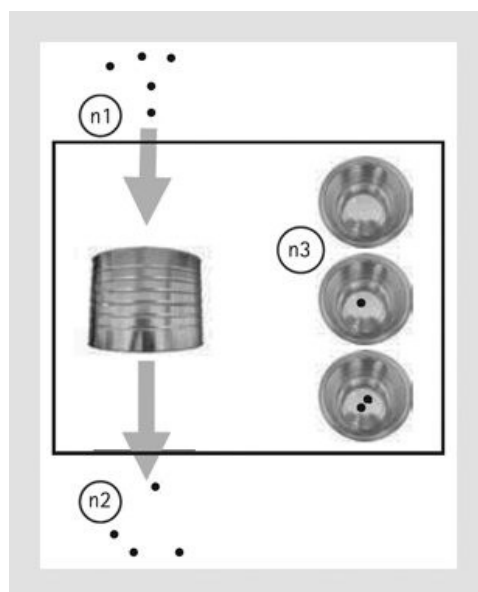**Figure 14.3.**

Screen display of an exact subtraction task (Pica et al. 2004). The animated picture shows n_1 dots entering the can, then n_2 dots coming out of it. The subject is asked to choose on the right the correct number of dots n_3 remaining in the can.

14.6 Gestures as a Means of Explanation for Mathematical Concepts

As there exist numbers without number words, there is also mathematical knowledge without verbalization. We will give examples taken from our fieldwork on Malagasy divination illustrating such situations, and will describe techniques that can be used to access this kind of non-verbal knowledge. As we will see, the fact that this knowledge is not of a verbal nature does not mean that its lexicon is empty, but the meaning of the words of this lexicon cannot be accessed without an understanding of the related knowledge.

The figures used in Malagasy divination are based on one or two seed elements arranged by fours. As each of these four elements can only take two values (one or two seeds), their combination gives 2×2×2×2 = 16 possible such figures. These are all displayed in Fig. 14.4 with their vernacular name, some of them derived from Arabic terms, since Malagasy divination has its origin in Arabic geomancy (e.g. *tareky* derives from *al-tarîq* meaning 'the way, the pass'). Malagasy diviners group them according to a particular predefined classification. Eight figures are designated princes (*mpanjaka*) while the others are called slaves (*andevo*).

This ↳ classification into princes and slaves is given Fig. 14.4. If you look carefully at them, you will find that each series shares a particular mathematical property. Before discussing this property, let us elaborate on the practical use of this classification.