Unravelling the Dynamics of Technical Terminology and Translation

Dr. Kanta Galani
Assistant Professor of English,
Central Sanskrit University Jaipur campus,
Rajasthan, India.
kantagalani@gmail.com
https://orcid.org/0000-0002-4654-0358

Abstract:

Technical words are those that do not belong to everyday colloquial usage but are associated with specific fields of knowledge such as Sociology, Physics, Chemistry, Botany, Biology, Philosophy, Psychology, Economics, Politics, Logic, and Mathematics. According to Dr Bholanath Tiwari, words whose meanings are clearly defined and fixed within branches of knowledge or scriptures are called technical terminologies. Since their definitions are context-bound and discipline-specific, they are categorised as technical terms.

It would not be an exaggeration to say that the creation of terminology is an integral part of the process of innovation. Terminology can be analysed at both linguistic and socio-scientific levels. Structurally, there is no major difference between general words and technical terms. However, from the perspective of meaning, an important distinction exists.

In common language, words may function in different semantic modes such as Abhidha (denotative meaning), Lakshana (indicative meaning), and Vyanjana (suggestive meaning). Technical terms, however, are restricted to one precise meaning only. While the meaning of common words may be extended or modified for literary effect or everyday expression, such flexibility is not permitted in technical terminology.

For example, expressions like *"a ray of hope"* or *"he is a donkey"* use words figuratively in general or literary language. Such semantic deviation is never acceptable in technical terminology. In Physics, the word **"ray"** strictly refers to a *ray of light* in its scientific sense. Similarly, in Zoology, the word "donkey" denotes only a specific animal species and cannot be used metaphorically to mean a fool. Thus, technical terms are used in their fixed, discipline-specific meanings within their respective subject areas.

Keywords: Technical terminology, Translation, Significance, Contextual understanding.

Technical words are important for expressing scientific subjects. Because it is very necessary in such subjects. What the speaker wants to say or what the author writes should reach to the listener or reader in the same form, not by expanding the meaning. This is only possible when the concept or objective definition of that subject is certain or all the people of that language or subject use that word in that sense only. If the meaning is not certain, then the listener or the reader will be more likely to take the speaker's words or the writer's words in a different or different meaning. The biggest benefit of using precise terminology will be that people will be able to understand correctly what is written on a topic today, in the future also. The Technical words of any language can also be divided on different grounds.:

- Based on the history
- Based on the experiments
- Based on the subtlety
- Based on the source
- And based on the subject.

The meaning of technical words lies in their core more than their external structure. For example, 'lined cheque', its general meaning is 'a check on which a line has been drawn', but as a technical term in banking, its technical meaning would be 'a check on which two parallel lines have been drawn on the left side, which can be paid to the person in whose name the check is drawn, not to the holder of the cheque, etc.

The basic tendency of technical words is towards the subtilization of meaning. Due to which the technical word becomes the meaning of a specific or subtle word. For example, it narrows down the common meanings of temperature, heat, torrid, and warmth (ताप, गर्मी, उष्मा और उष्णता) and differentiates them, and distributes their meaning characteristics in a

complementary distribution among these words. He makes a technical distinction between cold (ठंडा, अतप cooling, शीतन refrigeration प्रतिशीतन and chilling द्रुतशीतन). He also differentiates between rays and radiation. There is also a difference in the amount of technicality or technicality inherent in some technical terms. Some words have less and some have more definition. Some words could be used in both technical and non-technical purposes. Therefore, sometimes such words can be divided into fully defined and semi-defined. Like molecule अणु, atom परमाणु, radioactivity रेडियोएक्टिवता, gene जीन, phoneme, morpheme रूपिम, allophone उपस्वन etc. Technical terms are presented in their full technical sense in their respective subject areas. In contrast to these, there are some technical words which despite being technical are used in multiple branches of knowledge. These words are addressed as semi-technical.

According to Dr Surajbhan Singh, the boundary between full and semi-defined words is thin and controversial. There are many such words which, according to the context, have the potential to be used in all three senses: technical, semi-technical and non-technical. Translation of technical material includes manuals. In which there are many such concepts which are of a special type. Semi-technical words include materials of permanent nature i.e., various literature, general orders moreover, non-technical includes general manuals etc. For example, the English word 'speaker' can be taken in three different meanings. Technical meaning is 'Speaker' of Parliament, semi-technical meaning is 'loudspeaker' and non-technical 'speaker.'

The relationship between the general and technical meanings of technical terms is both transparent and opaque. One thing worth noting is that the technical meanings of transparent words are self-explanatory. Example- हिन्दी का स्तनधारी (mammal) आकस्मिक अवकाश (casual leave) नपुंसक लिंग (neutral gender) स्त्रीरोग विज्ञान (gynecology) मनोविकार (psychiatry) शरीर रचना (anatomy) रक्तस्राव (hemorrhage) अस्थिरोग विज्ञान (orthopedics) and त्वचारोग विज्ञान (dermatology).

The external structure of some technical terms does not give a clear understanding of their actual technical meaning. Such words are called opaque. The terminology used in अधिकर Adhikar is often opaque. Like Fahrenheit, Voltmeter, Ampere, फारेनहाइट, वोल्टमिटर, एम्पियर, etc.

Many technical terms are also misnomers which are mistakenly used in a different meaning. For example, the word gavial- this is the English transliteration of the Hindi word Ghariyaal घड़ियाल. Nonetheless for the first time, 'V' was read instead of 'R' by mistake. As a result, it was later presented in the same form out of ignorance. Many times, it is also seen that at the time when that word is created, that word is in accordance with the concept. Later, because of discoveries, its concept changes. However, it has become stereotyped, but words can be used in the same form. For example, malaria is made up of Latin mal (bad) and aeros (air). At one time it was believed that malaria was caused by dirt or dirty air. This name was derived from this. After research, it was found that this disease is caused by mosquito bites and not by smell. But due to it being stereotyped, the word malaria continued to be used for it. Similarly, the word 'pay' is the short form of payment. However, it has been mistakenly taken to mean salary. When the correct form is payment भुगतान. Due to the structure of very few technical terms, it is not possible to cover the entire variety of technical meanings within one or two words. Generally, the entire concept is named because of one or two major characteristics out of various semantic features of a technical concept. The remaining meanings are obtained through characteristic definitions.

In old times, typing machines did not have the facility to type 'स्र', hence typists used to write 'स्' instead of 'त्र' because 'स्त्र' also looked like 'स्र'. Later in Sanskrit and Hindi, सहस्त्र (Sahastra) started being written and pronounced in place of सहस्र (Sahastr).

Standardisation of Terminology:

If the defined word is not standard, then it will not be defined in the true sense. Standardisation is the first step in the process. 'Reducing the diversity of forms. Before standardisation, more words or forms may be prevalent for the same technical concept. Selection of one word form from multiple such words or forms is the first step of standardisation. David Hagen (1966) has called this as the process of codification कोडीकरण and Pit Carder (1950) calls it the quality of internationalism अंतर्राष्ट्रीयता. Newstupny (1970) calls it स्थिरीकरण stabilisation. As a result of codification, successful communication is possible even if there is distance between experts working in the same subject areas. Also, there is uniformity in this terminology. Its goal is 'same meaning of one word.'

For example, for the word 'director', words like 'निर्देशक', 'संचालक', तथा प्रबंधक are used in various Hindi-speaking areas. Similarly, for the word engineer, the words engineer, इंजिनियर, अभियंता और तंत्री are used. Among this diversity of synonyms, selection or determination of one word form for a meaning is the first step to the process of standardisation of terminology. The campaign to create scientific and technical terminology at the national level is a part of this process. Moreover, its goal is to bring as much uniformity as possible in the synonyms of technical terminology.

According to Hegen 1966, the second stage of standardisation is elaboration, which means increasing the variety of behavior or function as much as possible. Because the wider the usage, the more standard it will be. In this process, the use of these words is also evaluated. Due to which they get social acceptance or rejection. Also, during this period, revision and amendment of terminology are also possible. Creating words is not an end in itself is the first step towards usage. The significance of novel words lies in their use. If those words do not come into use or trend, then

despite being excellent from the point of view of grammar and selection, it is useless. The real test of such terminology is pragmatism. This process takes the language to its destination. Moreover, due to its style-specific behavioral area, it maintains distinction from the language style of other behavioral areas. For example, words used in Office, Journalism, Mathematics, Economics, is what Halliday (1964) calls Register प्रयुक्ति.

Word Formation (शब्द निर्माण की युक्तियाँ): The need for new things in one's behaviour is common. However, it is also true that when a novel word is required for a concept, it is difficult to create novel words immediately. In such a situation, the first attempt is to use as many such words as are available in the language store. Which is self-evident or able to make one understand more about the properties of the object. These same strategies have been used in the creation of technical terminology in the Hindi language also which are as following:

1 Expansion of meaning अर्थ विस्तार- In this, the available words giving close meaning are converted into a new technical meaning. In such a situation, those words are used in both old and new meanings. - Like electricity, radio, release बिजली, आकाशवाणी, विमोचन, etc.

2 Limitation of the meaning अर्थ संकोच – In the vocabulary of the language, such words are taken which are close to each other and are used in a broader sense. The meaning of similar words is narrowed down to a particular technical meaning. For example - संसद (parliament) जनगणना (census). In Sanskrit language it was used for any type of meeting(सभा). Similarly, the general meaning of जनगणना is to count the people. However, now it has become customary to census.

3 Formation of novel words अर्थ सर्जन: Due to the non-availability of words here, completely new words must be created. Words are often formed by adding prefixes and suffixes to the root word or by creating a complete word. Like – संकाय (faculty), नसबंदी (sterilisation), सर्वहारा proletarian,

विमान-पारिचारिका flight attendant, परियोजना (Project), अभियंता (Engineer), दूरदर्शन (Television) etc.

4 Literal translation शब्दिक अनुवाद: Some technical terms are obtained by translation from the original or intermediate language. Sometimes this type of translation does not match the vocabulary of the translated language. But if a language society uses it at the collective level, then this type of literal translation is easy. For example- श्वेतपत्र, लालफीताशाही, वायुप्रदूषण, स्वर्णजयंती कालाधन white paper, red tape, air pollution, golden jubilee, black money, etc.

5 Adoption of English words अंग्रेजी शब्द ग्रहण: International words or such words which have been assimilated into Hindi and are highly prevalent are adopted as they are- बेंक Bank, Station-स्टेशन, Notice नोटीस, Bulb बल्ब, Heater हीटर, Railway रेलवे, etc. Some words are translated into Hindi from the point of view of pronunciation and writing in English, like- Academy, Kamadi, Tragedy, Technical Doctor, etc. They are used same in Hindi also- अकादमी, कामदी, त्रासदी, तकनीकी डॉक्टर, etc.

6. Mixed method मिश्रित पद्धति: In this method, words are used by adding Hindi suffixes to English words or half English and half Hindi words. Such as registration, carbonization, shareholders, codification रजिष्ट्रीकृत, कार्बनिकरण, शेयर धारक, कोडीकरण, etc.

Translation and Pragmatism:

Translation involves the transforming of ideas from one language to another. The process of translation and synonyms has made a huge contribution to the creation of technical words or synonyms in Hindi. Broadly speaking, in the translation process, like the general translation process, two strategies are specifically used. One is literal translation, and the other is linguistic translation. For example, green revolution हरित क्रांति, black money कालाधन. Similarly, for

outstation cheque बाहरी चेक, it is the language translation. While translating, the role of technical words is also important. Especially regarding knowledge, science, and technology. Because on the one hand, technical synonyms are helpful in translation, on the other hand, if not used properly, they also create difficulty in the language. Ex- (food ministry) खाद्य मंत्रालय के लिए भोजन मंत्रालय etc. Sometimes there is a need to use different synonyms for the same English technical term in different subject areas or contexts. For example, charge कार्यभार - in administration, expenditure. व्यय-- in accounting, charge आरोप- in law, loan उधार - in commerce, raid धावा - in political science. Similarly, there is another word (credit) - loan उधार या ऋण - in economics, credit - in education, credit श्रेय- - in literature, etc. In such a situation, it is a big responsibility of the translator to understand the context and meaning of the words properly and select suitable synonyms as per the need.

Conclusion:

As the title refers, this research is to explore the complex relationship between specialised vocabulary and the process of translating it accurately across languages. The study of how technical terms are formed, structured, and used, and how their precise meanings are handled, preserved, or challenged when they are translated from one language to another.

It suggests discussion of things like:

- Meaning fixity of terms

- Problems in translating technical vocabulary

- Standardisation of terminology

- Linguistic vs subject knowledge issues

- Cultural and scientific equivalence

- Terminology creation in modern languages

Technical words play an important role in the accurate communication of scientific, academic, and professional exchange of knowledge. Their primary function is not aesthetic expansion but conceptual precision. A technical term must convey a fixed, objective, and universally accepted meaning so that the author's intention reaches the reader or listener without distortion. When meanings remain ambiguous or loosely defined, the risk of misinterpretation increases, weakening the reliability of knowledge transmission—both in the present and for future generations.

The paper shows that technical terminology evolves through historical usage, experimentation, conceptual refinement, sources, and subject specificity. The distinction between fully technical, semi-technical, and non-technical terms highlights the fluid boundary between everyday language and specialized discourse. The relationship between general and technical meanings may be transparent or opaque, and in many cases, terminology suffers from misnomers, historical errors, or conceptual shifts due to scientific advancement. Despite these challenges, technical terms retain their value through characteristic definitions and contextual clarity.

Standardisation emerges as the cornerstone of effective terminology. The processes of codification, stabilisation, and elaboration ensure uniformity, social acceptance, and functional expansion of technical terms. Without standardisation, multiplicity of synonyms leads to confusion and weakens academic communication. Word-formation strategies such as semantic expansion, restriction, neologism, literal translation, borrowing, and mixed methods demonstrate how Hindi has adapted to modern scientific and technical needs.

Finally, translation plays a crucial pragmatic role in terminology development. The translator acts as a mediator balancing literal accuracy with contextual appropriateness. Selecting correct equivalents across disciplines demands deep conceptual understanding rather than mechanical substitution. Thus, technical terminology, standardisation, and translation together form an

interdependent framework that ensures clarity, precision, and continuity of knowledge in a multilingual academic world.

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