CASE STUDY
Latour and Woolgar classification

In Latour and Woolgar's classification, the first statements (*type 5*) in the scale lie at a level slightly above inscriptions, and they concern facts that scientists consider *banal*. Such 'statements rarely featured in discussions between laboratory members, except when newcomers to the laboratory required some introduction to them' (1979: 76). They constitute *tacit knowledge*, which is (unconsciously used) but almost never made explicit.

Above statements relative to take-for-granted facts are ones (*type 4*) concerning *specialist facts* which pertain specifically to the disciplinary sector (for example, the effects of certain reactions with certain substances). Also these kinds of statements almost never figure in discussions among members of a laboratory; at most they are found in scientific textbooks.

Lying at the next level on the arbitrariness scale are statements relative to *non-definitive assertions* (*type 3*). When uttered or written, such statements are always accompanied by *modalities*, or rhetorical devices of the kind: 'is generally assumed . . . ,' 'we cannot be sure,' 'it is largely unknown which factors cause . . . ,' 'so-and-so has argued that . . . ,' followed by names, dates and places. Statements of this type are to be found in papers or technical reports, and because they are not yet definitive they are more assertions than facts.

Next on the arbitrariness scale are *descriptions*, these being statements (*type 2*) accompanied by modalities which refer to the laboratory's work, hypotheses on the development or repetition of experiments.

Finally come *conjectures* or *speculations* (about a relationship). These are statements (*type 1*) made at the end of articles or in private discussions.

Latour and Woolgar say that statements constantly evolve. In fact, a statement may change state (and therefore its content of facticity) and move upwards or downwards to another level in the scale. Obviously, to become a fact, a statement must be purged of all deixis or indexical expressions like 'we,' 'here,' 'today,' and so on, which by their nature refer to the context of situation. Thus an article submitted to a journal may contain, in the author's judgement, statements of types 2 and 3. Yet if the journals' referees consider these statements too bold or premature, their assessment will transform them into type 1 statements (conjectures). There will ensue a confrontation (sometimes even fierce) between the critics, who maintain that the article contains only conjectures, and the author, who will endeavor to shift his or her statements down to the type 3, or even type 4, level (specialist facts).

According to Latour and Woolgar, much of the work of laboratory scientists consists in operating upon statements – adding or removing citations, making improvements, combinations, and so on – in order to shift them downwards in the arbitrariness scale. Indeed, the ultimate aim of a scientist (and also his or her secret

desire) is to produce a theory recognized by the scientific community as a type 4 statement, one without, or with only few, references to the specific situation or context in which the experiments were conducted, so that it becomes a contextual, universal. At this point the fact has been created, but at the same time all reference to the social context which produced that fact has been removed, and therefore its nature as a social construct. For, as Latour and Woolgar said, scientific facts are social constructions.