Reproduction and Transformation of Affect in Activity

In the preceding chapter we suggest that in the Vygotsky-Leont’ev-Holzkamp version of cultural-historical activity theory articulated here, cognition cannot be understood independently of emotion. This is so because the latter constitutes a holistic expression of the subject’s current state with respect to the object/motive and the subject’s sense of the likelihood of success in realizing the object/motives it has subscribed to. That is, the activity, stimulated by the object/motive, continually transforms the situation at hand, including, as we show here, the emotion expressed and thereby made available to others. Affect is not a static, trait-like characteristic of the subject. Rather, emotion, the sensual valuational reflection of activity in the acting subject, is continuously reproduced and transformed together with the cognitive and material results that emerge from the hands and minds of the subjects. Affect is in movement together with the activity as a whole, of which it is one of the manifestations. That is, in this chapter, then, we show that affect is an irreducible moment of activity, which, like the activity itself, is in and brings about the (self-) movement. The category of activity was created precisely to capture movement; the analysis focuses on inherent change (becoming) rather than on how things are in and for themselves.

In the following sample episode featuring Aurélie, Mario, and Thérèse, we exhibit and theorize this continual production of cognition and emotion, both of which are thought to be reflections/refractions of the living activity. In the process, the subjects make thematic and available to each other and to themselves expressions of the emotional and cognitive reflection of activity. These expressions are resources that are employed in and therefore mediate the movement of the activity itself.

Since the beginning of the study in September 2007, regular meetings have been held involving the teacher, the researchers, and the research assistants at one school in Ontario, Canada. The meetings have taken place either at the school or at the university to discuss the mathematical content of the tasks, the design of the
tasks and forms of interaction to be promoted in the classroom. Though experimen-
tal, the tasks were designed to meet the requirements of the provincial curriculum.\footnote{The provincial curriculum can be downloaded from the website of the Ontario Ministry of Education (2005): http://www.edu.gov.on.ca/eng/curriculum/elementary/math18curr.pdf.}

Among the curricular topics, one that has gained prominence is modeling. In the
following, we focus on one of the lessons in a fourth-grade class (9–10 years) re-
volving around the topic of modeling situations by means of algebraic concepts.
More specifically, at the heart of the present and subsequent chapters is Problem 4
\footnote{The task translates as:}

\begin{problem}
For her birthday, Marianne receives a piggybank containing $6. She decides to save $3 each week. At the end of the first week she says to herself, ‘I have $9!’

Questions:
\begin{enumerate}
  \item Model the problem until the sixth week using goblets and chips
  \item Fill the following table of values
\end{enumerate}
\end{problem}

This first fragment – constituting the first 21 lines of the raw transcript, 46 turns
in augmented transcript presented here – may be glossed in a summarizing way by
saying that Mario moves from having an idea about what they have to do, through
its articulation, to the eventual halt in the activity and the statement that he does
not understand. In the course of this fragment, he moves from expressing confi-
dence to frustration. Aurélie tells her peers that she does not understand, and, even
though her worksheet comes to be filled, expresses frustration. Thérèse both com-
pletes the task and exhibits confidence throughout. How can we understand this
changeover, which itself is the result of the students’ activity? We suggest that the
engagement in the activity produces a negative emotional response and a recogni-
tion that they do not understand so that an initially available positive emotional

\[\text{Pour son anniversaire, Marianne reçoit une tirelire contenant 6$}.\]
\[\text{Elle décide d’épargner 3$ par semaine. À la fin de la première semaine elle se dit : « J’ai 9$! »}.\]

Questions :
\begin{enumerate}
  \item Modélise le problème à l’aide des boîtes et des jetons jusqu’à la 6\textsuperscript{e} semaine
  \item Remplis la table de valeurs suivante :
\end{enumerate}