key phases: (i) identifying key sources (papers), setting specific search terms and defining the criteria for inclusion/exclusion of papers, and setting procedures for relevance filtering; (ii) searching through the identified sources and refining the sample; (iii) synthesis and analysis of the literature; and, (iv) representing and categorising the content, and structuring the review (Cheon et al., 1993; Okoli & Schabram, 2010).

Details of each paper were entered into a spreadsheet, categorised and analysed. Two of the authors coded each paper independently before coming together to compare their analysis. During the first round of discussion, both coders found differences in the analyses. Understandings of each category were clarified collectively before both coders went through a second round of analysis. In the second round, the agreement was close to 90%. We used various content analysis methods such as inductive groupings and frameworks, classification schemes, and tabulations of characteristics to summarise the findings of the selected papers (Paré et al., 2014). Because of the nature of our study statistical techniques (meta-analysis) to combine results of eligible studies is not possible.

For the purpose of the short paper, we provide a brief analysis for 15 papers.

4. Results

We started our analysis by examining the terms used (i.e. contradictions and/or tensions). We find a preference for the term contradiction, with some use of the term tension use interchangeably. There is some limited use of the term disruption. This may be a point of contention and confusion for non-activity theorists as the terms according to English dictionaries have different meanings.

In terms of definitions, many of the papers refer to Engeström's (2001) definition of contradictions, but also Ilyenkov (1977) was popular. Interestingly, even though the papers supposedly focused on identifying and tracing contradictions in their data, not all of them provided sufficient information on the process and rules for it. Furthermore, few papers discussed how the contradictions in their data were resolved. Most contented with just the

description and identification of contradictions and tensions. Resolving them was left for further studies.

In terms of methodological trends, we find that there is a trend to rely on qualitative data, and predominantly interview quotes and interview quotes as evidence of the contradictions. An interesting development by Engeström (2001) was the use of a 'boundary crossing laboratory' as a form of interactive session containing different actors involved in the study who can contest and elaborate what the contradictions are in a richer format than interviews. Some studies offer no indication of the evidence supporting the identification of contradiction, rather they use a descriptive narrative of the case or organisational setting.

Our early analysis also reveals pluralism in terms of how the concept of contradiction and tensions have been used across the different disciplines. The full paper will include a full analysis of the papers.

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