#### **Review Article**

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# What is Salience?

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**Abstract:** A commonly used concept in linguistics is salience. Oftentimes it is used without definition, and the meaning of the concept is repeatedly assumed to be self-explanatory. The definitions that are provided may vary greatly from one operationalization of salience to the next. In order to find out whether it is possible to postulate an overarching working definition of linguistic salience that subsumes usage across linguistic subdomains, we review these different operationalizations of linguistic salience. This article focuses on salience in sociolinguistics, cognitive linguistics, second-language acquisition (SLA), and semantics. In this article, we give an overview of how these fields operationalize salience. Finally, we discuss correlations and contradictions between the different operationalizations.

**Keywords:** linguistic salience, frequency, language processing

## 1 Introduction

*Salience* is a concept used in a variety of studies across different fields. Still, it remains unclear just what the concept of salience is. Even within a single discipline, salience conveys an array of meanings. The discipline of linguistics is no exception. Linguistic publications that refer to salience often fail to provide a working definition of the term and use it to refer to phenomena as diverse as surprise, frequency, acoustic prominence, and more. Frustratingly, even when definitions are given, they are often circular: the properties that make a feature salient are the ones that follow from it being salient (Kerswill and Williams 2002; Rácz 2013). In other cases, for example in sociolinguistics, salience is described with reference to other concepts, which also lack consensual definitions, such as "markedness" or, in second-language acquisition (SLA), "attention."

Either salience is *not* a scientific concept, in which case it may be considered as, for example, a heuristic which is used differently across and within scientific disciplines or else salience is a scientific concept, in which case the concept should have a terminological definition. But how can that terminological definition be identified? Since salience is used in contradictory ways within linguistics, this topic deserves consideration.

To address the question of whether salience is a scientific concept, and to make sure we do not "throw the baby out with the bathwater," we try to determine the availability of a definition of "salience" common within and/or across linguistic sub-disciplines. If there is, we can put it in black and white as a resource for others who are working on topics relating to salience. And if there is not, we can write a paper called "Against Salience" a la Haspelmath.

We are not the first to seek an understanding of salience. For example, Zarcone et al. (2016) have pointed towards the lack of terminological consistency when it comes to using the concept of salience. Moreover, Schmid and Günther (2016) sought to develop a single framework that can join together the

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different notions of salience. They conclude that salience is the result of assessing incoming linguistic information based on existing expectations in the individual, which are triggered by an interaction of perceived linguistic, situational and societal context, and the long-term memory-based cognitive context (Schmid and Günther 2016). Because of these differing internal contexts, a feature can be salient for one person and non-salient for another, or it can be salient for both but for different reasons. This attempt at a unified account is top-down, that is, it seeks to foist a definition onto the field, without adequately accounting for how it is used. Apart from that, it is describing psychological concepts.

Like any word, term or concept, *salience* has no "intrinsic" or absolute meaning. The meaning of salience depends entirely on contrast with other words and concepts. To arrive at an understanding, we must connect the signified and signifier in the linguistic texts in which the term is used and identify all the signifiers for salience across all the texts, considering the context of use alongside related concepts. If the signifier *salience* is a term, its meanings are regulated by an (implicit or explicit) negotiation directed towards achieving consensus. We hope to impulse that consensus in this contribution. Therefore, in this article we perform a literature review dedicated to two questions:

- 1. How is salience used within linguistic sub-disciplines? and
- 2. Is there an overarching concept of salience within linguistics?

This article is structured as follows: we start with a rigorous literature review, which we describe in Section 2. Section 3 outlines the results of the literature review, which are organized into four subsections corresponding to four sub-disciplines of linguistics. Next, in Section 4 we consider these results from a fresh perspective, extrapolating observations across definitions of salience before offering a conclusion in which we outline the path ahead.

## 2 Methods

Our research was performed through a literature review using Web of Science (WoS). We performed the search within the WoS Core Collection, allowing search for papers published since 1945. The collection includes works within the fields of sciences, social sciences, arts, and humanities. Similarly, it provides access to the Science Citation Index Expanded, Social Sciences Citation Index, Arts and Humanities Citation Index, and Emerging Sources Citation Index. We used the (English) keywords salience, marked(ness), linguistic, and language in their regular expressions form. For example, Salien\* would yield salience, saliency, and salient. We combined this with the other keywords to target linguistic salience in particular. We included the keyword marked(ness), as multiple scholars have suggested overlap between the two concepts (Deumert 2003; Hume 2004; Haspelmath 2006; among others). We limited the search query to the title of the articles:

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(ti = (*Salien*) \text{ and } ti = (*marked* \text{ or } *linguist* \text{ or } *language*))
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The search yielded 86 sources. The list of sources was then extended through a snowball effect to include additional relevant literature, which resulted in another 48 sources. From these 134 sources, we then removed 27 sources, which did not concern linguistics. Additionally, 32 sources were discarded because while they were within the field of linguistics and also concerned salience, they relied on readers' implicit understanding of salience and provided no definition or description of the concept. This left a total of 75 sources. We grouped these sources into one of four linguistic sub-disciplines, as evident in the boxes at the bottom row of the schematic overview of the literature search in Figure 1.

These sub-disciplines were chosen for two reasons. The first stems from an observation made by Rácz (2013) that we should differentiate between social and cognitive aspects of salience. This motivates the division into sociolinguistics and cognitive linguistics. The other two sub-disciplines, SLA and semantics, are included because many of the texts we found came from these sub-disciplines and did not explicitly link to sociolinguistics or cognitive linguistics.

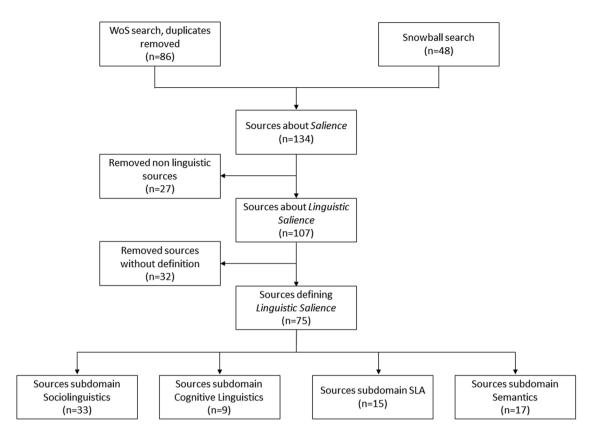


Figure 1: The selection of relevant literature.

Assigning one sub-discipline to a given text was not always easy as some of the texts referred to multiple sub-disciplines. For example, the concept of salience proposed in Ellis (2018) primarily concerns salience in SLA, though it also refers to sociolinguistic issues. Similarly, one could argue to group Giora (2003)'s work on the processing of literal meanings under both the semantics category and the cognitive linguistics category. Nonetheless, we categorized each text under one and only one sub-discipline based on the theoretical models adopted and the scope of the publication in which the text appeared. For a complete overview of the sources in each sub-domain, see Appendix A.

## 3 Results: salience in linguistic sub-disciplines

Linguistics can be divided into different arrays of sub- and sub-sub-disciplines. In this contribution, we consider sociolinguistics, cognitive linguistics, SLA, and semantics.

After considering salience within each sub-discipline, we posit at least one definition extrapolated from our reading of that sub-discipline. We will then compare and contrast those definitions.

## 3.1 Salience in sociolinguistics

Salience has been called "a maddeningly under-defined term when used in sociolinguistics" (Meyerhoff 2011). As in, for example, Schirmunski's (1930) study of dialect contact in German speaking enclaves in Russia, salience is often connected to Labov's (e.g. 2007) indicator and marker variables. The former are dialectal variables that distinguish social or geographic categories but have attracted no notice and do not

figure in variation across the formality continuum. Only linguists are aware of indicators. The latter are variables that connect to sociolinguistic identities (or even stereotypes). Non-linguists and linguists are aware of markers (Labov 2007; Watt 2008). Thus, markers could be seen as salient and indicators as nonsalient variables. Central to this conceptualization is that the salient variable carries "social indexation" (cf. Honeybone and Watson 2013; Rácz 2013; Levon and Fox 2014).

Linguists have assigned explanatory power to salience in the context of language change, trying to understand the "actuation problem" (Weinreich et al. 1968) which concerns how and why language change begins (cf. Trudgill 1986; Kerswill and Williams 2002). In this context, the definition provided by Trudgill in his work Dialects in Contact (1986) was widely accepted as the "standard" way of applying the concept of salience (Kerswill and Williams 2002; MacLeod 2015) - though it is said to be circular (Kerswill and Williams 2002; Llamas et al. 2009). According to Trudgill (1986), salience has its basis in perceptual distinctiveness and speaker attitudes and is "a trait a variable acquires based on its perception by individual speakers" (Trudgill 1986; Rácz 2013). Trudgill (1986) lists the following "properties" that make a variable salient:

- 1. The variable belongs to an overtly stigmatized variant,
- 2. The variable belongs to a high-prestige variant (indicated in the orthography),
- 3. The variable is undergoing change,
- 4. The variable comprises a large phonetic difference,
- 5. The variable that involved in the maintenance of phonological contrasts (p. 11).

The aforementioned issue of circularity in this account of salience is addressed by Kerswill and Williams (2002) who postulate three properties which they assert all operationalizations of salience should adhere to:

- 1. The presence of a linguistic phenomenon whose explanation [...] may be due to the salience of the linguistic feature or features involved.
- 2. Language-internal explanations, such as the presence of phonological contrast, great phonetic distance, internally defined naturalness, semantic transparency, or a particular syntactic or prosodic environment.
- 3. Extralinguistic cognitive, pragmatic, interactional, social psychological, and socio-demographic factors. Some have a natural link with the linguistic features being adopted (e.g. that between a syntactic feature and its pragmatic function), while others have an arbitrary relationship (e.g. the favouring of one vowel quality over another). (p. 105)

Rácz (2013) finds this insufficient as it reduces salience to a synonym for marker. He also notes the circularity issue they sought to address is not satisfactorily resolved: properties of a salient variable are the ones that follow from it being salient in the first place (Rácz 2013). Rácz does, however, indicate that it seems certain that sociolinguistic variables "can be grouped along the indicator/marker dimension [...] with respect to whether they carry social indexation" (2013).

Finally, some sociolinguists propose a relationship between salience and markedness (Bardovi-Harlig 1987; Rácz 2013). Introduced by Trubetzkoy in 1931, markedness refers to a way to compare multiple terms or concepts by identifying which term/concept is different from the other. The classic example is male/ female, where male is unmarked and female is marked by fe-. The general account in markedness theory is that the unmarked form is typically "generic" relative to the marked form. The unmarked form is less generic and more salient. Deumert (2003) posits a distinction between the domain in which markedness and salience operate. She writes that while markedness operates mostly on a language internal level, salience operates on an external one, thus concerning discourse participants and their perception of language. In other words, salience is a psychological and speaker-oriented concept, whereas markedness is a structuralist and system-oriented concept. This summary should be taken with a grain of salt, considering Haspelmath's (2006) work which identifies 12 different senses of marked, before famously suggesting that the term should be abandoned because "simple everyday concepts should be expressed by simple everyday words" (Haspelmath 2006: 63).

According to our review, in sociolinguistics salience is considered in terms of:

- 1. Social indexation: salience is, in part, a feature that distinguishes markers from indicators.
- 2. Markedness: marked forms are more salient than unmarked ones.

#### 3.2 Salience in cognitive linguistics

Within cognitive linguistics, salience is often described with reference to surprisal, predictability, and/or (un)expectedness (Rácz 2013; Ellis 2016; Jaeger and Weatherholtz 2016; Schmid and Günther 2016; Zarcone et al. 2016). The concept of salience in cognitive linguistics, then, can be said to resemble that used in visual cognition, where salient properties "stand out" from their surroundings, and "attract attention" more readily than non-salient properties (Rácz (2013)). An example of this is the text by Tomlin and Myachykov (2015), in which salience is discussed in relation to the cueing paradigm, according to which cues can direct attention towards stimuli (i.e. the attended stimulus is salient). Tomlin and Myachykov (2015) posit that this cue can be both external, like an arrow pointing towards a stimulus in a visual scene, and a feature of the stimulus itself. Similarly, a cue may be exogenous, when it is external to the perceiver's mind or endogenous, when it originates from within the perceiver's mind. These latter cues are guided by internally generated plans and/or intentions. Finally, Tomlin and Myachykov identify explicit cues, which are clearly noticeable and consciously processed, and implicit cues, which are typically unnoticed (Tomlin and Myachykov 2015).

That said, this resemblance is contentious. While, on the one hand, according to Coco and Keller (2015), visual and linguistic salience complement each other, on the other Vogels et al. (2013) found no interaction between visual and linguistic salience.

Salience is also used in cognitive linguistics to explain an array of information—theoretical concepts drawn from cognitive psychology to account for attentional processes. For example, consider the case of language processing: it is harder to process simultaneous speech streams relative to the speech from a single voice. What a listener ends up processing is said to be determined by salience (Rácz 2013).

Much of the salience-related literature in cognitive linguistics involves a distinction between bottom-up salience and top-down salience. For example, in the work of Zarcone et al. (2016), bottom-up salience involves a feature physically and/or auditorily standing out, and becoming salient owing to that feature's low predictability. Top-down salience, conversely, is understood as arising from a feature's high predictability. Factors which impact top-down salience include a "perceivers goals, the features of a search target, relevance to the task, recent selection history and cognitive relevance" (p. 6).

In other words, in cognitive linguistics, something is salient either because of an intrinsic property (bottom-up salience) or because of an external contextual factors (top-down salience). Simply put, bottom-up salience corresponds to something like "surprisal" and top-down salience corresponds to something like "expectedness."

This surprisal-based account of salience is also discussed by Jaeger and Weatherholz (2016) who state that "the surprisal of [a] variant given the prior expectations of the listener [...] is expected to predict initial salience." In other words, the violations of expectations about the incoming input should be seen as salient. These "expectations" comprise both the linguistic context, that is "the probability of a lectal variant given surrounding phonological or lexical information" (p. 2), and the social context, meaning "the probability of a lectal variant given socio-indexical information about the talker" (p. 2).

One important caveat is that while Zarcone et al. (2016: 2) acknowledge that it would be both "elegant" and "theoretically tempting" to see salience as a mere result of surprisal, the relationship between the two is not adequately elucidated.

According to our review, in cognitive linguistics, salience is considered in terms of:

1. *Predictability*: infrequent features are unexpected or surprising, which makes them stand out and more salient. On the other hand, frequent features are more easily accessible, which makes them easier to process and more salient. As such, features on both ends of the "predictability spectrum" can be considered salient.

- 2. Top-down salience: external sources provide a context in which something becomes salient.
- 3. *Bottom-up salience*: there is an intrinsic property of the feature that makes it more noticeable.

## 3.3 Salience in second language acquisition

The assumption throughout the book *Salience in Second Language Acquisition* (Gass et al. 2018) is that salience is "a factor that makes something easier to perceive" (p. 1). Gass et al. observe that although salience often plays a role in discussions on SLA, the concept has not received as much attention in the field relative to other sub-domains of linguistics, even though "salience has been related to many different aspects of second language acquisition" (p. 6). The book revolves mainly around perceptual salience (i.e. an intrinsic property of certain linguistic entities which makes them more prominent) and constructed salience (i.e. a context for salience is constructed by an outside source), a division parallel to that posited for bottom-up and top-down salience in cognitive linguistics (cf. Simoens et al. 2018). Furthermore, Gass et al. (2018) mention "grounded" salience, according to which something is salient because it is unexpected or deviates from the norm. As an example, infrequency is mentioned. What these three types of salience have in common is that the salient feature is easier to perceive.

Similarly, Ellis (2018) posits that salience can be seen as a factor that plays an important role in the learning process as they attract attention and are therefore more easily learned. As an example, we might look at the work by Goldschneider and DeKeyser (2001) who in their meta-study found that perceptual salience was the best predictor of the order of acquisition of morphemes.

Siegel (2010) posits that salience affects the degree of dialect acquisition (p. 120). He states that salient features occurring in a first dialect are more likely to be given up in situations of language shift. This is illustrated by Hiramoto (2010) who observes how Japanese immigrants in Hawai'i abandon stigmatized (and as such salient) features from their dialect and replace them by features from the standardized language. To compare, items that are subject to a high degree of lexicalization (and as such, are salient) are most likely to be given up in a language shift (Siegel 2010).

Finally, DeKeyser et al. (2018) distinguish between narrow, medium, and wide salience. For narrow salience, meaning is not taken into account, and only perceptual criteria, such as syllabicity, sonority, stress, and sentence position, are included. Medium salience combines perceptual salience and meaning. As such, medium salience includes "everything linguistic" (p. 133), such as "noticeability of form for auditory, positional, or paradigmatic reasons." Wide salience moves beyond linguistics and includes psychological and physical contexts, i.e. "including the salience of the meaning in the physical, psychological, or linguistic context" (p. 133).

According to our review, in SLA, salience is considered in terms of:

- 1. *Infrequency*: low frequency of occurrence leads to a higher level of unexpectedness, which makes something stand out.
- 2. Intrinsic or perceptual salience: an intrinsic property of the feature makes it stand out.
- 3. Extrinsic or constructed salience: external sources provide a context in which something becomes salient.

#### 3.4 Salience in semantics

Scholars working in semantics discuss salience in terms of accessibility and have suggested that it could be a result of high frequency (e.g. Bardovi-Harlig 1987; Chapman 1995; Giora 2003; Cieślicka 2006). They argue that more frequent features are more regular, making them more easily accessible and salient. For example, the more often a listener has encountered a meaning, the more easily it is processed, because they can draw from past experiences. In other words, high frequency makes a feature salient. Note this is contrary to the definition used in SLA where salience was described as an infrequency.

The posited correlation between salience and high frequency is evident in the work of Giora (e.g. 1997). Giora proposes that salience plays a role in processing of figurative and literal speech, in that salient meanings are processed prior to other meanings. The salience of figurative or literal phrases is, according to Giora (1999: 921), "a function of [...] conventionality, familiarity, frequency, or givenness in a certain situation," while novelties are seen as not salient. Studies looking into the relationship between frequency and processing effort conclude that features with a high frequency are processed faster and more easily (cf. Brysbaert et al. (2018)). Giora postulates that salient features are processed first in the Graded Salience Hypothesis (GSH). If different meanings carry the same level of salience, the processing of these meanings will happen in a parallel fashion (Giora (1997)). In a review Giora and Kecskes (2006) asserts that the GSH can be an alternative for top-down/bottom-up effects on processing effort.

According to Giora (1997), a salient/non-salient continuum can account for ease of processing, with salient meanings being easiest and non-salient meanings hardest to process. This theory contrasts with the works of Rácz (2013) and Kerswill and Williams (2002) who wrote that salience should not be conflated with frequency.

Perhaps it is useful to illustrate this with an example. Consider a phrase like "it's raining cats and dogs." The figurative meaning of this phrase (i.e., it is raining heavily) is, according to the above analysis of Giora (2003), more salient than the literal meaning (i.e. cats and dogs are falling from clouds in the sky).¹ The figurative meaning comes to mind first. Note that it is possible for meanings to become more or less salient over time. For instance, innovations can become salient, while older meanings might lose their accessibility. In other words, the extent to which a word or phrase is salient can change.

Extending on the work of Giora (1997, 1999, 2003), Cieślicka (2006) uses what she calls "literal salience" to explain the processing priority of literal meanings. She understands salient meanings as "the meanings which are activated first and most strongly in the course of language processing" (Cieślicka 2006: 121). This advantage for certain meanings is likely to be a result of the fact that these meanings have a stronger embedding within the mental lexicon (Cieślicka 2006).

According to our review, in semantics salience is considered in terms of:

1. High frequency: meanings which are frequent, are more easily accessible and hence easier to process.

## 4 Conclusion

Our literature review has answered the first research question ("How is salience used within linguistic subdisciplines?") and we have found an array of concepts called *salience*. In this section, we target the second research question ("Is there an overarching concept of salience within linguistics?").

In the introduction, we posited that to understand how the concept of salience is used differently across different sub-disciplines, we must connect the signified and signifier for each individual text and identify all the signifiers for salience in the 75 texts, considering the context of use alongside related concepts. Having done that, we can now consider *salience* as a signifier. As a term, its meanings are regulated by an (implicit or explicit) negotiation directed towards achieving consensus. From the review above, we identify two approaches to operationalizing salience: one originating from psychology and the other from linguistics, broadly speaking, as shown in Table 1.

As seen from the table, this division in some cases runs through the identified sub-fields. The actual situation is, as such, far from black and white. Circularity and contradiction within and across the operationalizations of salience remain an issue and therefore warrant consideration. The division identified here does not immediately point towards a single overarching framework of salience. Still, there are a number of overlaps between the two identified operationalizations worth exploring further. Therefore, we will now

<sup>1</sup> Comparatively, in cognitive linguistics, the extremely infrequent literal meaning, would therefore be salient.

Table 1: Definitions per sub-discipline

		Psychological	Linguistics
Sociolinguistics	Social indexation		Х
	Markedness		Χ
Cog ling.	Predictability	Χ	
	Top-down	Χ	
	Bottom-up		Χ
Second-lang acq.	Infrequency		Χ
	Intrinsic or perceptual	Χ	
	Extrinsic or constructed	Χ	
Semantics	High freq.		Χ

highlight three such correlations between the varieties and the identified concepts of salience which may provide hooks for the future research.

First of all, we consider the relation between frequency and salience. From our review, it has become clear that salience and frequency might be related in two different ways. First, there might be a relationship with low frequency. The infrequency of a feature results in a higher degree of surprisal, which makes it stand out and more likely to be processed. Alternatively, there might be a relation with high frequency. The more frequent a feature is, the more familiar the feature will be, which in turn makes the feature easier to process. In a probabilistic framework of language processing, such as that suggested by Zarcone et al. (2016), the two definitions that seemed contradictory at first might prove to be two sides of the same coin. How frequency and salience relate to one another, then, is a question that requires further investigation.

Next, we have seen that the division between intrinsic and extrinsic salience is made in many operationalizations discussed in this review. On the one hand, features are seen as salient because of an intrinsic, physical property. These intrinsic factors are also referred to as bottom-up salience. On the other hand, features are salient based on an extrinsic property. Kerswill and Williams (2002) stated, for example, that the external grounding for salience is necessary to avoid circularity. These extrinsic factors, such as context, goals, and selection history, are also referred to as top-down factors. How these bottom-up and top-down factors work exactly in the context of salience is worth exploring further. Interestingly, the topdown factors are speaker- and situation-specific. As such, we have to take into account the speaker-specific variation that is a result of the speaker's different experiences, goals, and context, making the salience of a feature highly individual. The question, then, is whether it is possible to define a model of salience which accounts for these personal variations and the interplay of different factors.

Third, we consider the relation between social meaning, salience, and language change. We discussed how a features social salience is said to play a role in its propagation (cf. Rácz 2013). Hence, it has been argued that by understanding the concept of (social) salience, we may better understand the dynamics of language change (Rácz 2013: 148). Salient (i.e. unexpected or novel) features are more likely to be noticed, which makes it more likely for these features to be learned. In turn, this results in the adoption of these features. Interestingly, then, salience plays a role in the propagation of some forms, but not others. This observation raises the question as to what the relationship is between social meaning, salience and language change, or even if there is one at all.

To conclude, in the introduction we touched upon the Unified framework proposed by Schmid and Günther (2016). While useful, it reports mainly on psychological aspects of salience. As such, it clearly overlaps with what we found for the psychological operationalizations for salience in linguistics. However, there are some gaps. Our approach provides a descriptive account of how salience is used in linguistics and as such provides a more inclusive description of what linguistic salience entails. In describing how salience is used throughout linguistic sub-domains, we have raised a number of questions that (still) surround the concept of salience as it is used in linguistics today. Questions like these are crucial in deciding whether we need and accept salience as a scientific concept, or whether "simple everyday concepts should be expressed

by simple everyday words" as Haspelmath (2006: 63) so famously wrote for markedness. If the latter is the case, we argue that the next step should be to write a paper entitled "Against Salience."

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