Recognition and realization rules in the scientific instructional context of kindergarten

This instrument was inspired by Holland's study (1981) and was designed to analyze text produced about understanding the concept of *insect*, explicated in terms of the principle "number of legs". The instrument contained four questions based on three sets of six pictures each concerning insects, arachnidae and miriapodae. The first question established whether or not children had recognition (RC) and active realization (RLa). In the second question, the context was given and children were probed for passive realization (RLp). If they were not able to achieve passive realization, the context was orally identified and they were taught how it should be done, in order to change their specific coding orientation by giving them the appropriate recognition and realization rules. The third question sought active realization (RLa), while the fourth was similar to the first question, seeking to find out if the children already recognized the context (RC) and could actively realize legitimate text (RLa).

Interview

1. The interviewer gives six pictures of 6 animals (photos 1 to 6) to the child.

Interviewer – Look carefully at these animals. Make groups with these animals, placing them in the boxes. Make the groups you wish.
These are many boxes, use those you wish. Why did you group (place) the animals in this way? (RC; RLa).

2. The interviewer takes out the same pictures and makes three groups herself, using the principle "number of legs". (If the child has already used this principle in the first question the interview proceeds to question 2.2.).

2.1. *Interviewer* – Look carefully at the groups I made. Find out why these animals are grouped in this way. (RLp)

If the child answers correctly, the interview proceeds to question 2.2. If not, the interviewer explains the reason for the grouping, using reception learning.

2.2. The interviewer gives the child six pictures of six other animals with the same characteristics (belonging to the same taxonomic groups) as those in question 1.

Interviewer – Look carefully at these six animals. Place each one of them in one of these groups I made. Explain as you go along. (RLa)

The pictures are then removed.

3. The interviewer gives the child six pictures of six other animals with the same characteristics as those used in questions 1 and 2.

Interviewer – Look carefully at these animals. You are now going to make groups again in these boxes as you wish. (RC; RLa)

On the basis of this procedures, a relative value for each child is obtained, with respect to the acquisition of recognition rules and realization rules separately, and the acquisition of specific coding orientation. These values represented a measure of scientific achievement with respect to the concept of *insect.* We constructed a 4 point scale which measured an increasing degree of the specific coding orientation for the micro-context of concept understanding.

Câmara, M.J. and Morais, A. M. (1995). ESSA Group, School of Science, University of Lisbon.

Photo 1 – Ant

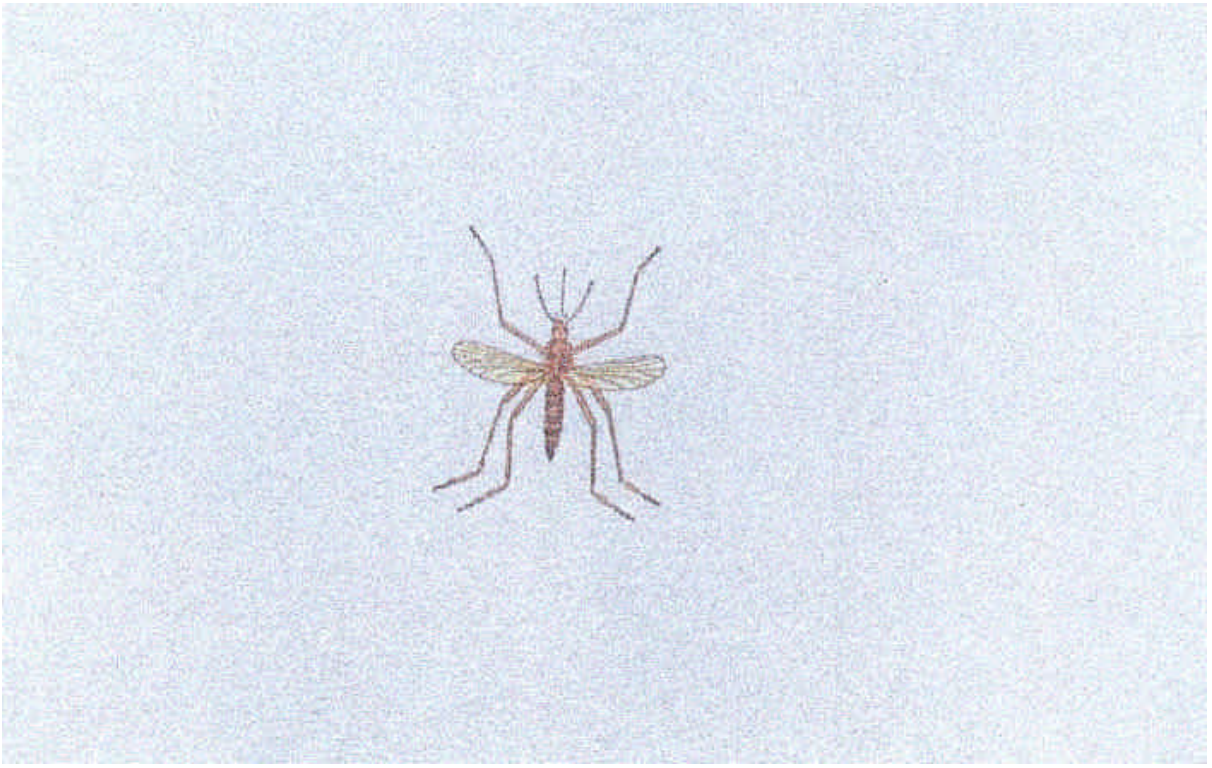

Photo 2 - Mosquito

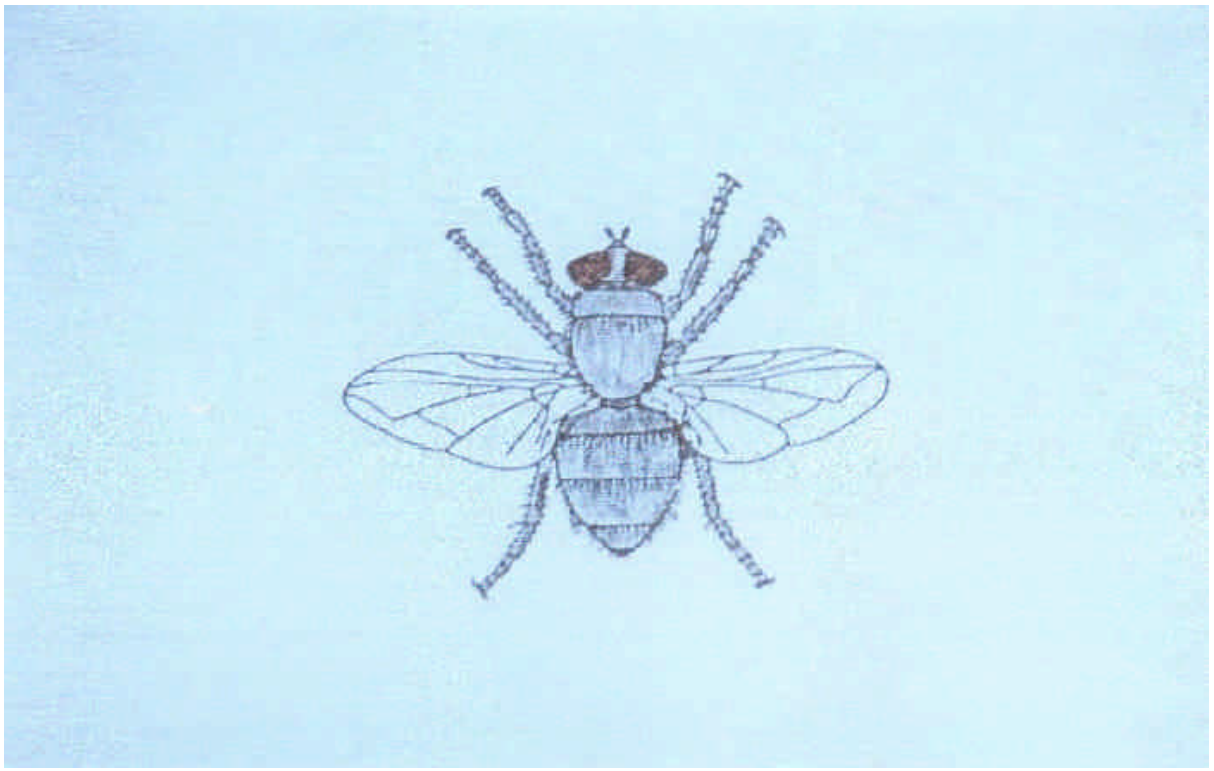

Photo 3 – Housefly

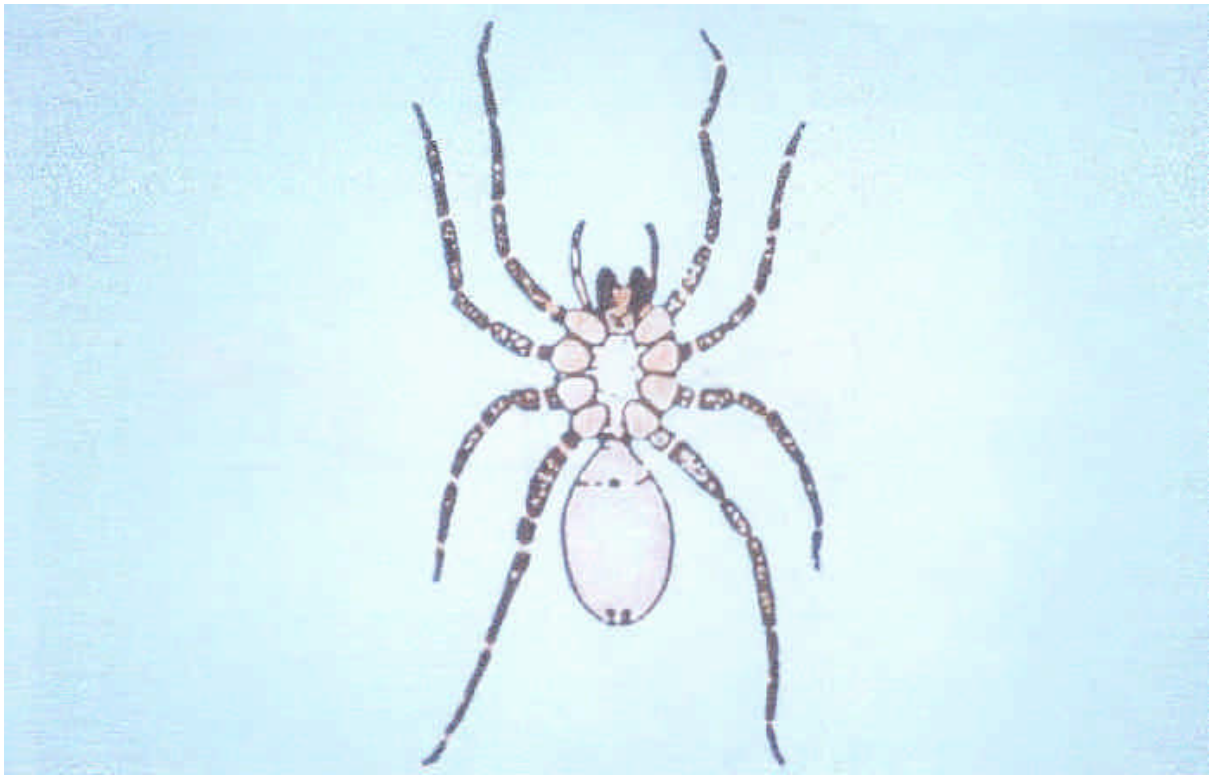

Photo 4 – Spider

Photo 5 – “milpés”

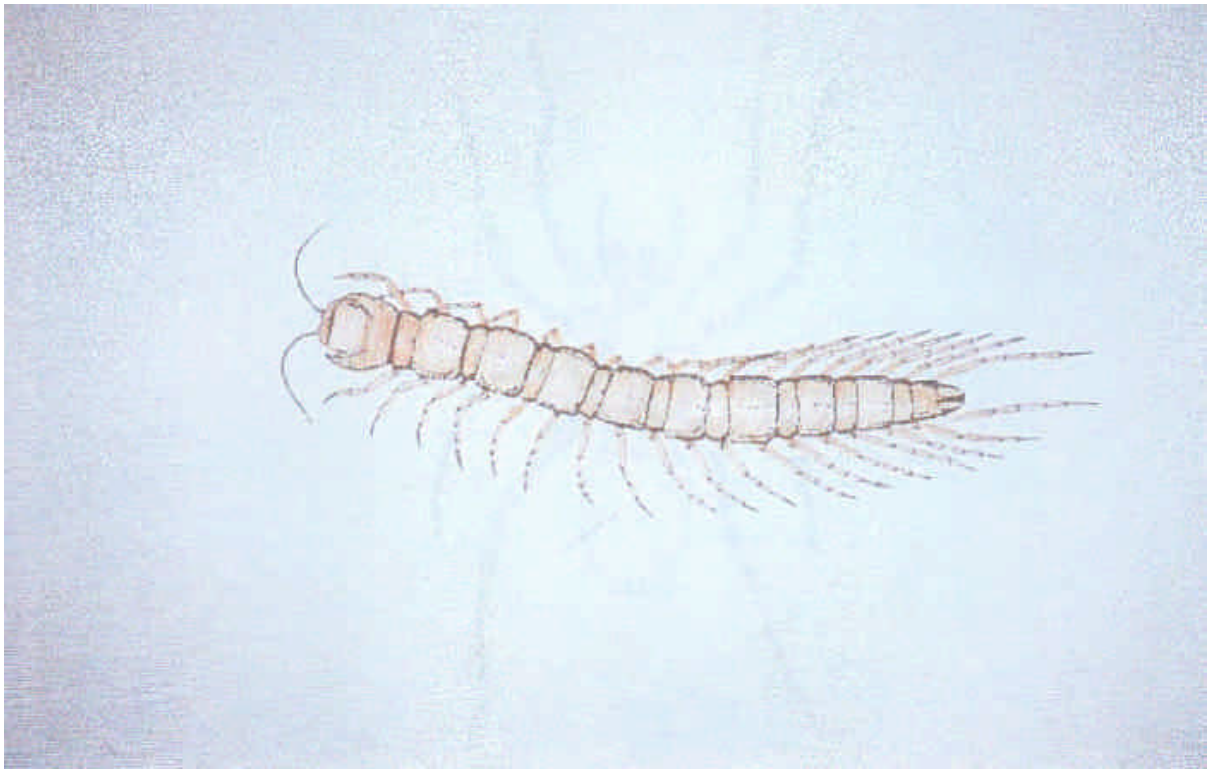

Photo 6 – Centipede