

# The Interdisciplinary Nature of Linguistics

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## Abstract

The debate about whether linguistics is a science or arts has lasted for quite long time. We argue that the interdisciplinary nature of linguistics is an appropriate answer based on the exploration of the study scopes of major branches in linguistics, such as computational linguistics, psycholinguistics, second language acquisition, social linguistics etc. Besides, the analysis of research methods used by major linguists also proof our argument. In the end, we conclude that the interdisciplinary nature of linguistics is more suitable.

## Keywords

The Nature of Linguistics, Science, Arts, Interdiscipline, Branches of Linguistics, Research Methods

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## 1. Introduction

In the history of linguistics, there has always been a debate about the nature of linguistics as a science or an arts discipline, such as in [Koster \(2006\)](#) and [Sealey & Carter \(2004\)](#). This debate is still inconclusive due to the intricate and inclusive research domains from phonetics to phonology, morphology to semantics, syntax to pragmatics, social linguistics to computational linguistics. The cause is mainly due to the overlapping fields linguistic questions involved ([Linguistic Society of America](#)). However, it is crucial to shed light on this issue since the essence of a discipline determines the research domain, define the boundaries, influence the choice of methodology and differentiate it from other subjects. Therefore, this paper explores the core attributes of linguistics to clarify the doubts about its classification from the traditional dichotomy of science and arts. To effectively resolve this dispute, we can find answers in exploring the research topics and methods for major branches of linguistic studies. It is quite possible to reach a conclusion that linguistics is a combination of science and arts subject, with obvious interdisciplinary characteristics.

## 2. The Scientific Features of Linguistic Branches

Linguistics displays scientific features mainly in the following research fields, such as, computational linguistics, psycholinguistics and syntax (to name a few as examples). In these fields, the researchers follow the scientific paradigm of putting forward hypotheses, collecting data to justify or falsify the hypotheses and then reaching the conclusions. This is undeniably the typical procedures of solving an inquiry in most of the science subjects. The scientific essence of linguistics can also find its' evidence in the 19<sup>th</sup> century when linguist August Schleicher (Andersen & Bache, 1976) associated language with living organism and applied the evolutionary theory to the explanation of language development. Although this theory was latter challenged by Wallace (Wallace, 1870), who doubted the critical functions language might play in the survival of human species, the tradition of using scientific methods to solve language issues remained in the linguistics domain. Thus, it explains linguists' anxious desire to build strong relationship between linguistics and science.

The first example that the author might use to designate the scientific attributes of linguistics is from computational linguistics. The author checked Web of Science for the ranking of SSCI (Social Science Citation Index) source journals of 2021. It was discovered that two computational journals, Transactions of the Association for Computational Linguistics and Computational Linguistics were on the top of the ranking with exceptional high impact factors of 9.194 and 7.778, outperformed most of the other journals in the category of linguistics. As is indicated by the website of Association for Computational Linguistics (<https://acl-org.github.io/>), computational linguistics is the “scientific study of language from a computational perspective”. In this field, computational models are generated in order to process natural languages in terms of the speech recognition, text-to-speech synthesis, and automated voice response (<https://aclweb.org/portal/>). Obviously, the research focuses of computational linguistics are closely related to computer programming, which is generally regarded as a science subject.

Other examples are from the psycholinguistic branch. The author browsed the recent articles published in Journal of Psycholinguistic Research, a Q2 (the second quartile) journal of SSCI in the category of linguistics of 2021. Research methods of articles published in the journal are very close to medical science, such as, functional near-infrared spectroscopy (a non-invasive tool for detecting of human brain activations) (Zhao et al., 2021), eye-tracking (Barattieri et al., 2022; Zeng et al., 2021), Event-relevant Product (ERP) (Saloranta et al., 2022; Zhang et al., 2019), lattice algorithm (Zhu & Clark, 2022), and questionnaires (Zhang et al., 2022; Kim & Kim, 2020) with advanced statistical methods. Apparently, it is quite prevalent for psycholinguists to use advanced technological research methods to probe the truth of language related with psychological development.

An unquestionable fact about the scientific nature of linguistics distinctly ex-

ists in transformational generative grammar. As is noted by Chomsky (1995), he was dedicated to find an approach which studied language as natural world components, which could be used to answer the empirical questions. Thus, his endeavor to apply the universal grammar (UG) to different language variations is more closely related to mathematics, which is generally regarded as a science subject for most of the times. Although the UG is still developing and is far from perfect, it is no worse off than chemistry and physics, which are also inadequate and need to be promoted so as to be infinitely close to the fact.

In the language educational branch, such as first and second language acquisition and language teaching fields, inferential statistical methods and quasi-experiments have gained great popularity ever since last century (e.g., Aljaafreh & Lantolf, 1994; Gardner, 1985). Nowadays, the experiments are getting much more sophistication in the design. The statistical methods used by these experiments are more advanced to make accurate interpretations (e. g., Costache et al., 2022; Kormos & Csizér, 2014; Liu, 2021). Other advanced methods are also adopted in discovering the intricate development of language learning process for either normal or abnormal children (e.g., Zhou et al., 2019; Zhou et al., 2020). However, in second language acquisition area, ethnographic studies (e.g., Gong et al., 2020; Morita, 2004) about students' perception of identity and motivation of learning a second language have also gained much recognition and reputation among language researchers. And these qualitative studies clearly share the sociological and ethnographical approach and display the dynamics and complexity of foreign language learning motivation. Therefore, it might be more appropriate to conclude that both scientific and humanistic approaches are highly acceptable in this domain of linguistic study. This again supports the argument of interdisciplinary nature of linguistics.

### 3. The Humanistic Characteristics of Linguistic Branches

At the same time, we can't deny that in many branches of linguistics, such as sociolinguistics, semantics and pragmatics, philosophical reflections and case studies are still the dominating research approaches. Take the "social semiotics" journal as an example. This is a Q2 SSCI journal in linguistics category. A quick glimpse of the papers published in this journal revealed that a lot of researchers are still relying reflections and logical reasonings as their major paradigms (Snajdr & Trinch, 2022; Boogers et al., 2022). Because language as the major tool of human communication is umbilically associated with culture, politics and social interactions. The examination of linguistics concerning with these humanistic fields can be very heterogenous and fuzzy. The subtle investigation can extend our explanation of human perception and feelings. The complexity and vigorousness of these subjects make it difficult to condense the complicated data into simple modelling. And to simplify the intricate human world into concise equation can be misleading and distorting. Thus, generalization of real linguistic behaviors might eradicate the abundance and flexibility of real-life complexity.

However, while examining the ideas of influential linguists in history, such as Saussure (1916/1959), language is mainly treated as a psychological form not a substance. Since the research subject of linguist is language, which is not concrete according to Saussure (1916/1959), it would be quite hard to draw a conclusion that linguist is science rather than arts. It is clear that historically renowned linguists and language philosophers still disagree on the nature of language, which makes it hard to simply categorize linguistics into science or arts.

#### 4. The Interdisciplinary Traits of Linguistic Methods

A glimpse of research method guidance books of linguistics can also reveal the interdisciplinary nature of this subject. For example, *Research Methods in Linguistics* (Podseva & Sharma, 2013) published by Cambridge University Press is a widely recommended guiding book on linguistic research in recent years (Falter, 2014). In this book, the authors introduced methods, among which experiments, survey, corpora, statistics, modelling are thoroughly discussed. These methods are usually used to generalize the common features of natural and social phenomena and are in essence very scientific. On the other hand, methods, such as, interview, ethnography, historical texts are also introduced, which are usually helpful in detailed understanding of the diversity and dynamics of human behaviors. These methods are quite predominant in traditional humanistic fields, such as sociology, history, and anthropology. Compared to the objective methods, these approaches are relatively subjective, heavily relying on the perception and sensitivity of the investigators for reaching convincing and persuasive results. Although, the objectivity of these methods is often questioned, the flourishing of these qualitative methods reflects the chaos and randomness of human society. And they are also valuable in unveiling the subtleness and delicacy of social phenomena. The list of the above methods is all unbiasedly used by modern linguists, affiliating linguistics with both science and arts. Particularly, the emerging of digital humanities in recent years has largely break the boundary between science and arts. Big data and artificial intelligence are widely used in the dealing with humanistic hypotheses and expand the scope of linguistic investigations.

#### 5. Conclusion

Based on the above analysis, we may reach an obvious conclusion that linguistics enjoys the merits of both science and arts. Undeniably, the combination of scientific philosophy with artistic beliefs could bring about fruitful results in linguistic fields and create the most flowery of linguistic studies. The manifestation of the interdisciplinary nature of linguistics could help linguists in selecting the promising research topics, adopting effective methodology, and reaching illuminating conclusions. This paper could expand linguists in their research scope and benefit the most cutting-edge research results. Therefore, the future of linguistics is bright and limitless.

## Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

## References

- Aljaafreh, A., & Lantolf, J. P. (1994). Negative Feedback as Regulation and Second Language Learning in the Zone of Proximal Development. *The Modern Language Journal*, 78, 465-483. <https://doi.org/10.1111/j.1540-4781.1994.tb02064.x>
- Andersen, F., & Bache, C. (1976). August Schleicher: Towards a Better Understanding of His Concept of Language Change. *Anthropological Linguistics*, 18, 428-437.
- Barattieri di San Pietro, C., de Girolamo, G., Luzzatti, C., & Marelli, M. (2022). Agency of Subjects and Eye Movements in Schizophrenia Spectrum Disorders. *Journal of Psycholinguistic Research*, 51, 1371-1391. <https://doi.org/10.1007/s10936-022-09903-6>
- Boogers, N., Badan, L., Samo, G., & Fiorin, G. (2022). The Linear Structure of Narrative Figures in the Saint Francis Cycle: A Linguistic Analysis. *Social Semiotics*, 1-34. <https://doi.org/10.1080/10350330.2022.2080544>
- Chomsky, N. (1995). *The Minimalist Program*. MIT Press.
- Costache, O., Becker, E. S., & Goetz, T. (2022). Is English the Culprit? Longitudinal Associations between Students' Value Beliefs in English, German, and French in Multilingual Switzerland. *The Modern Language Journal*, 106, 313-327. <https://doi.org/10.1111/modl.12774>
- Falter, M. M. (2014). Review of Research Methods in Linguistics. *Journal of Language & Literary Education*, 10, 162-165.
- Gardner, R. C., Lalonde, R. N., & Moorcroft, R. (1985). The Role of Attitudes and Motivation in Second Language Learning: Correlational and Experimental Considerations. *Language Learning*, 35, 207-227. <https://doi.org/10.1111/j.1467-1770.1985.tb01025.x>
- Gong, Y., Ma, M., Hsiang, T. P., & Wang, C. (2020). Sustaining International Students' Learning of Chinese in China: Shifting Motivations among New Zealand Students during Study Abroad. *Sustainability*, 12, 6289. <https://doi.org/10.3390/su12156289>
- Kim, T.-Y., & Kim, Y. (2020). Structural Relationship between L2 Learning Motivation and Resilience and Their Impact on Motivated Behavior and L2 Proficiency. *Journal of Psycholinguistic Research*, 50, 417-436. <https://doi.org/10.1007/s10936-020-09721-8>
- Kormos, J., & Csizér, K. (2014). The Interaction of Motivation, Self-Regulatory Strategies, and Autonomous Learning Behavior in Different Learner Groups. *TESOL Quarterly*, 48, 275-299. <https://doi.org/10.1002/tesq.129>
- Koster, J. (2006). Is Linguistics a Natural Science? In H. Broekhuis, N. Corver, R. Huybregts, U. Kleinhenz, & J. Koster (Eds.), *Organizing Grammar: Linguistic Studies in Honor of Henk van Riemsdijk* (pp. 350-358). De Gruyter Mouton. <https://doi.org/10.1515/9783110892994.350>
- Linguistic Society of America*. <https://www.linguisticsociety.org/resource/science-linguistics>
- Liu, M. (2021). Foreign Language Classroom Anxiety, Gender, Discipline, and English Test Performance: A Cross-Lagged Regression Study. *The Asia-Pacific Education Researcher*, 31, 205-215. <https://doi.org/10.1007/s40299-020-00550-w>
- Morita, N. (2004). Negotiating Participation and Identity in Second Language Academic Communities. *TESOL Quarterly*, 38, 573-603. <https://doi.org/10.2307/3588281>

- Podesva, R. J., & Sharma, D. (2013). *Research Methods in Linguistics*. Cambridge University Press.
- Saloranta, A., Heikkola, L. M., & Peltola, M. S. (2022). Listen-and-Repeat Training in the Learning of Non-Native Consonant Duration Contrasts: Influence of Consonant Type as Reflected by MMN and Behavioral Methods. *Journal of Psycholinguistic Research*, 51, 885-901. <https://doi.org/10.1007/s10936-022-09868-6>
- Saussure, F. (1959). *Course in General Linguistics* (W. Baskin, Trans.). The Philosophical Library. (Original Work Published 1916)
- Sealey, A., & Carter, B. (2004). *Applied Linguistics as Social Science*. Continuum.
- Snajdr, E., & Trinch, S. (2022). To Preserve and to Protect Vanishing Signs: Activism through Art, Ethnography, and Linguistics in a Gentrifying City. *Social Semiotics*, 32, 502-524. <https://doi.org/10.1080/10350330.2022.2114728>
- Wallace, A. R. (1870). *Contributions to the Theory of Natural Selection. A Series of Essays*. Macmillan Co. <https://doi.org/10.5962/bhl.title.1254>
- Zeng, T., Mao, W., & Gao, Y. (2021). An Eye-Tracking Study of Structural Priming from Abstract Arithmetic to Chinese Structure NP1 + You + NP2 + Hen + AP. *Journal of Psycholinguistic Research*. <https://doi.org/10.1007/s10936-021-09819-7>
- Zhang, M., Wang, X., Wang, F., & Liu, H. (2019). Effect of Cognitive Style on Language Control during Joint Language Switching: An ERP Study. *Journal of Psycholinguistic Research*, 49, 383-400. <https://doi.org/10.1007/s10936-019-09682-7>
- Zhang, X., Austin, B. W., & Ardasheva, Y. (2022). New Directions in L2 Self-Efficacy Research: Comparing Bifactor and Second-Order Models in the English Public Speaking Domain. *Journal of Psycholinguistic Research*. <https://doi.org/10.1007/s10936-022-09910-7>
- Zhao, L., Kojima, H., Yasunaga, D., & Irie, K. (2021). Syntactic and Semantic Processing in Japanese Sentence Reading: A Research Using Functional Near-Infrared Spectroscopy (FNIRS). *Journal of Psycholinguistic Research*. <https://doi.org/10.1007/s10936-021-09818-8>
- Zhou, P., Ma, W., & Zhan, L. (2019). A Deficit in Using Prosodic Cues to Understand Communicative Intentions by Children with Autism Spectrum Disorders: An Eye-Tracking Study. *First Language*, 40, 41-63. <https://doi.org/10.1177/0142723719885270>
- Zhou, P., Shi, J., & Zhan, L. (2020). Real-Time Comprehension of Garden-Path Constructions by Preschoolers: A Mandarin Perspective. *Applied Psycholinguistics*, 42, 181-205. <https://doi.org/10.1017/S0142716420000697>
- Zhu, H., & Clark, A. (2022). Distributional Lattices as a Model for Discovering Syntactic Categories in Child-Directed Speech. *Journal of Psycholinguistic Research*, 51, 917-931. <https://doi.org/10.1007/s10936-022-09872-w>