

Scalar Implicature in Urdu and English: A Scoping Review of Cross-Linguistic Evidence

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Abstract

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Scalar implicature is a central concept in pragmatics that explains how speakers communicate meanings beyond the literal interpretations of their utterances. Despite scalar implicature having been examined in detail in English and some other major languages, comparatively little is known about the concept in Urdu and some other South Asian languages. This study presents a scoping review of existing literature on scalar implicature showing the importance of cross-linguistic evidence in relation to Urdu and English. To reach this aim, a systematic review of the literature was conducted through an exhaustive search of online academic databases, such as Google Scholar, Scopus, ERIC, and Web of Science, adhere to find theoretical and empirical studies published in English from 1975 to 2025 and to assess and analyze these data against pre-established inclusion criteria. The analysis indicated that research conducted so far has provided significant theoretical and experimental justification for scalar implicature in English, while the existing studies related to Urdu are scarce. Still, rather than evidencing the areas of cross-linguistic differences regarding the processes of scalar implicature in communication, this review has identified a considerable gap in the available evidence concerning the functioning of scalar implicature in Urdu-speaking multilingual environments. Consequently, the study proves that it is important to conduct additional research with regard to the ways scalar implicature is applied in multilingual contexts involving speakers of Urdu and English.

Keywords: scalar implicature, pragmatics, scoping review, bilingual pragmatics, Urdu-English bilingualism, cross-linguistic pragmatics.



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1. INTRODUCTION

Scalar implicature is a conversational inference that arises when listeners derive meanings beyond what a speaker explicitly states. For instance, when a speaker says, "Some students completed the assignment," a listener may infer that not all students completed it. Such interpretations arise through pragmatic reasoning rather than from the lexical meanings of the words alone and therefore reflect the interaction among language, context, and communicative intention. The phenomenon has attracted substantial attention in contemporary pragmatics because it provides valuable insight into how speakers communicate implicit meanings in everyday interaction. Scalar implicature has become one of the most extensively studied phenomena in pragmatics because it demonstrates how listeners derive meaning beyond literal semantic content. (Grice, 1975; Levinson, 2000).

Theoretically, the concept of scalar implicature is understood in terms of Grice's (1975) Cooperative Principle which suggests that effective communication is the goal of interlocutors who are normally cooperating. Based on this structure, neo-Gricean theory suggests that scalar implicature is frequently a default inference during the conversation, while Relevance Theory focuses on the role of contextual information and cognitive processing in the interpretation process (Horn, 1989; Sperber & Wilson, 1995). All of these theoretical frameworks have a different account of what is pragmatic but agree that pragmatic meaning is realized in the interplay between linguistic expressions, context, and communicative purposes.

In the last few decades, there has been substantial research on scalar implicature, especially in English and other languages that are popularly studied. The effects of contextual information, cognitive resources, language skills, and developmental factors on the extraction of pragmatic inferences have been studied experimentally (Noveck, 2001; Bott & Noveck, 2004; Huang & Snedeker, 2009). The literature reviewed has expanded these studies to bilingual speakers, second-language learners, showing that pragmatic interpretation is not solely dependent on grammatical knowledge, but also on language experience, exposure, and communicative context.

However, with regard to Urdu, few studies have examined scalar implicature. Some scalar expressions in Urdu, like kuch (some), sab (all), aksar (often), hamesha (always), and shayad (perhaps), can trigger pragmatic inferences in context. Unlike English, however, little empirical evidence exists regarding the use of these expressions in natural communication among Urdu speakers and regarding Urdu-English bilinguals' processing of scalar implicature in different languages. Therefore, it is difficult to conclude from theoretical models, mostly derived from English data, whether they are suitable to explain pragmatic reasoning in multilingual situations like Pakistan.

Accordingly, this scoping review aims to synthesize current theoretical and empirical research on scalar implicature and to critically examine developments in experimental pragmatics, bilingual language processing, and cross-linguistic research. The analysis is conducted with particular reference to Urdu to distinguish established empirical knowledge from areas requiring further investigation. By mapping the current state of knowledge and identifying research gaps, the review seeks to support future research on pragmatic inference in multilingual contexts.

1.1. Statement of the Problem

English pragmatics has been thoroughly studied around scalar implicature, theoretically, experimentally, and psycholinguistically. Previous research has included investigations of how pragmatic inference works, of the effect of contextual information, and of cognitive processes in interpreting scalar terms like some, many, and all. So far, theories of scalar implicature have been

mostly developed and tested based on evidence from English and a few other widely studied languages (Grice, 1975; Levinson, 2000; Huang, 2014).

However, little empirical research has focused on scalar implicature in Urdu or Urdu-English bilingual speakers. In Urdu, there are scalar expressions that may lead to similar pragmatic inferences, but so far there is hardly any evidence about how these expressions receive when they are used in natural communication, the role played by contextual and cultural factors in Urdu, or whether the theoretical models developed largely from English data are sufficient to account for the pragmatic reasoning in multilingual contexts, like Pakistan. This is because the lack of evidence restricts the cross-linguistic validity of the theories used, and it is difficult to determine how far current theories and explanations of scalar implicature can be extended beyond the English-speaking population.

Considering this disparity between the volume of research on certain aspects and the lack of it on others, A need exists for an overall synthesis of the work conducted before any meaningful cross-linguistic comparisons can be drawn. For this reason, this study uses a scoping review methodology to systematically map the published research on scalar implicature, to identify where evidence exists, to highlight gaps in the research which can be explained with Urdu and bilingual pragmatics and to suggest the priorities for further empirical investigation.

1.2. Research Questions

- What is the existing theoretical and empirical evidence of scalar implicature in English and Urdu at the present time?
- To what extent has scalar implicature been investigated in Urdu and Urdu-English bilingual contexts?
- What gaps in the existing literature can be identified through a scoping review of scalar implicature research?

1.3. Research Objectives

- To map the theoretical and empirical literature dealing with scalar implicature in Urdu and English.
- To analyze the level and characteristics of scalar implicature studies in Urdu and Urdu-English bilingual settings.
- To develop a future research agenda on bilingual pragmatics and scalar implicature based on the gaps in the existing research.

The review below summarizes the key theoretical and empirical advances in the field of scalar implicature research and outlines the major themes that have influenced the field of pragmatic inference in recent years.

2. LITERATURE REVIEW

2.1 Scalar Implicature in Pragmatics

Scalar implicature is one of the most widely studied phenomena in pragmatics because it illustrates how speakers can communicate meanings beyond the literal content of their utterances. Listeners often infer meanings that are not explicitly expressed. For example, when someone says, "Some students completed their assignment," the interlocutor will usually infer that not all students completed it. This interpretation derives from pragmatic reasoning and the assumption of communicative cooperation rather than from semantic meaning alone (Grice, 1975; Levinson, 1983).

Research on scalar implicature has expanded considerably over the past 50 years. Early scholarship primarily examined how inferences arise in conversation, whereas more recent work has focused on cognitive processing, contextual factors, development, bilingual processing, and

cross-linguistic variation. Scalar implicature is therefore an interdisciplinary area involving pragmatics, semantics, psycholinguistics, and cognitive science.

2.2 Classical Pragmatic Accounts of Scalar Implicature

All classical theories of scalar implicature assume that the speaker communicates more than the literal meaning of what he says but disagree on how the extra meanings come about. The groundwork was laid by Grice's (1975) Cooperative Principle, which assumes that conversational participants cooperate in a general sense, with the expectation of communication. Scalar implicatures are seen as inferences listeners make about what the speaker has chosen to say, and what he or she has deliberately left unsaid.

Inspired by the Gricean model, neo-Gricean theories claim that scalar implicatures are frequently automatically produced as general conversational inferences that are not meant to be suppressed by situational factors (Horn, 1989; Levinson, 2000). Relevance Theory, on the other hand, assumes that pragmatic interpretation relies on the issue of the relevance of the information in the context and cognitive load, arguing that scalar implicatures are only inferred when they are relevant to the most relevant interpretation of an utterance (Sperber & Wilson, 1995).

These theories are not mutually exclusive options but each one of them shows that scalar implicature is a result of the interaction between linguistic meaning, communicative intention and interpretation in the context. Research from these frameworks is now becoming more widely used in contemporary research rather than as mutually exclusive alternatives.

2.3 Alternative-based and Grammatical Approaches to scalar implicature

In addition to classical pragmatic theories, the literature surveyed has suggested alternative-based and grammatical theories as explanations for the generation of scalar implicatures. These strategies hold that pragmatic enrichment is not only accomplished by conversational reasoning, but can also be accomplished by grammatical strategies that derive more alternative meanings while interpreting sentences (Chierchia, Fox, & Spector, 2012).

In the alternative-based model, listeners gauge an utterance relative to a list of more powerful alternatives to the sentence. For example, if someone says "some students passed the examination", then the listener immediately thinks of the stronger alternative "all students passed the examination". The listener assumes that the speaker used the weaker word (some) instead of the stronger word (all), which means that the listener thinks that the stronger word is not likely to be true. This process can be called **exhaustification**, and allows the hearer to make a pragmatic inference that not every student passed. This account proposes that scalar implicatures are generated by means of a structured comparison among alternative expressions, rather than relying solely on conversationally established maxims, present in the language system (Fox, 2007; Chierchia et al., 2012).

The failure of pragmatic theories to account for some of the phenomena of scalar implicature is therefore overcome by grammatical theories, which suggest that at least some of the computation of a scalar implicature is performed in the grammar itself. These approaches see implicatures not as complete post-semantic conversational inferences but as an enhancement of the meaning of the sentence by means of additional grammatical operators before the end of the interpretive process. While there is some disagreement about the degree of interaction between the grammar and pragmatics, the grammatical approaches have offered important accounts of the systematic patterns of scalar implicatures in various scalar expressions and experimental contexts. New research has emerged in recent years which considers that pragmatic and grammatical explanations alone do not explain scalar implicatures fully. Rather, a number of scholars contend that pragmatic interpretation is due to the interplay of semantic representations, grammatical

mechanisms, contextual information, and cognitive processing. Recent research has moved from the question of which theory is correct to an integrative view of how a combination of linguistic and cognitive factors are all involved in pragmatic inference in different communication contexts.

2.4 Experimental Pragmatic and Processing Debates

Theoretical models describe how scalar implicatures may be derived, whereas experimental pragmatics examines how they are processed during real-time language comprehension. Over the past two decades, researchers have used truth-value judgement tasks, eye-tracking, reaction-time measures, and behavioural experiments to investigate the automaticity of scalar implicatures and the role of contextual reasoning. These methods have transformed scalar implicature from a largely theoretical issue into an empirically investigated phenomenon.

One of the main issues is whether scalar implicatures are assumed or only given when information is provided in the context. Typically, neo-Gricean theories make the prediction that scalar implicatures form spontaneously unless there is a disconfirming factor in the context, while Relevance Theory approaches predict that pragmatic inferences only form if they are maximizing contextual relevance. Experimental results, however, have yielded mixed results. Research by Noveck (2001), Bott & Noveck (2004), Breheny, Katsos & Williams (2006), and Huang & Snedeker (2009) showed that it takes extra time and effort to extract scalar implicatures, especially when not much contextual information is provided. The results question the notion that pragmatic inferences are always inferred.

The studies aggregated in this review also showed that there are several factors that affect the processing of scalar implicature, such as working memory capacity, lexical access, language proficiency, communicative experience, task design, and contextual richness. Contrary to the view that pragmatic inference is a single universal mechanism, current evidence indicates that pragmatic inference is dynamic and is affected by both linguistic and cognitive factors. Consequently, today, experimental pragmatics considers scalar implicature as resulting from several interacting processes rather than a set procedure to be followed.

Experimental investigation has also contributed to the methodological diversity of scalar implicature studies. Besides laboratory experiments, there are more recent studies, which use corpus analyses, developmental research, bilingual processing experiments, and computational modelling to examine the differences in pragmatic inferences given the speaker, context, and language. These methods collectively contribute to a deeper understanding of scalar implicature, and show that pragmatic meaning is not just an intra-linguistic phenomenon, but the product of interplay between linguistic knowledge, cognition, and communicative context.

2.5 Variability across Scalar Expressions

The studies reviewed indicate that scalar implicature is not uniform across scalar expressions. Although several early theoretical approaches assumed that pragmatic inference operated similarly across lexical scales, experimental studies show that the likelihood of deriving an implicature varies according to the expression, communicative context, and cognitive demands placed on the listener. Scalar implicature is therefore now understood as a complex and variable inferential phenomenon.

Among scalar expressions, the some-all scale has received the greatest scholarly attention because it is highly productive in experimental research on pragmatic enrichment. Other scales, including possible-certain, often-always, many-all, and good-excellent, vary considerably in implicature frequency and strength. Some inferences are readily derived across contexts, whereas others require stronger contextual support for listeners to reach the intended interpretation (Van Tiel et al., 2016; Doran et al., 2009).

This variability has theoretical significance, as it suggests that there is no single mechanism for all scalar implicatures. Rather, the most recent research indicates that the combination of lexical semantics, contextual richness, world knowledge, communicative expectations, and processing effort all play a role in the production of an implicature. Consequently, some scholars suggest viewing scalar implicature as a group of related pragmatic phenomena instead of a single inferential process that is applied in a consistent way to all scalar expressions.

The existence of variability in scalar expressions is also of great importance for bilingual and cross-linguistic research. The pragmatic inferences may not always be comparable across linguistic communities because the lexical scales vary in each language in terms of their semantic organization, frequency of use, and cultural conventions. Therefore, the results of this study on English speakers should not be extrapolated to other languages without an empirical study. This problem is especially significant in the multilingual environment of Pakistan, in which bilingual (Urdu-English) speakers often switch languages, where the pragmatic usage of the two languages may vary. Knowing about the variation of scalar expressions thus gives impetus to further cross-linguistic studies on pragmatic inference.

With the increased awareness of the diversity of theories, experiments and differences in the way the same expressions are used across populations of speakers of languages other than English, it has been a source of motivation for researchers to explore beyond the English-speaking realm. Hence, cross-linguistic studies have become increasingly important to test the extent to which the theories now available account for pragmatic inference across languages of different linguistic structure and communicative convention. The evidence is, however, somewhat unevenly distributed among languages and English has received most empirical research. The next section summarizes the available cross-linguistic evidence and discusses the degree of similarity between related works done on Urdu.

2.6 Cross-Linguistic Evidence on Scalar Implicature

Scalar implicature has been the subject of research in a number of typologically different languages beyond English. The cross-linguistic research focused on French, Dutch, German, Spanish, Mandarin Chinese, Japanese, Greek, Hebrew, and some Romance and Germanic languages has investigated the ways pragmatic inferences are made. Taken together, these studies show that scalar implicature seems to be a common pragmatic pattern, but that its interpretation is shaped by factors in lexical systems, conventions, processing demands, and culture. For this reason, it seems that there is some evidence that the scalar implicature phenomenon is both universal and language-specific.

Experimental studies also suggest that the rate at which speakers of various languages make scalar implicatures may vary, or that they may make them under different communicative circumstances. There have been some differences in the way the scalar expressions were interpreted, in the effect of context information, and in the effort needed to make pragmatic inferences. The findings indicate that the differences across languages generally are not sharp, but rather gradual, and that the analyses should be done in a larger linguistic and cultural context, not in the context of language-specific pragmatic systems (Van Tiel et al., 2016; Gotzner et al., 2018). Recent bilingual pragmatics research has also shown that the processing of scalar implicatures is language dependent. Research with second-language learners suggests that pragmatic inference does not only occur as a result of grammatical competence but also as a result of communicative experience and exposure. Over time, the interpretation of scalar expressions tends to become more similar to L2 native speakers' interpretations as they acquire more competence in L2, though some differences can remain between L2 and native speakers depending on the L2 language context.

All these studies, put together, give a large body of evidence for the investigation of scalar implicature in several linguistic communities. The geographical and linguistic distribution of this research is, however, uneven, with the majority of empirical research on English and other European languages. This imbalance emphasizes the need to continue pragmatic study in the underrepresented multilingual context.

2.7 Evidence from Urdu and Related South Asian Languages

In the Urdu context, empirical study of scalar implicature is still in its infancy as compared to other European languages and English. When it comes to Urdu speakers or Urdu-English bilinguals, few studies directly address the interpretation of scalar implicature. Currently, there is no empirical evidence available to conclude that the order or patterns of processing scalar implicatures in Urdu are like those reported for English or whether the language-specific pragmatic conventions have an impact on the processing of scalar implicatures.

There are a few studies in linguistically and geographically similar languages such as Hindi, Persian, and Arabic that shed light from a regional perspective on pragmatic inference and conversational meaning. The investigations indicate that multiple factors such as contextual reasoning and cooperative communication are important in pragmatic interpretation in multilingual societies. However, results of these languages cannot be regarded as empirical evidence for Urdu, since each language has its own vocabulary, grammar, and sociocultural norms or conventions, and discourse practices. Thus, while knowledge about structures in similar languages is valuable, it must be complemented by research into actual structures of English scalar implicature in Urdu.

This does not mean that there is no empirical evidence and hence that scalar implicature works differently in Urdu. Instead, it is a large gap in the literature. As is, there are few conclusions that can be drawn about scalar implicature in Urdu as this is usually extracted from more general pragmatic models based on English language data rather than being backed up by experimental or corpus-based studies of Urdu speakers. This distinction is crucial for keeping the methodology transparent and for being able to show the current state of knowledge.

The findings of this scoping review suggest that the main contribution of the available literature is not the demonstration of specific cross-linguistic differences between Urdu and English, but the identification of a substantial lack of empirical research on Urdu pragmatics. Future experimental, corpus-based, and bilingual-processing studies should therefore examine scalar implicature in South Asian multilingual contexts.

Table 1

Summary of the studies Included in the Scoping Review

Study	Language	Scalar expression(s)	Participants	Research Method	Context	Main Findings
Grice (1975)	English	Some-all	Theoretical	Conceptual analyses	Not applicable	Introduced the Cooperative Principle and conversational implicature that form the basis for pragmatic inference.
Horn (1989)	English	Lexical scales	Theoretical	Theoretical analyses	Not applicable	Introduced the neo-Gricean approach and argued that scalar implicatures represent generalized conversational inferences.
Sperber & Wilson (1995)	English	General pragmatic expressions	Theoretical	Cognitive-pragmatic analyses	Context-dependent	Developed Relevance Theory, which places emphasis on the notions of contextual relevance and cognitive processing.

Study	Language	Scalar expression(s)	Participants	Research Method	Context	Main Findings
Noveck (2001)	English	Some-all	children and adults	Truth-value judgement task	Minimal context	Children accept under informative statements easier than adults where there is developmental aspect of pragmatic reasoning.
Bott & Noveck (2004)	English	Some-all	Adult native speakers	Timed judgement experiment	Limited contextual support	Scalar implicatures imply eating up more processing time which means that the inference process is demanding in cognitive terms.
Breheny, Katsos, & Williams (2006)	English	Some-all	Adult native speakers	Eye-tracking and reaction-time experiments	Context manipulated	Provided evidence for the notion that context plays its role in the process of implicature derivation.
Huang & Snedeker (2009)	English	Quantifiers	Adult speakers	Visual-world eye-tracking	context manipulation in terms of reference	Demonstrated how contextual information affects pragmatic interpretation in the process of language comprehension.
Van Tiel et al. (2016)	Dutch	Multiple scalar expressions	Adult native speakers	Acceptability judgement task	Different lexical scales	Demonstrated that different scales lead to different implicatures without equal measure.

Table 1 shows some of the key trends in the literature available. First, theoretical research has mostly been concerned with how scalar implicature works, the Gricean, the neo-Gricean, the relevance-theoretic, and more recent approaches via the grammar. Second, empirical research has mainly employed experimental techniques such as the truth-value judgement task, reaction-time experiments and eye-tracking to examine the influence of contextual information on pragmatic inference. Thirdly, while there are numerous studies available in English or other European languages, similar empirical studies in Urdu are rare. This imbalance in evidence suggests that systematic research on scalar implicature in multilingual South Asian settings is warranted and provides justification for the present scoping review.

2.8 Research Gap

While there has been much theoretical work in pragmatics and experimental work in linguistics to investigate scalar implicature, there is not yet a consistent and comprehensive collection of studies in this area that is available across languages. Most of the empirical work has been conducted with English speaking samples and fewer studies have been done in other language groups. Moreover, over the last few years there has been a growing number of studies on cognitive processing, contextual reasoning, and bilingual pragmatic competence, but the latter seldom considered Urdu or Urdu-English bilingual speakers.

This is an important methodological gap that is also identified in the present review. The existing cross-linguistic studies often use experimental methods like truth-value judgment tasks, eye-tracking, reaction-time experiments, and corpus analyses to examine the phenomenon of pragmatic inference. Similar empirical approaches have not been used with Urdu and hence little is known about the interpretation of scalar implicatures in multilingual Pakistan. Therefore, it is not clear if the current theories, mostly based on English, can be meaningfully extended to Urdu. Another crucial gap relates to the lack of systematic evidence synthesis. Past studies have primarily addressed individual theoretical frameworks or individual experimental results, and few studies have provided a comprehensive map of the literature available, separating direct Urdu evidence

from evidence derived from other languages and English-speaking populations. This distinction is necessary to properly assess the state of knowledge and to make sure that cross-linguistic generalizations are not made without support.

Considering these gaps, the present scoping review aims to systematically map the theoretical and empirical research related to scalar implicature, map the areas for which there is strong evidence, highlight the lack of empirical research on scalar implicatures in Urdu, and suggest priorities for the future research in the realm of bilingual and cross-linguistic studies.

3. METHODOLOGY

3.1 Research Design

This study adopted a scoping-review design to examine the existing literature on scalar implicature, with particular emphasis on English and Urdu contexts. A scoping review was appropriate because the study sought to map the current state of theoretical and empirical evidence, identify major themes, and reveal gaps in the evidence base. This design is particularly useful in fields characterized by diverse, interdisciplinary, or limited evidence. The general principles of the PRISMA Extension for Scoping Reviews (PRISMA-ScR) (Tricco et al., 2018) guided the review, which focuses on transparency in the identification, selection, and synthesis of the relevant literature.

3.2 Search Strategy

A systematic literature search was carried out in major academic databases commonly used in the fields of linguistics and education. The main databases used were Google Scholar, Scopus, Web of Science, and ERIC, all of which offer comprehensive coverage of peer-reviewed articles related to language, pragmatics, applied linguistics and language education. Combinations of keywords and Boolean operators were used for the search to find relevant studies. The following terms were the main ones searched:

- scalar implicature
- scalar implicature AND pragmatics
- scalar implicature AND English
- scalar implicature AND Urdu
- scalar implicature AND bilingual pragmatics
- scalar implicature AND experimental pragmatics
- scalar implicature AND cross-linguistic

Reference lists of influential publications were also examined to identify additional relevant studies that did not come from the initial database searches.

3.3 Eligibility Criteria

To keep the review focused and academically sound, predetermined inclusion/exclusion criteria were used in the literature selection process.

3.3.1 Inclusion Criteria

The review included studies that:

- appeared in peer-reviewed journals or in reputable academic books and edited volumes;
- designed around scalar implicature, conversational implicature, experimental pragmatics, bilingual pragmatics, or cross-linguistic pragmatics;
- were written in English;
- presented any form of theoretical, empirical, or review-based evidence pertaining to the scalar implicature.

3.3.2 Exclusion Criteria

The following sources were not included:

- conference abstracts;
- letters from the editor;
- websites; and
- non-peer-reviewed websites;
- works on topics that are not related to scalar implicature or pragmatic inference;
- duplicate publications.

3.4 Study Selection

A staged screening process was used to select the records retrieved, so that only studies with the predetermined eligibility criteria were included in the review. First, the titles and abstracts were reviewed to assess the relevance to the goals of the review. Any publications that seemed relevant were then considered in detail to determine their eligibility based on the eligibility criteria set out earlier. Special focus was placed on the studies on theoretical explanation of scalar implicature, experimental pragmatics, bilingual language processing, and cross-linguistic evidence.

When studies focused on languages other than Urdu, they were included only if they can help in making broader generalizations about scalar implicature or if they can help with comparative insights into multilingual situations. To refrain from unsupported generalizations, evidence from related languages was clearly separated from evidence directly concerning Urdu.

3.5 Data Extraction and Analysis

Information was systematically extracted from the selected studies to facilitate comparison. The extracted data included publication details, the language investigated, theoretical framework, participant characteristics where applicable, research methodology, scalar expressions examined, contextual variables, and main findings. No quantitative statistical techniques were used to analyse the included studies. Instead, a thematic-synthesis approach was employed. The literature was organized according to the following themes:

- Classical Theories of scalar implicature
- Alternative-based and grammatical approaches.
- Pragmatic and Processing Debates.
- Cross-linguistic research and bilingual research.
- Evidence relating to Urdu and research gaps.

This thematic organization allowed similarities and differences to be detected between studies and gaps in empirical evidence to be identified.

3.6 Scope and Limitations

The review aimed to provide a broad overview of the available scholarship rather than an exhaustive systematic review of every publication on scalar implicature. Although substantial research was available on English and several other languages, relatively little empirical research on Urdu was identified. Findings from studies conducted outside the Urdu context are therefore discussed for comparative purposes rather than treated as direct evidence about Urdu. This distinction enhances the transparency of the review and highlights important directions for further research on scalar implicature in multilingual South Asian contexts.

4. DISCUSSION

4.1 Developments in Scalar Implicature Theory

This review of the literature showed that scalar implicature continues to be one of the main areas of research interest in modern pragmatics, as it is a typical case of the speaker's transmission of information beyond their explicit semantic content. After the Cooperative Principle was introduced by Grice (1975), various theories have been proposed to explain how listeners'

pragmatic inferences are made from scalar expressions like some, many, and all. These theories make different types of assumptions about the processes involved in pragmatic interpretation, but they all stress the need for the communication to involve more than just lexical semantics, involving language meaning, contextual information, and speaker intention.

The review also confirms that there has been an evolution in the theory of scalar implicatures over time. According to neo-Gricean approaches, default pragmatic reasoning is the source of pragmatic interpretation, while Relevance Theory suggests that it is context-relevancy and cognitive efficiency that determine pragmatic interpretation. The reviewed literature expands these perspectives, suggesting that alternative-based and grammatical accounts have been proposed that suggest that scalar implicatures are determined by a structured comparison of the lexical alternatives, and in some cases by grammatical mechanisms during sentence interpretation. These developments build on, and do not supplant older theories, but rather indicate the progression of pragmatic research in a direction that provides more complete explanations, accounting for semantic, cognitive, and contextual factors.

It seems that the reviewed literature provides no justification for rejecting the view that today's theories should be regarded as isolated narratives. Rather, they offer complementary views that account for various facets of pragmatic inference. It is a theoretical convergence that mirrors the general evolution of pragmatics as an interdisciplinary enterprise that draws from the insights of linguistics, psychology, cognitive science, and experimental studies to provide a theoretical account of how meaning is produced in the process of communication.

4.2 Evidence from Experimental Pragmatics

It is shown from the studies discussed that experimental pragmatics has made a very important contribution to the understanding of scalar implicature, and thus to the study of pragmatic inferences in real-time language comprehension. In contrast to the earlier theoretical studies that mostly used conceptual arguments, experimental studies have tested the cognitive mechanisms involved in pragmatic interpretation with the help of the following experimental methods: truth-value judgement tasks, reaction-time experiments, eye-tracking, and visual-world paradigms. These methodological advances have led scalar implicature studies from theory speculation to evidence-based study.

Among the most regular results obtained in the examined studies is the fact that scalar implicature is contextually and cognitively contingent and therefore does not occur in the same way in any communicative context. It has been demonstrated that the listener's context, working memory, lexical accessibility, task requirements, and processing time all affect the listener's ability to make pragmatic inferences. As such, the evidence does not fully support a default account or a completely context-dependent account. Rather, recent studies have shown that scalar implicature is a product of cognitive processing, contextual information, and linguistic knowledge.

Experimental pragmatics has also made important contribution to the understanding of scalar implicature varying across different scalar expressions. The analyzed literature suggests that the expressions some–all, possible–certain and often–always do not consistently result in a similar degree of pragmatic enrichment. This variability underscores the significance of lexical semantics and the communicative context in the process of pragmatic interpretation, and goes against previous theories which suggested that all scalar expressions are handled in the same inferential way.

The studies reviewed collectively suggest that contemporary research increasingly has an integrative approach in which pragmatic inference is seen as a dynamic cognitive process with multiple interacting variables. Experimental evidence shows that the expression of scalar

implicature results from the interplay of semantic knowledge, contextual reasoning, grammatical structure, and cognitive resources, and does not just represent a single explanatory approach. This change is one of the most important in the contemporary pragmatic research and is more solidly grounded on empirical evidence for future research on pragmatic inference in various linguistic communities.

4.3 Cross-linguistic and bilingual perspectives.

The literature reviewed also reveals that scalar implicature is an area of study that is gaining significance in the domain of cross-linguistic and bilingual pragmatics. The empirical data have been obtained mainly from English-speaking subjects, but empirical studies in Dutch, French, Mandarin Chinese, Japanese, Hebrew, and other languages indicate that scalar implicature is a general pragmatic phenomenon. Concurrently, the studies demonstrate that language-specific lexical systems, discourse conventions and cultural expectations affect the interpretation of a scalar expression. Therefore, pragmatic inference seems to be both universal communicative and language-specific.

The findings of this study have significant implications in the context of multilingual societies, like Pakistan in which English is used along with Urdu and other regional languages in education and professional fields. The existing bilingual pragmatics research indicates that, though there is limited empirical evidence of Urdu, multilingual language users may have different interpretations of implied meanings, depending on their language proficiency, communicative context, and previous linguistic experiences. This observation underscores the need to expand experimental studies to Urdu-English bilingual populations, to answer the question of whether the theoretical models developed in other contexts can be applied to the multilingual South Asian context without any modifications.

The reviewed literature suggests that the bilingual context should not be seen as two languages alone but as a cognitive and communicative dynamic, which impacts on pragmatic interpretation. Therefore, the increased empirical research in the field of multilingual contexts would not only help explain scalar implicature but also serve in more general discussions on bilingual cognition and intercultural communication as well as second-language pragmatics.

4.4 Evidence from Urdu and Future Research Directions

Based on the evidence found in this review, it is evident that there is a clear imbalance of literature on scalar implicature. Although, there are a significant number of studies focusing on pragmatic inference in English and some other languages, there is not much empirical research investigating scalar implicature in Urdu language. The literature examined above shows that modern theories of scalar implicature have been formulated and tested within the framework of English speakers or other European language speakers. Thus, the application of these theoretical models in Urdu context is still under-explored.

An important finding of this review is not that Urdu speakers interpret scalar implicatures differently, but rather that there is insufficient empirical evidence to determine whether similarities or differences exist between Urdu and English speakers. This distinction is essential because conclusions about Urdu should be based on empirical evidence rather than assumptions derived from related languages. The studies in other non-English languages like Hindi, Persian or Arabic give some comparative insights into pragmatic inference but can't be used as the alternative to Urdu as there are differences in linguistic structure, lexical systems and socio-cultural conventions. The review also calls for a more diversified methodology in the future. The studies on scalar implicature which have been conducted to date have used controlled experimental designs such as: truth-value judgement, reaction-time, and eye-tracking studies. Studies of this type have been

few in Urdu speaking people. Future studies can then be conducted on scalar implicature with Urdu monolinguals and Urdu-English bilinguals using experimental, corpus and mixed-methods. The results of such research would help fill the gap in evidence of the effects of bilingualism, language proficiency, education, and communicative situation on pragmatic inference.

Additionally, the application of the knowledge gained from the empirical study of multilingual situations like Pakistan would also be useful for the wider theoretical discourse within the field of pragmatics. The Urdu evidence can help to challenge the cross-linguistic relevance of the models proposed, and can lead to the evaluation of alternative accounts of the phenomenon of scalar implicature, and the contribution to the existing knowledge about the way the pragmatic meaning is developed in a linguistically and culturally diverse community. Therefore, Urdu is not only a regional concern but also a significant addition to international pragmatics and bilingual language studies in terms of empirical studies.

4.5 Implications for Linguistic Theory and English Language Teaching

The results of this review have implications for theory and for the teaching of English. On a theoretical level, the literature examined showed that the theory of scalar implicature cannot be fully accounted for by a single theory. Rather, modern research agrees with an integrative approach that combines semantic knowledge, context, grammatical processes, and cognitive processing in the determination of pragmatic interpretation. This view invites researchers to break away from the traditional dichotomy of theory, and to consider more interdisciplinary methods, which consider the complexity of human communication.

The review also emphasizes the role of pragmatic competence in L2 learning. In many multilingual settings, such as Pakistan, instruction in English still focuses on grammatical correctness and vocabulary acquisition and comparatively less on conversational inference and implied meaning. But to communicate successfully, learners must not only be able to hear and comprehend literal meanings but also to interpret what the communicator intends to convey in terms of the context. The use of authentic communicative tasks, discourse analyses, role-play activities and language learning with a pragmatics emphasis in the English language classrooms could thus improve learners' communicative competence.

For the last, some priorities for future research in language are highlighted. More focus needs to be given to the study of bilingual pragmatics, cross-linguistic comparison, corpus-based studies, and experimental studies with underrepresented languages like Urdu. Such studies would not only fill current research gaps, but also help to build more sophisticated theories of pragmatic inference, which are in line with the multilingual nature of societies.

The literature examined shows that well, scalar implicature has matured into a multi-disciplinary field of research, ranging from the theoretical study of pragmatics, to experimental approaches in language studies, bilingual language studies, and cross-linguistic studies. While there have been significant advances in pragmatic inference, there are still significant gaps, especially in pragmatic inference of languages that are not widely spoken like Urdu. The observations form the basis of the concluding remarks presented in the next section.

5. LIMITATIONS OF THE REVIEW

As with all scoping reviews, the current study has some limitations that need to be acknowledged. First, the review was based mainly on literature in English, potentially overlooking literature in other languages. This method has made it possible to produce consistent data synthesis, but also could have restricted the number of studies that took place in linguistically diverse settings.

Second, the review brought together, across different studies, theory and empirical evidence based on studies using a variety of research designs, participants, and methods. Owing to this methodological diversity, it was neither feasible nor appropriate to conduct a quantitative meta-analysis. Rather, the results were analyzed thematically to highlight key trends, theories, and areas for future research.

Thirdly, the review revealed that there was little empirical research examining scalar implicature in Urdu. Thus, discussions on Urdu could only be based on the few available works and were strictly separated from those that came out of English and other languages. This restriction is indicative of the need for further empirical studies, and not a fault of the review itself. Finally, while major academic databases were searched for relevant studies, a selection of articles may not have been found due to indexing differences, the scope of the various databases, and/or publication language. However, the research reviewed in this paper gives a full picture of the key theoretical and empirical advances in the field of scalar implicature research.

6. CONCLUSION

This scoping review aimed to synthesizing theoretical views, experimental results, bilingual pragmatics, and cross-linguistic perspectives of scalar implicature with special emphasis on limited literature on Urdu. The review shows that the notion of scalar implicature has been transformed from a seminal idea formulated as part of Grice's Cooperative Principle into a potentially multi-disciplinary field of study that has engaged cognitive, grammatical, experimental, and cross-linguistic perspectives. Recent studies have offered greater insight into pragmatic inference by highlighting the interplay of semantic knowledge, contextual information, cognitive processing, and communicative experiences.

The review also suggests that empirical research has significantly broadened research on scalar implicature in English and in a handful of other languages and that new insights have been gained using experimental techniques such as truth-value judgement tasks, reaction-time experiments, eye-tracking and bilingual processing studies. But there is still very little research work in Urdu which is comparable to this. There are therefore limited possibilities to evaluate current theoretical models from an in-depth perspective in Urdu speaking contexts, which is an important gap in the existing literature.

One of the major findings of this review is the clear demarcation between the evidence which specifically refers to Urdu and the evidence which comes from other language communities. In contrast to the findings from English or other languages, it is realized that more empirical evidence is needed to conclude anything about Urdu. This method allows to reinforce the methodological transparency and establish future research priorities.

Future studies could be conducted using experimental, corpus based and mixed methods approaches to investigate the scalar implicature of Urdu monolinguals and Urdu-English bilinguals. Such studies would advance not only the knowledge of pragmatic competence in multilingual settings, but also the evolution of the existing frameworks of contemporary theories of scalar implicature based on evidence from lesser-researched linguistic communities. The more we understand scalar implicature in various language communities, the better we can make intercultural, educational, and professional communication more inclusive and develop a deeper understanding of the theory of pragmatic principles. This review offers a starting point to further explore pragmatic inference in global and underrepresented languages, especially in terms of current evidence and methodological limitations, also identifying future research avenues.

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