

Words and Worldviews: Production of Scientific Technical Terms in Tamil as a Cultural Reconfiguration and Domestication of Modern Science.

T. V. Venkateswaran

Vigyan Prasar, New Delhi, India

The introduction of Modern Science into India during the middle Nineteenth Century, necessitated revision of the Tamil language so that it could effectively designate new reality domains. The issue of rendering this new knowledge form was not just a matter of mechanical translation from European languages into the 'vernacular', and the issue of rendering "science" in Tamil has been identified as a contentious issue. Hitherto studies on coining of technical terms in Tamil during the late colonial period were primarily focused on identifying 'correct' method for rendering Scientific Terms from English into Tamil or have tended to highlight the identity politics of those who favored 'pure' Tamil words and those who accepted Sanskrit words. In contrast, the 'reality domain' that these new words aspire to designate were usually considered non-problematic. As the identity politics surrounding the root words of the new terms being coined was problematized and accentuated, the studies were blind to the cultural politics of the metaphors about the reality ingrained inside these new words. This paper attempts to show, by way of critically narrating a case study, that the coining of the new terms was not just a matter of mechanical translation from English into the vernacular (in this case) Tamil, but 'translation' was a way of reconfiguring and domesticating the new knowledge.

The paper examines the contours of the development of the technical term to denote 'chemistry' in particular 'organic chemistry' in Tamil. While Rev. Fr. Fish Green, an American missionary advocated use of words in vogue amongst Tamil speakers for scientific technical terms, he discards the use of the word '*rasayanam*' arguing that the word comes to designate 'alchemy'; 'astrology' and all such superstitious ideas of the na-

tives. As an alternative he coins a word '*chemistham*' (transliteration of 'chemistry') though many writers, especially native authors, used the word *rasayanam* to designate chemistry.

Rajagopalachari, a political activist and Tamil scholar coins a word '*Yakkai Rasayanam*' to denote 'organic chemistry'. The '*Yakkai*' has 'pure' Tamil root while *Rasayanam* is culled from Sanskrit but of common use among Tamil people. While justifying the use of the word '*yakkai*' to designate 'organic' it is possible to discern the deistic motive behind Rajagopalachari. *Yakkai* connotes 'organized' and alludes to 'vitalism' and 'chief organiser', that is God.

The word 'organic' designated various aspects in different historical periods. Its origin is in the word- Organ- a musical instrument. Latter the word organ was used to denote - body parts - such as eyes, hands and so on. From this usage the word 'organisms' was coined to denote things 'living and growing'. It was this sense in which the word 'organic' was dominantly used in the 18th Century. Interestingly Organic and Mechanical were congruent words till about the middle of the 20th century. Through 19th Century to about middle of 20th Century organic meant 'an object having parts which cooperate to produce a single useful result and that the separate parts having little or no value on their own'. Organic also had a connotation of either that 'which is *instrumentally planned* or that which is *naturally evolving*'.

Yet, C Rajagopalachari wishes to derive 'organic' of 'organic chemistry' forcefully from 'organized'. Was this the only option available to Rajagopalachari? The word 'organic' was translated into Tamil at different point

of time variedly, but it is pertinent to note that never was 'organic' understood to be 'that is organized'; Organic rendered as *Angkathhirkaduththa* [that which belongs to parts], *Karuvi pondra* [things that possess tools], *Urupolla* [that which has parts], *Indra* [Mechanical instrument]. Though the word 'organic' and 'organized' in Tamil had a same root in the past in the contemporary usage they had diverged sense. Organic is not one that is necessarily 'organized' in this sense.

True the study of organic chemistry was embedded in the ideology of 'Natural Theology' in Europe during the 1850s that would have obviously influenced Rajagopalachari. But soon there was a sea change in the understanding of structure of organic chemistry. By 1865 Kekule arrived at the structure of benzene. Development of spatial chemistry during the late 19th Century and early decades of 20th Century, manufacture of synthetic dyes, and emergence of chemical industry in early decades of 20th Century "established organic chemistry on a molecular basis out of vitalism." Clearly by the 1930s organic chemistry was not embedded in 'natural theology' and 'vitalism' was certainly out within the sciences. From the point of view of language, for Rajagopalachari there were many alternative options available to trace an appropriate 'root' word for 'organic' and to coin the word for 'Organic Chemistry' in Tamil. Alternatively he could very well have considered the word 'organic chemistry' as only a pronoun (just a name) and not a description, and coined a term to this branch of Chemistry, say as 'carbon chemistry'. Or he could have treated the word 'organic' as derived from the word 'organs' or 'organisms' [in the context of chemistry] and could have rendered it as 'chemistry of living things'. Or as was the contemporary usage of the term it could have been traced to 'those which are naturally evolving', but clearly Rajagopalachari chooses the interpretation 'that which is instrumentally planned' as the 'correct' meaning of the word 'organic' and alludes to argument of design; by categorizing it as a separate type of matter that possibly have hidden hand of 'creator' behind it.

The current technical term in usage '*Karima Vedyal*' (Carbon Chemistry) was suggested by Chennai Magahana Tamil Sangam in 1938 is exorcised of any reference to 'tradition' and as matter of fact is very secular. The term *Karima* means 'Carbon' and *Vedyal* means 'Chemistry'. However, the term *Vedyal* is a modern word coined from a root word '*Vedi*' meaning 'transmute'. The verb '*Vethithal*' implies transmutation of baser elements in *Siddha* tradition of 'alchemy'. The word *Vedi* also came to denote, I am told, 'Drug- esp drug used by *Siddha* school of medicine, derived not from plant sources but from chemical sources'. How did this secularization of coining of terms come about? Social historians posit that during 1930s there were

broadly three well identified strands of ideological 'cultural politics' in Tamil Nadu. One group represented the traditional elite - largely dominated by Brahmins and consisting of elite from upper caste Hindu section were characterized by their sympathy towards 'tradition' - meaning Sanskrit traditions, and in politics advocating 'Pan Indian Nationalism'. Another group was the Tamil Vellala and non-Brahmin upper caste elite, who articulated 'Tamil identity politics' drawing inspiration from the Tamil past. Thirdly, there were the Left/self-respect movements, which not only questioned the 'past' but also 'invalidated' it. As the balance of power of the third group swelled in the public sphere during the 1940s; in the ensuing social upheaval, impact of the self-respect movement's rationalism and the left ideology geared the 'rediscovery programme' in a direction of taking it to secular plane away from the 'past tradition' or 'indigenous religion'. Rationalism was privileged in the re-discovery programme.

Language and the metaphors used in various disciplines of science generate social images, radically recast our perception of reality and suggest a possible relation and analogies. Analysis of metaphor illuminates the nature of changes in the meaning of theoretical terms, terms which are theory laden. Metaphors import social expectations into our representations of nature and by so doing they simultaneously serve to reify (or naturalize) cultural beliefs and practices. On the simpler and most obvious level, language gives us instruments of perception that conceptually magnify an effect; create- precisely those similarities and differences with which metaphors begin. Analyzing these debates and moves this paper argues that 'translation' was a way of reconfiguring and domesticating the new knowledge and evidently 'cultural lexicon of metaphors and images' of the recipient society are embedded in the technical terms coined.

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