

## **Challenges in Machine Translation from a Pragmatic Perspective: A Contextualized Approach**

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### **ABSTRACT**

The paper explores the field of Machine Translation in linguistics, emphasizing its growth and the challenges it faces. Despite the intersection of computational linguistics and pragmatics, machine translation often struggles with accuracy due to the intricate nature of pragmatic competence beyond machines' capabilities. The study highlights the core challenge of machines, understanding the pragmatic elements of language, including contextual and situational cues crucial for effective communication. Further, the paper discusses the Pragmatic Competence, which requires an awareness of socio-cultural backgrounds and speaker mindsets, expanding communication beyond linguistic rules to interpersonal and social dimensions. Cultural competence is crucial for effective cross-cultural communication, emphasizing the importance of sensitivity and knowledge. The inclusion of examples from the writings of Indian English writers like Sudha Murty and Chetan Bhagat underscores the significance of pragmatic competence. Additionally, the paper discusses various cultural traditions, rituals, and societal norms embedded in context, emphasizing their importance for accurate translation.

### **KEYWORDS**

Machine Translation; Pragmatic Competence; Indian Context; Artificial Intelligence.

### **Emergence of Machine Translation**

Machine translation, a relatively recent field within linguistics, focuses on the development of computer programs capable of understanding human languages. This area poses a philosophical and logical challenge, intertwining with computational linguistics and pragmatics. Computer scientists aim to create programs that not only comprehend human languages but also explore the broader aspects of human cognition and linguistic abilities. Despite the numerous programs designed for translating linguistic data across languages, users often encounter challenges with the

accuracy of translated content. These issues stem from the limitations of computers, particularly in pragmatic competence. The complexity of pragmatic elements, essential for effective communication, poses a significant hurdle for machine translation. Professionals in the field of computer science engage in processing natural languages, encompassing linguistics, intelligence, psychology, philosophy, and pragmatics.

### **Limits of Machine Translation: A Call for Pragmatic Competence**

Machine translation, a pillar of man-machine interaction, holds immense

promise for bridging language barriers. Yet, despite strides in computational intelligence, current translation tools often fall short, failing to capture the subtleties of human communication. This gap stems from their limited understanding of pragmatics, the art of interpreting language based on context and situational cues. While early proponents of machine translation envisioned flawless conversions at lightning speed, reality proved harsher. Simply feeding corpora into algorithms, while effective for basic sentence structures, stumbled upon the nuances of meaning hidden within. Grammatically correct translations often felt stilted and unnatural, lacking the cultural and situational grounding that makes language truly meaningful. The crux of the issue lies in the limitations of purely mechanical approaches. Machines excel at manipulating data, but they struggle to grasp the dynamic interplay of context, intent, and audience in human communication. A new term, a double entendre, a culturally specific reference—these all remain stumbling blocks for even the most sophisticated algorithms.

Herein lays the crucial role of pragmatic competence. This human ability to decipher unspoken meaning, infer intent from context, and navigate the unspoken rules of communication proves elusive for machines. Until they can master this nuanced dance of language, machine translations will remain cold and mechanical, leaving a gap between accurate syntax and true understanding.

### **Pragmatics: Understanding Context and Situations**

Pragmatics explores the analysis of meaning as expressed by the speaker and understood by the listener. In essence, it focuses more on deciphering the speaker's intended meaning behind their expressions than on the literal meanings of individual words or phrases. Pragmatics,

therefore, centers on comprehending the meanings attributed by speakers.

This perspective naturally extends to the idea that listeners can deduce meaning from spoken words, facilitating their understanding of the speaker's intended message. The study delves into implicit communication, exploring what individuals opt not to express in specific contexts, essentially searching for deeper layers of meaning. The primary emphasis of pragmatics lies in scrutinizing the additional information conveyed alongside words, surpassing their precise meanings. This viewpoint prompts an exploration of the factors influencing the decision between spoken and unspoken knowledge. The concept of distance becomes pivotal to the simplest explanation, where physical, social, or intellectual proximity signifies shared experiences between two individuals. The speaker tailors the provided information based on the perceived distance of the listener, and this branch of study concentrates on the implications of being relatively close in space.

The study of pragmatics becomes imperative for language learners, not only for comprehending the intended meaning in a given context but also for grasping the meaning inherent in silence. Furthermore, pragmatics plays a crucial role in developing politeness strategies. Learners are encouraged to move beyond producing grammatically correct sentences and focus on generating language that is contextually appropriate. They should possess an understanding of intentional meaning and the significance of deixis, speech, turn-taking, presuppositions, and implications in everyday contexts. Leech distinguishes between linguistic competence and pragmatic competence, noting that while the rules of language are primarily conventional, the principles of pragmatics are fundamentally non-conventional, driven by conversational goals.

## **Pragmatic Competence**

Pragmatic competence refers to the capacity to comprehend utterances within a given context. It entails the ability to generate and understand socially accepted expressions, demanding a keen awareness of socio-cultural backgrounds for both production and comprehension. Similarly, it necessitates an understanding of the speaker's mindset, as speakers often convey meanings beyond their literal words or express intentions contrary to their statements. Deciphering such speech acts presents a significant challenge, requiring a degree of socio-psychological maturity.

Consider the example of a politician stating, 'I am not interested in the Prime Ministership.' This statement is meant to be interpreted in the opposite way, relying on the listener's awareness of political culture. An average Indian familiar with this cultural nuance and embracing the Chinese proverb that defines a leader as someone pledging to build a bridge where no river exists would effortlessly grasp this speech act. Communication, in essence, relies heavily on interpersonal and social context.

In other words, meaning transcends phonology, morphology, or syntax rules. Instead, syntactic and phonological structures adapt to the expressive needs, incorporating the speaker's speech situation and intentions. Communication inherently unfolds as an interpersonal and social phenomenon. The utilization of language for communication inherently encompasses interpersonal and social dimensions. Context emerges as the key in linguistic interactions. Without context, words become alien and lack proper meaning.

## **Cultural Competence**

Cross, T., et al. assert that for a system, agency, or group of professionals

to function effectively in cross-cultural settings, they must possess a set of behaviors, attitudes, and principles collectively referred to as cultural competence (80). Prioritizing cultural competence is essential if we aim to elevate healthcare standards and enhance health outcomes. This involves synthesizing and enriching knowledge about diverse groups, utilizing this knowledge to establish standards, policies, practices, and attitudes adaptable to various cultural contexts (King 566). "Cultural Competency" denotes the adept navigation and adaptation to diverse cultural environments. Sensitivity, knowledge, and understanding alone are inadequate for a comprehensive grasp of the concept. A common error in learning English is relying solely on existing language knowledge to comprehend spoken communication.

## **The Role of Pragmatics in Computational Linguistics in exemplifying Communication Nuances**

Many words, and perhaps the majority, appear to lack a speech act type that precisely aligns with their syntactic structure. This phenomenon has long been recognized and understood. Let's explore two instances that highlight this fascinating aspect. An exemplary case is that of indirect requests, a form of communication where a statement that resembles a question is employed to politely ask or encourage someone to perform an action. Consider the phrase: "Would you kindly transfer the salt to me?" While it might initially seem like a binary question about the person's ability to move the salt, it is, in fact, a courteous request to carry out the activity. This illustrates how a word's outward morphological structure can differ from its internal structure within a speech act. Additionally, instances exist where a sentence structure that appears declarative may, in reality, be interrogative.

However, computers lack the inherent human context and the ability to map nuanced contexts. Take, for instance, the phrase 'he was too good for the job.' Here, the implicit meaning surpasses pure lexical semantics at the syntactic level, resulting in ambiguity. Moreover, instances of pure syntactic ambiguity arise when there is an absence of a clear context. Consider the sentence: 'Flying a plane is dangerous.' This statement can be interpreted in multiple ways, and the speaker's intention introduces a layer of complexity in translation. Machine translation may struggle to accurately convey the intended meaning in such cases.

### **Examples that might not align well with Indian Cultural norms:**

*Example 1: Navigating the Cultural Nuances of "Seeing a Girl" in Chetan Bhagat's "Two States"*

Chetan Bhagat's novel, *Two States: The Story of My Marriage*, moves through the complexities of love and tradition in contemporary India. The protagonist, Krish, grapples with the clash between his personal desires and the cultural expectations surrounding marriage. One such custom is the "seeing the girl" practice, where families meet and assess the potential bride and groom. (Bhagat 114)

While a simple translation might render this as "meeting the girl," it fails to capture the deeper cultural significance. In the Indian context, "seeing a girl" carries a weight of tradition, involving family approval, social norms, and unspoken expectations. It's not just a casual encounter; it's a formal assessment with potential consequences for both families. Understanding this cultural context is crucial for accurate translation. Without pragmatic competence, a translator might miss the subtle nuances of power dynamics, family pressures, and underlying emotions that shape this practice. They might also overlook the

potential for humor, awkwardness, and even conflict that often arise during these meetings. Therefore, this example highlights how neglecting cultural context and pragmatic awareness can lead to mistranslations that misrepresent the richness and complexity of Indian culture. By incorporating pragmatic competence, translators can bridge the gap between languages and cultures, ensuring that the essence of the source text shines through in the translated version.

### *Example 2: The Challenge of "Bride-Seeing" in Machine Translation*

Translating a passage, such as the excerpt from *Mahashweta* by Sudha Murty, especially within the intricate landscape of Indian cultural nuances, presents numerous challenges for machine translation systems. The cultural practice of 'bride-seeing,' a pivotal aspect in traditional arranged marriages, adds a layer of complexity. This custom involves a formal meeting where potential partners observe each other in the presence of their families. The significance of this occasion might not be immediately discernible to a machine, and translating it literally could fall short in conveying its deep cultural importance. The term "bride-seeing" may lack a direct equivalent in certain languages, posing a hurdle for accurate translation. Machine translation systems often grapple with idiomatic expressions or culturally specific terms that lack direct counterparts in other languages. The intricacies of this process and the cultural implications it carries risk being lost in translation.

It was the day Anand was to meet Anupama, in the presence of the elders in the family, to complete the formality of 'bride-seeing'. Even though the match was certain, Radhakka had insisted on first 'seeing' Anupama before agreeing to the engagement. (Murthy 58)

*Example 3: Nakshatram Matching and Luggage Gestures in Pragmatic Contexts*

Anannya discloses the significance of Nakshatram to Krish. She explains, "It's an astrological chart." A similar scenario unfolds when Anannya herself encounters a potential match named Harish. In this instance, Anannya notes, "The Nakshatram matched, so they're here." (Bhagat, 2009)

Even Krish, an educated individual, finds himself entangled in this cultural practice when opting for the Chennai branch over Delhi. Faced with his decision, his mother insists on consulting an astrologer, expressing, "I need to meet an astrologer. I'm unsure about the phase you're entering." This example vividly illustrates the pragmatic nature of such situations. Without an understanding of the societal importance placed on Nakshatram matching for marriages, effective communication would fail pragmatically. Familiarity with these pragmatic contexts is essential for achieving accurate translations.

In another instance Krish endeavors to make a positive impression on Anannya's family by offering to carry their luggage, but this well-intentioned gesture takes an unexpected turn. Anannya's mother reacts critically, remarking, "We can manage. Why are you making these people, your potential in-laws, carry luggage? You've unwittingly assumed the role of a servant at the airport." (Bhagat 158)

This scenario is a poignant reflection of a common cultural and social dynamic prevalent across various contexts. It delves into the dynamics of in-law relationships, societal rituals, and the attitudes associated with them. In this instance, the act of a son-in-law assisting with the father-in-law's luggage is viewed unfavorably in the Indian cultural mindset. The notion of helpfulness transforms into an unintended perception of servitude,

illustrating a deeply ingrained societal perspective.

*Example 4: Cultural Convergence and Conflicts*

This example illustrates a clash of cultural practices, specifically in Tamilian culture where meals are traditionally served on tree leaves. Shipramasi expresses her disbelief, stating, "We have to eat leaves? What are we, cows? They hardly spend anything on weddings; how fortunate!". (Bhagat 201)

This scenario unveils the intersection of two distinct cultures. The Punjabi parents struggle to comprehend the customary ritual in Tamilian culture, highlighting the challenges that arise when cultural practices differ. To a person not familiar with the context, decoding this conversation can be nearly impossible. Additionally, the cultural perspective on spending money is underscored as a notable feature within the broader societal context.

*Example 5: Cultural Symphony and Spiritual Complexity*

I lightly tapped the cards, contemplating whether to flip them. Abruptly, loud chants interrupted my thoughts. "What's that?" I asked. Glancing at the clock, I noticed it was 10 pm. "Those are Hindu chants," Omi informed. "Angry Hindu chants," added Ish. (Bhagat 102)

This example not only captures a specific cultural scene but also inspects into religious rituals. In a country with a multitude of deities, translators face a daunting challenge in deciphering the intricate contexts and nuanced meanings associated with such diverse practices.

**Conclusion: A Call for Contextualized Translation through Pragmatics**

The collective efforts of both learners and teachers can yield deeper insights into various contexts. Increased interactivity will be a key outcome, with a

crucial emphasis on enhancing precision and accuracy in understanding both the psyche and textual content. The fundamental concept of addressing the appropriate competence and fostering awareness is pivotal in achieving favorable

outcomes. This approach effectively contextualizes resources within the framework of pragmatics. Consequently, this study contributes to making translation studies more precise and meaningful.

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