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Pragmatic and Semantic Factors in the Interpretation of Scalar Implicatures

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Abstract
The complex interactions between pragmatic and semantic factors during the processing of scalar implicatures are examined in the present research. Respondents' evaluations and recommendations, especially during critical trials, show a complex comprehension shaped by semantic meaning and pragmatic suitability. Differential assessments in critical trials show instances where logically valid assertions are judged to be pragmatically inaccurate hinting to possible pragmatic contradictions. Recurring themes emerge from participants' remarks on language adjustments, highlighting the need for statements that satisfy semantic accuracy requirements as well as contextual requirements. The results enhance our understanding of scalar implicatures by highlighting the significance of pragmatic factors in addition to semantic aspects.
Keywords: Semantic factors, pragmatic factors, language modification, Scalar implicatures

I. INTRODUCTION

1.1 The importance and purpose of Scalar implicatures

Scalar implicatures(SIs) are a fascinating phenomenon in language, emerging from the interplay of semantics and pragmatics (Grice, 1975; Horn, 1972). Imagine uttering "Some of the guests left early." While this sentence literally means at least one guest left early, it typically conveys the implicature that not all the guests left early (Horn & Ward, 2006). This additional meaning, inferred rather than encoded directly, is the essence of a scalar implicature. Motivation for studying SIs arises from their ubiquity and intriguing properties. They permeate language, appearing with gradable adjectives ("a tall building" implies not the tallest), comparative constructions ("He's more intelligent than I am" implies not infinitely more), and quantifiers ("Most people like pizza" implies not everyone). Beyond mere frequency, SIs offer a window into the intricate balance between what a speaker says and what a listener infers, shedding light on how we achieve efficient and nuanced communication.

The interpretation of SIs involves a complex interplay of factors. Semantically, the presence of a scalar term on a specific point on a scale (e.g., "tall" on the height scale)

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triggers the potential for an implicature towards the stronger end of the scale (e.g., not the tallest) (Fox, 2007). This entailment relation between the literal meaning and the implicature forms the basis for the inference. However, semantics alone cannot fully account for SI interpretation. The Cooperative Principle (Grice, 1975), comes into play, guiding speakers to be informative and listeners to seek the speaker's intention. If uttering "Some left early" conveys the same information as "All left early," it would violate the maxim of quantity, suggesting the literal meaning implicates something stronger. Thus, SIs arise to enrich the meaning and make the utterance maximally informative (Horn & Ward, 2006). Furthermore, context plays a crucial role in SI interpretation. Consider "Most people finished the race," uttered just after a marathon with many exhausted runners. Here, the implicature might shift towards "Almost everyone finished," emphasizing the difficulty of the race. This demonstrates how contextual features like shared knowledge and speaker intention can modulate the strength and relevance of the implicature (Levinson, 2000).

1.2 The Locus of Scalar Implicatures: Semantics vs. Pragmatics

SIs have long captivated linguists, sparking ongoing debate about their origin: are they rooted in the semantics of linguistic expressions or do they emerge from the pragmatic principles governing communication? This seemingly semantic question delves into the very nature of meaning and how we interpret speaker intent beyond literal words. Proponents of a semantic locus for SIs argue that the potential for implicature is encoded within the meaning of scalar terms themselves. Horn (1972) proposes that gradable descriptors like "tall" have built-in scales (e.g., short - medium - tall) with an entailment relation between weaker and stronger points. Saying "Some guests left early" semantically entails "Not all guests left early," laying the groundwork for the implicature. This approach appeals to its simplicity and explanatory power, accounting for SI generation without recourse to external information. Conversely, pragmaticists champion the role of contextual factors and conversational principles in SI interpretation. Grice's (1975) “Cooperative Principle, with its maxims of quantity and relevance”, posits that speakers strive to be informative and listeners seek the speaker's intention. If "Some guests left early" conveyed the same information as "All left early," uttering the weaker statement would violate the quantity maxim. Therefore, the implicature arises to resolve this conflict and make the utterance maximally informative (Horn & Ward, 2008). This perspective highlights the dynamic nature of SI interpretation, emphasizing how context and speaker intention shape the inferred meaning.

Recognizing the limitations of both sides, some advocate for a combined approach. While acknowledging the semantic entailment relations established by scalar terms, they emphasize the crucial part of pragmatics in determining the relevance and strength of the implicature. For instance, uttering "Most people finished the race" after a grueling marathon might implicate "Almost everyone finished," demonstrating how context can modulate the implicature generated by the semantic content (Levinson, 2000). The debate continues to evolve, with recent research exploring the interplay of semantics and pragmatics in even greater detail. Relevance Theory (Sperber & Wilson, 1986) offers a cognitive framework where SIs arise from listeners seeking informativeness and mutual

enrichment of the meaning. Studies incorporating corpus analysis and psycholinguistic experiments are illuminating the factors influencing SI processing and comprehension across different languages and contexts (Noveck & Sperber, 2007).

1.3 Research Goals

The following are the major goals of the present study.

Delving beyond entailment relations: While Horn's (1972) proposal of scalar scales and entailment relations (e.g., "tall" implicates not the tallest) provides a crucial foundation, research can delve deeper into the nature of these relations. How do the properties of different scales (density, granularity) influence SI strength and interpretation? Do lexical items beyond gradable adjectives trigger implicatures, and if so, through what mechanisms? Exploring these nuances can refine our understanding of how semantics sets the stage for SI generation.

Beyond Gricean maxims: While Grice's (1975) “Cooperative Principle and maxims” are helpful tools for explaining certain SIs, they may not provide a comprehensive framework. How do additional pragmatic principles, like relevance (Sperber & Wilson, 1986), politeness (Leech, 2007), and speaker intention (Clark, 1996), interact with semantics to shape SI interpretation? Examining how these different principles collaborate and sometimes compete can offer a more nuanced picture of pragmatic influences.

Context as a dynamic landscape: Contextual factors like shared knowledge, social setting, and conversational history play a crucial role in shaping SI interpretation. Investigating how cultural differences, implicit assumptions, and non-linguistic cues (e.g., tone, gesture) influence the perceived strength and relevance of implicatures can provide valuable insights into the dynamic nature of SI processing.

Individual differences and cognitive processing: Not all listeners interpret SIs identically. How do individual differences in cognitive abilities, processing strategies, and cultural background influence SI comprehension? Utilizing psycholinguistic methods and corpus analysis can shed light on these variations and the cognitive mechanisms underpinning SI interpretation.

The interplay of multiple SIs: Sentences often contain multiple SI triggers. How do these interact with each other, potentially causing strengthening, weakening, or even cancellation of implicatures (Degen & Tanenhaus, 2015)? Exploring these complex interactions can reveal the intricate patterns at play in interpreting multifaceted utterances.

SIs beyond single utterances: SIs can persist and accumulate across discourse, influencing interpretation of subsequent utterances. How do these carry-over effects work, and how do listeners track and integrate prior implicatures with new information? Exploring this dimension can reveal the dynamic nature of SI interpretation in connected discourse.

Theoretical implications and model development: Research on SIs holds significance for refining existing theoretical frameworks and developing new models of language processing. How can findings on the interplay of semantic and pragmatic aspects inform

as well as challenge current theories of implicature generation and interpretation? Can these findings be incorporated into existing computational models of language understanding to improve their accuracy and flexibility?

Applications beyond the lab: Understanding SIs has practical implications in various fields like education, communication technology, and social interaction. How can insights from SI research inform language teaching and learning? Can findings be utilized to improve the design of natural language processing systems and conversational agents? Exploring these applications can broaden the impact of SI research beyond theoretical curiosity.

1.4 Research Questions

1. How much do pragmatic and semantic factors impact how scalar implicatures are interpreted within this research's setting?
2. In what ways do the assessments and suggestions made by respondents concerning the puppet's remarks throughout the warm-up and critical trials demonstrate the impact of pragmatic and semantic elements on the understanding of scalar implicatures?
3. To what extent do respondents' divergent evaluations of the puppet's claims in pivotal trials point to possible pragmatic inconsistencies in the understanding of scalar implicatures, particularly when claims are logically sound but regarded as pragmatically incorrect in particular circumstances?
4. How do respondents' comments for language modifications or enhancements to the puppet's language reveal recurring themes or patterns in the setting of scalar implicatures, and what perspectives do these guidelines offer into improving the pragmatic and semantic elements in the interpretation of scalar implicatures?

2. LITERATURE REVIEW

2.1 Theoretical Background: Scalar Scales and their Properties

SIs rely on a fascinating linguistic phenomenon: Scalar scales. These pre-existing structures, proposed by Horn (1972), form the backbone for understanding and generating the subtle additional meanings SIs convey. Delving into the properties of these scales reveals their crucial role in the complex balance between semantics and pragmatics in SI interpretation.

Each scalar scale is characterized by an inherent order: Consider the familiar scale for temperature: cold < lukewarm < warm < hot. This ordering establishes degrees of intensity or strength within the domain, allowing expressions like "warm" to implicate not the hottest. This inherent order forms the basis for the entailment relations underlying SIs (Chierchia, 2017).

Density and Granularity: Not all scales are created equal. Some, like temperature, boast dense gradations with numerous intermediate points. Others, like size (large vs. small), are comparatively sparse. This density impacts the precision with which implicatures can be generated. Dense scales allow for finer-grained inferences (e.g., "hot" might implicate not just not the hottest, but also not extremely hot).

Endpoints and Inclusivity: Scales can have clearly defined endpoints (e.g., dead vs. alive) or be open-ended (e.g., tall vs. short). This affects the interpretation of implicatures generated by terms located at the extreme ends. An utterance like "He's dead" on a closed scale implicates he's not merely very sick, while the same statement on an open scale might leave the room for ambiguity (Degen & Tanenhaus, 2015).

Homogeneity and Subscales: Some scales are homogeneous, meaning they consistently measure the same property (e.g., loudness). Others are heterogeneous, containing sub-scales with related but distinct dimensions (e.g., price might have sub-scales of affordability and monetary value). This complexity can influence how implicatures are triggered and interpreted across different aspects of the scale.

Cultural and Linguistic Variation: Scalar scales can exhibit notable variation across languages and cultures. What constitutes "tall" in one culture might be considered "average" in another. Such variations highlight the role of shared knowledge and social context in shaping the interpretation of SIs based on scale properties.

2.2 Gricean maxims and the Cooperative Principle in explicating SIs

We use Grice's maxims of conversational implicature as the foundation for the study of undesired inferences. These maxims can be understood as follows in relation to the referring phrase generating task:

Quality: Qualitatively, a referring statement has to accurately convey the intended referent. If "Some guests left early" conveyed "All guests left early," it would violate this maxim, suggesting the weaker statement implies something stronger to maintain truthfulness. This again aligns with the SI interpretation.

Quantity: A referring phrase should not offer more evidence than is needed to allow the hearer to identify the thing being referred to. Consider "Some guests left early." While literally true, it implicates "Not all guests left early," adhering to the quantity maxim by avoiding superfluity.

Relevance: When referring to traits that do not aid in differentiating the proposed referent from the associates of the distinction list, they should not be mentioned since they lack discriminating power (Dale & Reiter, 1995). For instance, "Most people finished the race, even though it was difficult" might implicate "Almost everyone finished," making the statement relevant by highlighting the unexpected feat.

2.3 Relevance theory and the notion of mutual enrichment

In order to communicate verbally, one must employ a code—a linguistic system that associates sounds with meanings—as well as a highly contextually aware ability to draw pragmatic conclusions. Sperber and Wilson (1986), established an account of how a communicator renders it jointly evident to audience and communicator that she has a specific instructive desire when creating an utterance, developing on perspectives of Paul Grice (1975), regarding the implicit aspect of human interaction. Their method's ability to explain how information is conceptually reflected and dealt with implicitly is based on how it gives outline to the concept of relevance, that they define as a characteristic of

responses to intellectual operations. Statements as well as other apparent stimuli constitute a unique type of input since they are predicated on their own significance.

The situational or intellectual consequences of any input typically have a beneficial impact on its relevance, but the processing effort required to derive those impacts has an adverse function. A newly acquired input can have a minimum of three distinct kinds of effects on a context: (i) the creation of new presumptions as situational implications, or inferences that can be drawn from both the setting and the new information collectively but not from either one without help; (ii) the reinforcement of preexisting hypothesis; and (iii) the contradiction and removal of preexisting suppositions. All other variables having the same importance, the input is more relevant to the person at that moment if there are larger cognitive consequences and less effort needed to obtain them (Romero & Soria 2010).

2.4 *Semantic Factors*

2.4.1 Lexical Semantics and Scalar Entailment Relations

Within the complex interplay of factors influencing scalar implicatures (SIs), lexical semantics and scalar entailment relations lay the crucial semantic foundation.

2.4.1.1 Lexical Semantics

Gradable adjectives: These form the backbone of SIs, possessing inherent meaning that can be ordered on a scale (e.g., tall < taller < tallest). The inherent semantic properties of such adjectives (density, granularity, endpoints) influence the type and strength of implicatures generated (Horn, 1972; Saeed, 2013).

Scalar adverbs: Modifiers like "very" or "somewhat" can also trigger SIs by intensifying or attenuating the adjective's degree (Levinson, 2000). Understanding the semantic contribution of these adverbs is crucial for interpreting the resulting implicatures.

Negation and scalarity: Negation interacts with scalarity in complex ways. "Not tall" doesn't simply implicate "short," but can generate more nuanced inferences depending on the scale and context (Chierchia, 2013).

2.4.1.2 Scalar Entailment Relations

Entailment: Scalar adjectives relate to each other through entailment relations. For example, "tall" entails "not short." These relations provide the initial semantic trigger for SI generation.

Strength of entailment: The strength of the entailment relationship varies across scales. Dense scales with numerous degrees offer weaker entailments ("hot" implicates "not cold," but not necessarily "lukewarm"). Sparse scales have stronger entailments (e.g., "dead" strongly entails "not alive"). This variation impacts the perceived strength and clarity of implicatures (Degen & Tanenhaus, 2015).

Context and exceptions: Entailment relations are not absolute. Contextual factors and pragmatic considerations can override literal entailments and influence the interpretation of implicatures. For example, knowing the speaker's perspective on height might weaken the implicate of "short" from "not tall," (Degen & Tanenhaus, 2015).

2.4.2 Grammatical factors affecting SI generation (modals, negation, quantifiers)

2.4.2.1 Modals

Strong vs. weak modals: Modals like "must" or "have to" typically convey strong necessity, leading to weaker SIs (e.g., "He must be tall" implicates "not slightly tall," but not necessarily "very tall"). Conversely, weaker modals like "should" or "could" allow for stronger implicatures (e.g., "He should be happy" might implicate "not miserable") (Fox, 2007).

Epistemic vs. deontic modals: Epistemic modals like "might" or "may" express degrees of possibility, potentially triggering SIs on a scale of likelihood (e.g., "He might be coming soon" could implicate "not very soon"). Deontic modals like "must" or "should" express obligation or permission, influencing SIs related to desirable states (e.g., "You should eat more vegetables" might implicate "not enough vegetables") (Chierchia, 2013).

2.4.2.2 Negation

Scalar negation: Negation interacts with scalar adjectives in complex ways. "He's not tall" doesn't simply implicate "short," but may trigger various implicatures depending on the scale and context. Dense scales offer more nuanced interpretations (e.g., "not hot" could implicate "lukewarm" or "cool"). Sparse scales often have stronger implicatures (e.g., "not alive" strongly implicates "dead") (Degen, 2015).

Negation with intensifiers: Negation combined with intensifiers like "not even" or "hardly" can strengthen SIs. For example, "He hardly ate anything" might implicate "not a little," but closer to "nothing at all." Understanding the semantic contribution of such constructions is crucial for interpreting the resulting implicatures (Levinson, 2000).

2.4.2.3 Quantifiers

Universal vs. existential quantifiers: Universal quantifiers like "all" or "every" typically weaken SIs due to their strong entailments. For example, "All guests left early" implicates "not some guests left early," but doesn't offer further information about how many guests left. Existential quantifiers like "some" or "a few" allow for stronger implicatures as they leave room for further degrees. "Some guests left early" implicates "not all guests left early," and potentially even "only a few guests left early" (Horn & Ward, 2006).

Comparative quantifiers: Comparatives like "more" or "less" inherently involve scales, making them fertile ground for SIs. For example, "She worked more than John" implicates "John worked less than she did," potentially with further implicatures depending on the scale and context (Clark, 1996).

2.4.3 Lexical and grammatical ambiguity affecting SI interpretation

Beyond the clear-cut cases of scalar adjectives and grammatical structures, the fascinating world of SIs also encounters the complexities of lexical and grammatical ambiguity. These ambiguities can create fascinating challenges and opportunities for SI interpretation, adding additional layers of meaning and nuance.

2.4.3.1 Lexical Ambiguity

Homophones: Words with identical pronunciation but different meanings, like "bear" (animal/carry), can pose challenges when interpreting SIs triggered by one meaning but potentially applying to the other. For example, "The bear is huge" might implicate "not small," but the literal meaning "carrying something large" also remains in play, requiring additional context for disambiguation (Grice, 1975).

Polysemy: Words with multiple related meanings, like "light" (illumination/weight), can create ambiguity in SI interpretation depending on the intended meaning. For instance, "He brought light to the situation" could implicate "not darkness," but also "not heavy burden," making SI interpretation dependent on contextual clues (Levinson, 2000).

Metaphor and figurative language: Metaphorical uses of scalar adjectives can lead to non-literal SIs. Saying "Her eyes are fire" implicates "not ice," but the metaphorical meaning creates a new scale of intensity unrelated to temperature (Clark, 1996).

2.4.3.2 Grammatical Ambiguity

Scope ambiguity: Sentences with ambiguous grammatical structure can lead to competing SI interpretations. For example, "He didn't eat all the cake" could implicate "he ate some" (focus on negation) or "he left some cake uneaten" (focus on quantifier). Recognizing the intended scope becomes crucial for resolving the SI (Horn & Ward, 2006).

Elliptical constructions: Incomplete sentences or phrases might leave implicit elements that influence SI interpretation. "Better late than never" implicates "it's good that you came, even though it's late," where the omitted premise contributes to the SI (Chierchia, 2017).

2.5. Pragmatic Factors

2.5.1 Contextual relevance and informativeness preferences

While semantics lays the foundation for SIs, pragmatic factors guide their interpretation and application in real-world communication. Contextual relevance and informativeness preferences play a crucial role in shaping how listeners draw implicatures from scalar utterances.

2.5.1.1 Contextual Relevance

Mutual knowledge and assumptions: Shared knowledge between speaker and listener impacts what information is considered contextually relevant. An utterance like "Most people finished the race" might implicate "not everyone finished" in a general context, but "everyone but John finished" in a shared reference to a friend's participation (Levinson, 2000).

Focus and salience: Prominent features of the context draw attention and influence SI interpretation. Saying "He's the tallest student in class" implicates "not short," but the specific context where height is relevant (e.g., basketball tryouts) might strengthen the implicature to "extremely tall" (Clark, 1996).

Social setting and politeness: The social setting and desired level of politeness can influence whether a speaker chooses to convey information directly or via scalar implicature. In a formal setting, one might say "I disagree" instead of the potentially impolite implicature "I don't completely agree" (Leech, 2014).

2.5.1.2 Informativeness Preferences

Least effort principle: Speakers and listeners generally prefer communication that conveys the intended meaning efficiently. SIs offer a way to achieve this, conveying additional information beyond the literal meaning without overburdening the listener (Grice, 1975).

Maxim of quantity: This Gricean principle suggests speakers should say neither too much nor too little. SIs adhere to this by conveying both the literal meaning and an implicature in a concise way, avoiding redundancy while maximizing informativeness (Horn & Ward, 2006).

Mutual enrichment and cognitive effects: Relevance Theory (Sperber & Wilson, 1986) emphasizes the goal of mutual enrichment in communication. SIs contribute to this by offering informative cognitive effects that update the listener's mental model efficiently, maximizing mutual understanding without unnecessary elaboration.

2.5.2 Speaker intention and listener inferences

Beyond contextual factors, the dynamic interplay between speaker intention and listener inferences lies at the heart of SI interpretation. Understanding how speakers communicate their intended meaning through implicatures and how listeners draw these inferences based on the utterance and broader context is crucial to comprehending this fascinating language phenomenon.

2.5.2.1 Speaker Intention

Indirectness and implicit meaning: Speakers often choose to convey messages indirectly through SIs instead of literal statements. This can be due to politeness reasons, to avoid sounding presumptuous, or to create a more nuanced and suggestive meaning (Leech, 2014). For example, "It's not that bad" might implicate "it's actually good" if the speaker wants to be supportive without overstating their own enthusiasm.

Strategic ambiguity and implicature strength: Speakers can strategically construct sentences with different degrees of ambiguity to control the strength of the implicature. A vague utterance like "The movie was okay" leaves more room for inference than a specific one like "The movie was a bit disappointing," making the implicate "I didn't really enjoy it" less clear in the first case (Clark, 1996).

Irony and non-literal intention: Sometimes, speakers intentionally violate or exploit scalar expectations to create irony or humor. Saying "That was the clearest explanation ever!" with a sarcastic tone implicates the opposite, indicating the explanation was confusing (Levinson, 2000).

2.5.2.2 Listener Inferences

Theory of mind and common ground: Drawing inferences from SIs relies on the listener's capability to comprehend the presenter's goal as well as shared knowledge (Sperber & Wilson, 1986). Knowing the speaker's personality, relationship, and past experiences helps the listener interpret the intended meaning and strength of the implicature.

Processing effort and cognitive efficiency: Listeners tend to prefer interpretations that are easier to process and integrate into their existing mental model. SIs that require minimal inferential effort are more likely to be accepted than those requiring complex reasoning or challenging existing assumptions (Grice, 1975).

Violation and pragmatic repair: When an implicature conflicts with expectations or the perceived context, listeners engage in "pragmatic repair." This involves revising their initial interpretation, considering alternative readings, or seeking additional information to resolve the apparent contradiction (Horn & Ward, 2006).

2.5.3 Social knowledge and shared ground

2.5.3.1 Cultural Scripts and Expectations

Social roles and stereotypes: Different social roles carry specific expectations associated with scalar terms. For example, a doctor saying "He's not in much pain" might implicate "he's in significant pain" due to the doctor's professional obligation to minimize subjective descriptions (Leech, 2014).

Cultural conventions and norms: Cultural scripts and conventions influence how scalar terms are understood within specific contexts. In cultures prioritizing politeness, indirectness through SIs (e.g., "It wasn't bad" implying "it was good") might be more common than direct statements (Levinson, 2000).

Shared historical events and references: Common experiences and historical references can create specific scales within particular communities. Saying "That was the longest day ever" during a shared event might have a stronger implicature than in a general context, due to the mutual understanding of the event's duration (Clark, 1996).

2.5.3.2 Group Membership and In-group Language

Jargon and specialized terminology: Groups with shared expertise or interests often develop specialized vocabulary with unique scalar scales. In academic settings, "interesting" might imply "groundbreaking" within a specific field, whereas in everyday conversation it might suggest "moderately enjoyable" (Horn & Ward, 2006).

Humor and shared insider jokes: Jokes and puns often rely on shared social knowledge and understanding of scalar implications. A comedian saying "He's not the sharpest tool in the shed" might rely on listeners' awareness of the literal scale of tool sharpness to appreciate the intended implicature about the person's intelligence (Grice, 1975).

Group dynamics and power relations: Power dynamics within social groups can influence how SIs are interpreted. A subordinate saying "I don't completely disagree" to a superior might implicate strong disagreement due to the social pressure to avoid direct confrontation (Leech, 2014).

2.5.3.3 Relevance and Mutual Enrichment in Shared Contexts

Mutual knowledge reduces processing effort: Shared ground minimizes the need for complex inferences through SIs. Listeners with access to the same background information can readily interpret implicatures that might be ambiguous to outsiders, increasing the efficiency and clarity of communication (Sperber & Wilson, 1986).

Strengthening implicatures and social bonding: Shared social knowledge can strengthen the implicatures generated by scalar terms. In close-knit communities, an utterance like "We're always here for each other" might implicate unwavering support due to the strong social bonds and mutual reliance within the group (Wedgwood, 2007).

Negotiating meaning and collaborative understanding: Understanding social context and shared ground allows for a more flexible and collaborative approach to SI interpretation. When implicatures appear unclear or conflicting, speakers and listeners can negotiate meaning by drawing on their shared knowledge and adjusting their interpretations to ensure mutual understanding (Clark, 1996).

2.5.4 The role of politeness and indirectness

The intricate balance of politeness and indirectness lies at the heart of many scalar implicatures (SIs). By strategically opting for indirectness instead of blunt statements, speakers navigate social situations with tact and consideration for the listener's feelings, while still conveying their intended meaning through the subtle power of implicatures.

2.5.4.1 Maintaining Social Harmony and Avoiding Face Threat

The Gricean Maxim of Quality: Speakers adhere to the principle of truthfulness, but not always literally. SIs offer a way to convey potentially face-threatening messages (criticism, disagreement) indirectly, minimizing the direct impact on the listener's self-esteem or social standing (Grice, 1975). For example, "That wasn't the worst performance I've seen" implicates disappointment without explicitly stating negativity.

Politeness strategies and cultural expectations: Different cultures have distinct politeness strategies, influencing how SIs are used. In collectivistic cultures, preserving group harmony takes precedence, leading to frequent indirectness through SIs to avoid confrontational communication (Leech, 2014).

Social distance and power dynamics: The level of politeness adopted often scales with the social distance between speaker and listener. A junior colleague saying "I might have a slightly different perspective" to their senior suggests disagreement more delicately than a blunt "I disagree". (Levinson, 2000).

2.5.4.2 Enhancing Expressiveness and Strategic Ambiguity

Implicatures allow for nuanced meanings: Beyond simply avoiding face-threatening messages, SIs provide a richer palette for expressing subtle shades of meaning. Saying "The food was okay" subtly suggests disappointment compared to a literal "I enjoyed the food," creating a more nuanced and potentially strategic ambiguity.

Humor and irony through implicature violation: Speakers can intentionally exploit scalar expectations for humorous effect. Sarcastically saying "This is just what I wanted"

implicates the opposite, using the SI to create playful irony at the listener's expense (Clark, 1996).

Maintaining ambiguity for strategic reasons: Sometimes, speakers deliberately leave room for uncertainty through SIs. Uttering "We'll see about that" instead of a definitive answer keeps the listener guessing, allowing the speaker to retain flexibility or control the conversation flow.

2.5.4.3 Challenges and Potential Misunderstandings

Interpreting implicatures correctly requires effort: Recognizing and interpreting SIs correctly requires the listener to engage in additional inferential steps beyond the literal meaning, potentially leading to misunderstandings if context or shared knowledge is lacking.

Indirectness can lead to vagueness or manipulation: Excessive reliance on SIs can make communication overly vague, hindering clarity and potentially enabling manipulative tactics when the intended meaning is deliberately obscured.

Cultural differences can cause misinterpretations: Cross-cultural communication can become particularly challenging when interpreting SIs, as cultural expectations regarding politeness and indirectness vary widely, leading to potential misunderstandings or social awkwardness.

3.METHOD

3.1 Participants

Five fifteen-year-old Telugu-speaking students in grade 10 took part in the study. The Rainbow English Medium School in Khajipet, YSR Kadapa district, Andhra Pradesh province, India, is where students were recruited.

3.2 Materials

The researcher provided a collection of fifteen short stories that can be performed with toys and props. In each story, the characters are faced with a decision between two options that pertain to either quantity or degree (e.g. various amounts of food being consumed by the animals). Additionally, produced seven critical statements with Scalar terms: “some, all” that are accurate but, in the circumstances, not suitable from a pragmatic standpoint. To stop participants from providing answers at random, the researcher prepared five filler sentences, two of which are obviously true and three of which are obviously false. To acquaint the participants with the undertaking and prohibit the students who perform ineffectively in them, created two warm-up stories, one obviously evident and one plainly misleading. Materials for showcasing the stories with props and toys were collected. The researcher recorded the narratives with a computerized camcorder, guaranteeing each recording is roughly 20 minutes in complete length. A projector was employed to show the participants the recorded stories which were transferred them to a laptop.

3.3 Procedures

Five grade 10 pupils were enlisted to take part in the research project by means of school postings. Everyone who participated in the study gave their informed permission once the researcher explained them of the purpose of the investigation and guaranteed their privacy. Also gave participants a quick Pre-Test Questionnaire to gather demographic data and to make sure the respondents had never heard of the particular stories employed in the study before. Then, in order to reduce interruptions, did the study in a peaceful space. There was a projector and a laptop ready to show the visual stimuli. An overview of the study's objectives was provided to the participants, highlighting its exploration of language interpretation in a variety of contexts. This time, in order to acquaint respondents with the assignment, the researcher showed the two warm-up trail narratives. The fifteen experimental narratives were displayed with a puppet narrating each one and a critical (under informative) comment using scalar terminology that followed. Judges, the participants, were given the task to determine whether the puppet's description was accurate. Five filler expressions were included between each experimental trial to keep respondents from responding at random. During the Post-Test Questionnaire procedure, once the activity was finished, the participants were asked to comment on the remarks made by the puppet, stating whether or not they thought they were acceptable. It was also requested that students who involved in the study, contribute any changes they believed might be made to the puppet's language. Respondents received a debriefing by the researcher, who also addressed any queries or worries they might have had and explained the goal of the study. Incentives were presented to the students to thank them for having taken an active role in the research. Lastly, a study of respondent feedback was conducted to evaluate pragmatic and semantic factors in the interpretation of SIs.

4. RESULTS AND ANALYSIS

4.1 Results

Table1: Warm-up Trials

Participants	Warm up Stories	
	The Flower Garden (Clearly True)	The Moonwalkers (Clearly False)
One	A	NA
Two	A	NA
Three	A	NA
Four	A	NA
Five	A	NA

Note: ‘A’ indicates Appropriate and ‘NA’ indicates Not Appropriate.

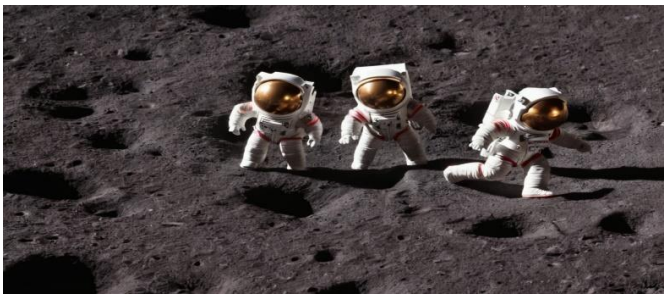
Figure 1

An AI-generated image of the floral garden

Note*:* Image generated using Wepik from the prompt the floral garden.

Figure 2

An AI-generated image of the Moon walkers



Note*:* Image generated using Wepik from the prompt the Moon walkers

Table2: Filler Statements

Participants	Name of the Filler	Fill Type	Fill Type
One	The Rainbow Umbrella	True	
Two	The Sunflower Field	True	
Three	The Flying Penguins	True	
Four	The Talking Trees		False
Five	The Ice Skating Giraffes		False

Table3: Critical Trials

S.No	Stories	P1	P2	P3	P4	P5
1	The Bear Story	A	NA	A	S	NA
2	The Fish Adventure	A	A	S	NA	S
3	Candy Delight	S	A	A	NA	A
4	Block Building	NA	S	S	NA	NA
5	Pizza Party	A	A	A	S	S
6	Carrot Harvest	A	A	A	A	NA
7	Space Odyssey	NA	A	A	NA	S

Note: 'A' refers to Appropriate, 'NA' refers to Not Appropriate, 'S' refers to Suggested Improvement and 'P' refers to Participant.

4.2 Analysis

In the warm-up tests, all respondents correctly judged whether the statements were suitable, demonstrating their understanding of the assigned assignment. The replies indicate that respondents' perceptions as well as assessments of the puppet's comments varied with regard to the critical trials.

Figure 3

An AI-generated image of the bear story

Note*:* Image generated using Wepik from the prompt the bear story

In "The Bear Story," for instance, P1 and P3 indicated that the statement was suitable, whereas P2 and P5 indicated that it was not. P4 recommended a change.

Figure 4

An AI-generated image of the vibrant fish

Note*:* Image generated using Wepik from the prompt the vibrant fish

Regarding "The Fish Adventure," P3 and P5 indicated that there could be some misunderstanding or lack of agreement with the puppet's explanation by marking the statement as suggested improvement where as P1 and P2 indicated that the statement was suitable. P4 indicated that it was not.

Figure 5

An AI-generated image of candy party

Note*:* Image generated using wepik from the prompt candy party

P2, P3 and P5 from "Candy Delight" indicated that the statement was appropriate, whereas P1 recommended a change. P4 indicated that it was not.

Figure 6

An AI-generated image of foundation bricks

Note: Image generated using Adobe Firefly from the prompt foundation bricks

In "Block Building" no one indicated that the statement was appropriate but P1, P4 and P5 indicated that the statement was not appropriate and P2 and P3 suggested a change.

Figure 7

An AI-generated image of pizza hour

Note: Image generated using Adobe Firefly from the prompt pizza hour

Regarding "Pizza Party," P4 and P5 recommended a change, whereas P1, P2 and P3 indicated that the statement was suitable.

Figure 8

An AI-generated image of veggie yard

Note: Image generated using Adobe Firefly from the prompt veggie yard

No participants expressed their views on not appropriate statement in the story, "Veggie Yard." P1, P2, P3 and P4 indicated that the statement was suitable, whereas P5 suggested a change.

Figure 9

An AI-generated image of space odyssey

Note: Image generated using Adobe Firefly from the prompt space odyssey

In "Space Odyssey," P2 and P3 indicated that the statement was appropriate, whereas P1 and P4 suggested that the statement was not appropriate. P5 recommended an improvement was needed to the statement. Overall, the findings showed that respondents appeared to handle the crucial trials in diverse ways. While some respondents repeatedly assessed statements as proper, others addressed doubt or suggested changes. The replies from those who responded suggested that there may be a pragmatic contradiction since, depending on the situation, certain statements that were conceptually valid could be viewed as pragmatically incorrect.

5. DISCUSSION

5.1 Research Question 1

The perception of SIs in the current research setting is highly impacted by both pragmatic and semantic factors, according to the analysis of respondent replies. The views and judgments of the puppet remarks varied across the participants, suggesting that the pragmatic appropriateness of the comments was a significant factor in how they were

interpreted. The results additionally indicate cases when semantically correct assertions were judged to be pragmatically unsuitable, indicating a definite influence of pragmatic elements on the interpretation of scalar implicatures.

5.2 Research Question 2

Respondent evaluations and recommendations from the warm-up and critical trials demonstrate the complex interaction between pragmatic and semantic components in the comprehension of scalar implicatures. Although individuals consistently made accurate judgments about warm-up statements, their reactions to critical trials differed. Respondents' decisions were considerably impacted by pragmatic concerns, such as suitability in context, as indicated by the diverse ratings and recommended adjustments. This indicates that scalar implicatures are influenced by the pragmatic acceptability of the statements in certain settings in addition to their semantic substance.

5.3 Research Question 3

In critical trials, respondents' varying assessments of the puppet's assertions clearly imply the presence of pragmatic discrepancies in the comprehension of scalar implicatures. The research shows that a few respondents believed some arguments to be pragmatically inaccurate even if they made sense intellectually. This disparity highlights the importance of pragmatic considerations and shows how respondents thought about contextual suitability in addition to the statements' formal logical reliability. The results suggest a pragmatic interpretation of scalar implicatures is more complex.

5.4 Research Question 4

Recurring themes and patterns in the perception of scalar implicatures are revealed by the remarks made by respondents suggesting linguistic improvements or alterations to the puppet's words. Respondents' efforts to match the language of the puppet with pragmatic concerns are shown in the recommended modifications, which show a desire for utterances that are both contextually suitable and semantically true. These recommendations' recurring themes could draw attention to places where respondents feel there is a need for more pragmatic clarification or consistency with contextual assumptions. These recommendations provide significant insight for improving the language employed to communicate scalar implicatures by offering insights on improving both pragmatic and semantic aspects of the interpretation process.

5.5 Future Prospects

Future research opportunities are made possible by the observed variation in respondent perceptions and the changes that have been proposed. To develop a deeper comprehension of the relationship between pragmatic appropriateness and semantic content, future study might focus on the particular contextual signals that cause pragmatic inconsistencies in scalar implicatures. Analyzing participant demographic data, such as age and language background, may reveal further levels of effect on the perception of scalar implicatures, improving our understanding of the variations across individuals in pragmatic perception. The goal of an in-depth interview is to learn as much as possible about the interviewee's viewpoint and personal perspective on a certain topic

(Showkat & Parveen, 2017). How sample size might be determined using reliability intervals built around intended or expected values (Hertzog, 2008). Hence, using qualitative techniques like think-aloud protocols or in-depth interviews with a larger sample size may provide a more comprehensive understanding of respondents' thinking processes and enable an in-depth examination of the cognitive mechanisms associated with navigating pragmatic and semantic factors throughout scalar implicature comprehension.

6. CONCLUSION

Despite the fact that human language is primarily made up of random, code-like combination of sounds with meanings, verbal communication requires considerably more than just encoding and decoding—inference is a critical component (Papafragou & Musolino, 2003). The widely accepted guidelines in the language and philosophical fields are not definitive in the context of SI, for instance, "some Fs are G implying that not all Fs are G". This is true for both the deductive reasoning of the findings in "relation to the semantics/pragmatics distinction" and the implementation of the guidelines (Katsos, 2017). As a result, this research sheds light on the complex relationships that exist between pragmatic and semantic components when interpreting scalar implicatures. The respondents' differing reactions to crucial trials highlight how pragmatic factors, such contextual appropriateness, have a big influence on how these language occurrences are understood. Warm-up tests showed a shared understanding, but pragmatic variations were shown by varied ratings during critical trials, indicating a complex interpretation determined by contextual circumstances. The comments provided by respondents about language adjustments were consistent in emphasizing the necessity for statements to comply with both pragmatic appropriateness and semantic correctness. The results indicate that scalar implicatures are susceptible to pragmatic inconsistencies, meaning that statements that make sense logically might be seen as pragmatically incorrect. By highlighting the interaction between pragmatic and semantic elements in SI interpretation, this research promotes our understanding of language comprehension and offers insightful information for future linguistic pragmatics research.

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APPENDIX A

Short Narratives

Fifteen brief narratives on "Pragmatic and Semantic Factors in the Interpretation of Scalar Implicatures," with characters having to decide between two options related to quantity or degree in each case. These narratives are meant to be performed with toys and props.

First short story: Bears Who Are Hungry

There are five bears enjoying a picnic. They can choose between two platters, one with all the honey and the other just a small amount. Ultimately, every bear chooses to nibble from the dish containing all of the honey.

Second short story: Vibrant Fish

Fish are swimming together in an aquarium. They can swim in the direction of the blue or red coral. The tale's numerous fish and their vibrant scales are highlighted by the narrator. Every fish chooses to swim in the direction of the blue coral.

Short story 3: The Candy Party

There is a sweets party for six fluffy bears. They can choose to have all of the lollipops or just some of them. Every animal discusses the benefits and drawbacks of every choice. They all decide to eat some lollipops in the end.

Short story 4: Foundation Bricks

Two robotic toys seek to use bricks to construct a skyscraper. They can choose to utilize all of the blocks or only some of them. After debating the advantages and disadvantages, the robots decide to utilize every brick.

Story snippet number five: Pizza Hour

A bunch of play animals are craving pizza. Either all of the pizza or only a portion can be ordered. The narrator describes the delight of hosting a pizza hour and how delicious the pizza is. Ultimately, every animal chooses to place an order for every pizza.

Story snippet 6: Veggie Yard

There's a garden with three plush toys fashioned like vegetables. They can choose to consume all of the carrots or just some of them. The carrots' freshness is emphasized by the narrator. At some point, every toy decides to consume every carrot.

Story snippet 7: The Space Odyssey

Toy astronauts are traveling across space. They have the option of discovering a portion of the galaxy's planets or every world. The exhilaration of space exploration is heightened by the narration. Ultimately, every astronaut resolves to investigate every planet.

Story snippet 8: Ice Cream Pleasure

At an ice cream shop, stuffed animals have the option of having any or all of the varieties of ice cream. The narrator draws attention to the array of delectable tastes. All of the animals ultimately decide to attempt every flavor of ice cream.

Story snippet 9: Prehistoric Park

A park is home to toy dinosaurs. They have the option to play on all or just some of the slides. The narrator highlights how much pleasure it is to play with slides. Ultimately, every dinosaur decides to use every slide for play.

Story snippet 10: Balloon Festival

There is a balloon festival with plush animals. They may choose to have all of the balloons or just part of them. The balloons' vivid hues are mentioned by the narrator. In the end, every animal chooses to own every balloon.

Short Narrative 11: The Science Test

Five toy scientists are working on a project. They are able to employ all of the compounds or just part of them. The necessity of precision in the project is discussed by the narrator. Ultimately, each investigator chooses to employ every molecule.

Story snippet number twelve: The Harvest Season

Farm animals in toy form are gathering crops. They have the option of gathering every berry in the grove or only a portion of them. The storyteller emphasizes how many berries there are. At some point, every farm animal decides to gather every berry.

Short story 13: Toy Vehicle Racing

It's a race between five toy vehicles. They can choose to race on a subset of the accessible roads or all of them. The narrator describes the roads' turns and speed. Ultimately, every toy vehicle chooses to compete on every road.

Short story 14: Submerged Expedition

Toy sea creatures are venturing underwater on a quest. They have the option of exploring all of the ocean's caverns or just a few of them. The undersea caverns' secret is explained by the narrator. All of the aquatic life ultimately decides to investigate every cave.

Short story 15: Operation of the Superman

Superman action figures are on a quest. They have the ability to rescue some or all of the distressed individuals. The operation's remarkable quality is emphasized by the narrator. Ultimately, every superman resolves to rescue everyone.

APPENDIX B

Critical Trial Statements

Seven Critical Trial statements on "Pragmatic and Semantic Factors in the Interpretation of Scalar Implicatures" have scalar phrases that are correct but pragmatically incorrect.

1. The Bear Story

Context: The teddy bears all made the choice to consume everything on the platter that was covered in honey.

Argument in opposition: "Some bears ate honey."

2. The Vibrant Fish

Context: Every fish made the decision to go in the direction of the blue coral.

Interpretation for Criticism: "Some fish went to the red coral."

3. The Candy Party

Context: Every fluffy animal consented to partake in a few lollipops.

Argument in opposition: "Some animals ate all the lollipops."

4. Foundation Bricks

Context: Every toy robot constructed a skyscraper out of all the bricks.

Critical Statement: "Some robots used bricks to build a tower."

5. Pizza Hour

Setting: Every toy animal made the decision to place an order for every pizza.

Interpretation for Criticism: "Some animals shared some pizza."

6. Veggie Yard

Context: Every plush toy fashioned like a vegetable devoured every carrot in the garden.

Argument in opposition: "Some toys enjoyed some carrots."

7. The Space Odyssey

Context: Every astronaut toy decided to visit every planet.

Argument in opposition: "Some astronauts discovered some planets."

APPENDIX C

Filler Statements

The research on "Pragmatic and Semantic Factors in the Interpretation of Scalar Implicatures" contains five filler phrases, two of which are obviously correct and three of which are obviously incorrect. The purpose of these filler sentences is to make sure that participants are thinking critically about the meaning behind each statement by offering a combination of true and untrue scenarios. The purpose of the obviously improbable

false fillers is to encourage people to interact with the information rather than depend just on guesswork.

1. **The first true filler: Colorful Parasol**

"Some children carried a Colorful Parasol in the rain."

2. **The second true filler: The Daisy Field**

"All the bees buzzed around the daisies in the field."

3. **The first false filler: The Penguins in flight**

"Some penguins soared through the sky with colorful wings."

4. **The second false filler: The Talking Trees,**

"All the trees in the forest chatted with each other."

5. **The third false filler: The Giraffes on Ice**

"Some giraffes gracefully glided on the frozen lake."

APPENDIX D

Warm-up Trials

To acquaint respondents with the assignment in the research on "Pragmatic and Semantic Factors in the Interpretation of Scalar Implicatures," two warm-up trial narratives were presented, one of which was obviously true and the other plainly incorrect. These warm-up anecdotes provide scenarios with obvious conclusions in an effort to aid respondents in understanding the assignment. While the second warm-up narrative depicts a situation in which the puppet's remark is obviously untrue, the first warm-up story offers a setting in which the puppet's statement is definitely truthful. With this method, respondents are encouraged to engage thoroughly with the material and consider the explanations provided by the puppet critically.

Warm up Story 1: Unquestionably True: The Floral Garden

Context: A lovely floral garden is home to a collection of play animals.

Storyline: "Take a look at this gorgeous floral garden! This place has a wide variety of flowers. While some animals are appreciating the tulips, others are sniffing the lilies. The vivid hues and delightful fragrances of the flowers delight all of the animals. Let's now examine the final outcome."

Critical Remark from the Puppet: "Some animals are enjoying the flowers."

Warm up Story 2: Obviously Incorrect: The Moon walkers

Context: On the surface of the moon a bunch of toy scientists.

Storyline: "The toy astronauts are exploring the moon right now. They have the option of walking on all or just part of the moon's craters. The astronauts are prepared for this extraordinary expedition. Let's now examine the final outcome."

Critical Remark from the Puppet: "Some astronauts walked on all the craters."

APPENDIX E

Pre-Test Questionnaire

The purpose of this survey is to ascertain respondents' acquaintance with the particular stories utilized in the study as well as to collect demographic data.

Information about Participants

1. ID of the participant (for study purposes): [Leave unfilled to be filled up by researcher]

2. Age (Please tick appropriate option)

- 14
- 15
- 16
- 17

3. Gender: (Please tick appropriate option)

- Male
- Female

4. Educational Status: (Please tick appropriate option)

- Basic
- Elementary
- Lower Secondary
- Upper Secondary
- Other (please specify): _____

5. Story Knowledge: Have you ever taken part in a comparable language interpretation study? (Please tick appropriate option)

- Yes
- No

6. Do you know the particular narratives or situations that were employed in this research? (Please tick appropriate option)

- Yes
- No

Please elaborate on your knowledge if you selected "Yes" for question 6 (e.g., if you've encountered of or taken part in a research employing comparable stories).

[Reaction from the participant: _____]

Overview:

7. Language competency: (Please tick appropriate option)

English native speaker

English proficient

Limited English competency

8. Have you ever taken part in an investigation using language or studied the field of linguistics? (Please tick your choice)

- Yes
- No

If you selected "Yes" in response to question 8, do elaborate on what you have experienced.

[Reaction from the participant: _____]

Further Remarks:

9. Do you have any more remarks or worries regarding taking part in this research?

[Reaction from the participant: _____]

APPENDIX F

Post-Test Questionnaire

Participants can rate the suitability of each puppet's remark on the survey, and they can also make helpful criticism regarding where the puppet's language should be improved.

Information about Participants

1. ID of the participant (for study purposes): [Leave unfilled to be filled up by researcher]

2. Age (Please tick appropriate option)

- 14
- 15
- 16
- 17

3. Gender: (Please tick appropriate option)

- Male
- Female

4. Educational Status: (Please tick appropriate option)

- Basic
- Elementary
- Lower Secondary
- Upper Secondary
- Other (please specify): _____

Assessment of the Puppets' assertions:

5. Please check if you think each puppet's remark is suitable.

- The first statement: "_____"

  Either appropriate or inappropriate

- The second statement is "_____"

  - Not appropriate - Appropriate -

Statement 3: "_____"

  Either appropriate or inappropriate

[Continue for each of the study's statements]

Recommendations for Modification:

6. If you felt that any of the puppets' statements were improper, please elaborate on how you would change them. Furthermore, do offer any general recommendations you may have for improving the puppet's language below.

[Reaction from the respondent: _____]