Activity Theory: who is doing what, why and how

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Activity Theory

In simple terms, Activity Theory is all about 'who is doing what, why and how'. However, things are rarely that simple. Sometimes referred to as the Cultural-Historical Activity Theory (CHAT), Activity Theory is grounded in the work of the Russian psychologist Vygotsky and his students, in particular, Leontiev, in the 1920s. Activity Theory provides a lens with which to tease out and to better understand human activity.

Vygotsky (1978 English translation) had profound insights into the fundamentals of human consciousness and explained human reasoning as emerging through practical activity in a social environment. In English, the terms used in Activity Theory are translations of Russian words and often have particular meanings beyond their common use in English, e.g. the key term *activity* is more than just being active; it is something significant and meaningful, as seen in the examples used in this chapter. Vygotsky disputed the stimulus-response model of his more widely-known contemporary, Pavlov, and promoted the notion that, unlike animals, human *activity* is purposeful and carried out by sets of *actions* through the use of '*tools*', which can be physical or psychological. The latter include language, the most significant *tool* for collaborative human activity.

The Core of an Activity

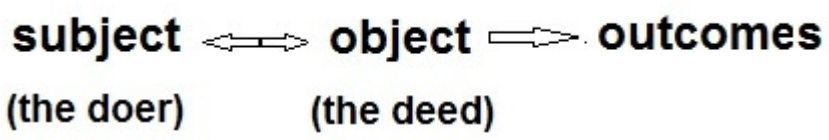

Figure 1. The core of an activity

In Activity Theory, the relationship between *subject* (human doer) and *object* (the thing being done) forms the core of an *activity* (Figure 1).The *object* of an *activity* encompasses the activity's focus and purpose while the *subject*, a person or group engaged in the *activity*, incorporates the subject's/s' various *motives*. The *outcomes* of an *activity* can be the intended ones, but there can also be others that are unintended. For example, disciplining a teenager by forbidding him/her to go out on Saturday nights may keep them home as intended but it may also have the effect that the teenager feels that they are not trusted, which may have unintended consequences in the future.

Often what people seem to be doing, what they say they are doing, and what they actually do, can be quite different. What is just a physical *object* for one person is something much more meaningful for someone else. For example, there is a new house being built in my street. For the builder, it is just another building, the activity of building provides him with an income and he wants to do it well as it reflects on his reputation as a builder. For the owners, who are recent migrants, the activity provides the first home of their own and a place where their children will grow up with the chance of a better life than they had.

Most *activities* have a dual agenda: an obvious objective one and others that are more subjective and thus open to interpretation. That is why the *subject-object* relationship at the core of an *activity* is referred to as *dialectic,* meaning that the *object* of an *activity* is both *objective* and *subjective,* i.e. for the builder it may be the physical construction of a new house whereas for the client it may be the potential of a new family home or an investment property. The purpose of the building *activity* needs to take both *objects* into account and these may sometimes be at odds. The philosophical notion of a dialectic relationship comes from the argument that any meaningful *thesis* (an idea or concept) can have a valid *antithesis* (or opposite) and that a *synthesis* of the *thesis* and its *antithesis* gives a richer understanding of reality.

Other elements of Activity

Leontiev (1981 English translation) is often recognized as the founder of Activity Theory as it is understood today. He depicted *activity* as a holistic, high-level, usually collaborative, construct such as undertaking a work project, teaching a course, or doing a PhD, and should not be confused with more everyday uses of the word 'activity' in English. An *activity* sits at the top of hierarchy above goal-oriented *actions* and underlying *operations* (Figure 2). Most significantly, an *activity* must always be understood in the context of its cultural and historical environment (Kaptelinin 1996).

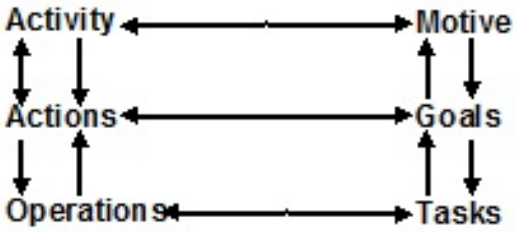

Figure 2. The activity hierarchy of Leontiev (1981)

Leontiev uses the example of changing gears when learning to drive to explain the difference between *activities*, *actions* and *operations*(as shown in Figure 2) and the dynamic nature between them. One of the first lessons in learning to drive a car with manual transmission is changing gears. In this *activity*, i.e. the first lesson, the *object* (purpose) is to practice changing gears without even starting the motor. The learner is instructed to make conscious *actions* with the *goal* of moving the clutch and gear-stick as required. The learner does not have to think 'how do I move my hand or foot', these are unconscious *operations* determined by the *conditions* (the position of the gear-stick, etc.). Once mastered, a new *activity* begins, namely, learning to change gears while driving the car. Now that the object of the *activity* is to drive the car safely, changing gears is now an *action* which is done consciously because the learner is still a novice driver, and soon, as required, moving the clutch and gear-stick become *operations* that are done without too much thought. Eventually, for the accomplished driver, driving the car is no longer an *activity* in itself, but just an *action* as part of another activity, e.g. getting to work, going on holidays, etc. This is the case until the context changes, which often happens when something goes wrong, e.g. there are problems with the clutch and the driver now has a new *activity* of fixing the car.

An *activity* both mediates, and is mediated by, the physical and psychological *tools* used, as well as the social context of the activity. This two-way concept of mediation implies that the capability and availability of *tools* mediates what can be done and the *tool*, in turn, evolves to hold the

historical knowledge of how a society works and is organized. *Tools* can be *primary* (physical), *secondary* (language, ideas, models, etc.) or *tertiary* (communities, context, or environments).

In the house building activity mentioned above, the *primary tools* are the obvious ones used by tradespeople , the *secondary tools* would include the plans and the know-how of the builder, while the *tertiary tools* could include the relationship between the builder and the owner, which could change over time as building proceeds, or the regulations governing building in that location where there could be a conflicting requirement, such as environmental conservation orders and bushfire protection rules. Changing circumstance may require changes to the plans, which, in turn, change the course of the building activity. These are instances when there would be a dynamic mediating relationship between the *activity* and the various primary, secondary and tertiary *tools*.

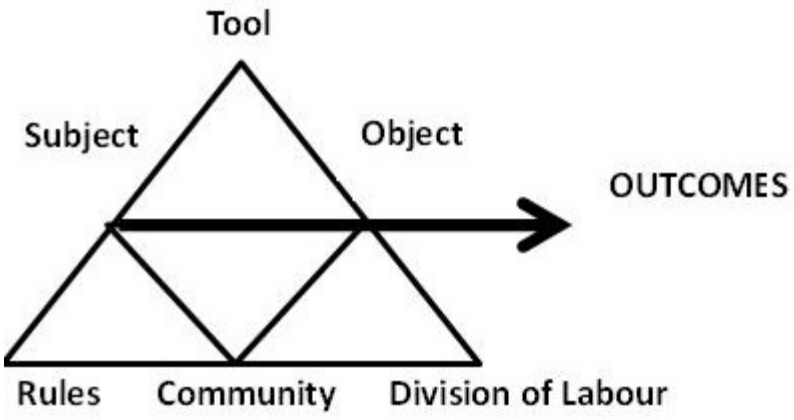

Figure 3. The Engeström (1987) representation of a collective activity system

Engeström (1987) popularised Activity Theory using the concept of a 'collective *activity system*', as depicted in the familiar triangle of Figure 3, with the elements: *subject*, *object*, *tools*, *rules*, *division of labour* and *community*. This model emphasises the distinction between the *object* or *motive* of an activity and its *outcomes*, which may be many and not always those anticipated or desired. Engeström's triangle is often used without reference to the rich understanding of the underlying work of Vygotsky, Leontiev and others, but it does offer researchers and practitioners a holistic interpretation of a real-world situation that is comprehensive and clear.

How Activity Theory is applied in research

In research that studies the complexities of real world situations, such as modern workplaces, communities groups or places of learning, Activity Theory provides a language and a set of frameworks for making sense of what is discovered about the situation through observation, interviews and other methods. Using the Activity Theory lens for research takes *activity* as the unit of analysis, where *activity* is defined by the 'dialectic relationship between *subject* and *object*' , in other words, 'who is doing what for what purpose' (Vygotsky 1978). In most complex situations, there are many dynamic inter-related activities forming what could be seen as a system of activities.

The analysis of a real-world context using the lens of Activity Theory proceeds as follows:

Step 1. Identify the significant *activities* of the system to be investigated together with each activity's *subject(s)*, *object* and *purpose*.

Step 2. Identify the *actions* and mediating *tools* of the *activity* or *activities*, where *tools* can be *primary*, *secondary* or *tertiary*.

Step 3. Identify the dynamics and tensions within and between the identified *activities*.

Following these steps provides a holistic and insightful mechanism for providing a rich description of a situation for both the researcher and those being researched. It enables research to represent and explain the changes that are identified during a longitudinal case study in complex environments. It can also give managers deeper understandings into what is happening in their business over time as perceived by different stakeholders such as employees, clients and customers.

According to Engeström, there are four sources of tension in an *activity system* (Figure 4), namely:

1. Within elements of *activities*, e.g. shortcoming of the *tools* used;
2. Between elements of activities, e.g. issues of usability between the user (*subject*) and the *tool*;
3. Between an *activity* at one time and a later more advanced form, (if new *tools* automate *operations* of an *activity*, humans may no longer be needed to do those *operations*, e.g. driverless trains);
4. Between different *activities*, e.g. misunderstandings between the teaching of the teacher and the learning of the learner;

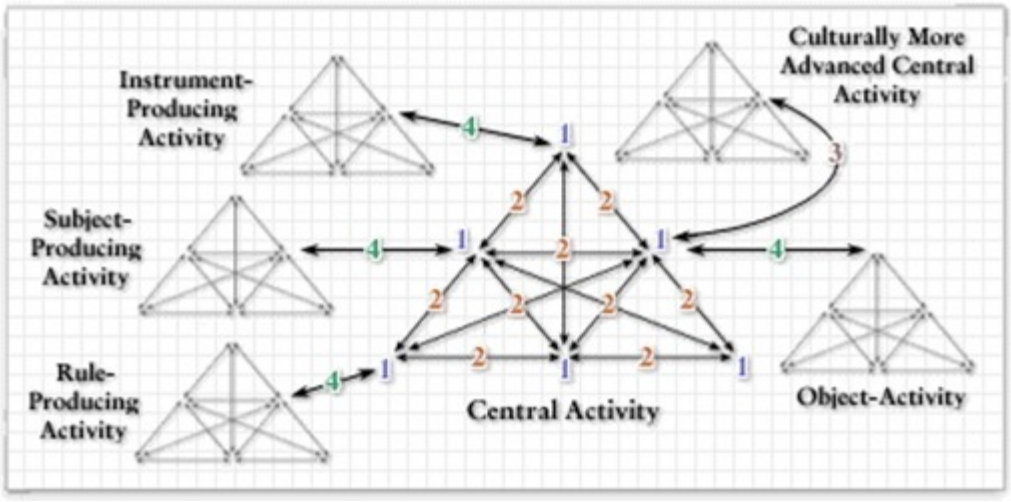

Figure 4. Four levels of contradictions in a network of human activity systems (Engeström 1999)

The novelty, contribution and significance of the theory

Activity Theory provides a rich holistic understanding of how people collaborate, i.e. carry out purposeful collective *activities*, with the assistance of sophisticated *tools* (information systems) in the complex dynamic environments of modern organizations (Waycott et al. 2005; Hasan 1999). The main advantage that Activity Theory offers practitioners and researchers is a holistic lens in understanding the patterns of *activities* of situations and problems in different industrial sectors and in different cultural context (Hasan 1998). Activity Theory is grounded in almost a century of research and has a rich tradition applied to many fields of study.

While the direct application of Engeström's model as described above has been widely used in many research projects, there is potential for additional insights through the use of five dynamic dimensions that are often overlooked in organisational research. These are:

- The *subject-object* dialectic (Kaptelinin 2005) incorporating both objective and subjective views of an activity;
- The two-way mediation between *tools* and *activities* (Vygotsky 1978);
- Zooming in and out from a top-down to a bottom up perspective according to the Leontiev's (1981) hierarchy;
- The *tensions* and *contradictions* between *activities* (Engeström1999), and;
- The *zone of proximal development* where learning occurs and new *activities* are envisaged (Engeström1999; Kaptelinin 2005).

We have been applying these five dimensions to the analysis of the work of the Climate Change Working Group of the NSW state government. Many of their projects are aimed at adapting to the effects of climate change, such as sea level rises and increased incidence of extreme weather events.

Examples of the use of Activity Theory can be seen in other chapters of this book.

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An example of an Activity Theory analysis is available at, <http://ro.uow.edu.au/commpapers/2884/>.