

Whatever happened to the Scene Encoding Hypothesis? Salience and pertinence as the missing links between the Usage-Based Model and Scene Encoding

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Abstract

We argue that there has been a shift of focus from the Scene Encoding Hypothesis (SEH) to the Usage-Based Model (UBM) within the research on Construction Grammar (CxG) and that this shift was (and continues to be) characterized by the negligence of the SEH tradition. It is discussed what is the relationship between the respective explanatory scopes of the SEH and the UBM within the larger context of cognitive constructionist linguistics. A practical though not programmatic one-sided focus on the UBM produces theoretical problems leading to “flat” explanations. The UBM crowd in cognitive-functional linguistics has increasingly become aware of that problem which has led to the parallel increase in the prominence of the notion of “salience” within the UBM. We will argue that this notion, as it is applied in current research, is a potential bridge between the SEH and the UBM, since it may potentially (re-)introduce the neglected phenomenal qualities into the modeling of language competence and structure. However, in its current state within the theory of the UBM, the notion of “salience” falls short of the involved cognitive and practical intricacies and thus needs a careful theoretical and empirical re-evaluation. We will attempt to indicate a potential direction of this re-evaluation by introducing the concepts of ‘salience and pertinence under a pragmatic motive’. In the course of our considerations, we will show that not only the UBM needs complementation by the SEH, for which salience and pertinence may be the bridge, but also that the SEH, despite its principal correctness, is itself fundamentally underspecified with respect to its qualifications. The potential bridge between the UBM and the SEH via salience and pertinence will also provide the qualifications the SEH was lacking so far.

1 Introduction

Construction grammars look back on 35 years of theoretical and empirical research. Within these three and a half decades some major shifts of focus have taken place in theory and in practice. One of the, if not the, most profound shifts of focus has been that from a qualitative to a quantitative approach to grammatical competence and structure. The former is represented by theoretical and empirical work in the wider context of the Scene Encoding Hypothesis (henceforth “SEH”; Goldberg 1995: 39), according to which grammatical structure – more precisely, “argument structure” – reflects how people perceive situations and events. The latter, quantitative, approach came up in the context of the Usage-Based Model of grammatical structure and competence (henceforth “UBM”; cf. Langacker 2000, but also Goldberg 2006, 2019). According to that model, the structure of grammars and our grammatical competence, as well as our “output” performance, is

fundamentally shaped by the quantitative properties of the linguistic input, mediated by cognitive entrenchment.

The present thinkpiece starts from the observation that the shift of focus from the SEH (section 2) to the UBM (section 3) within the research on CxG was (and the current focus continues to be) characterized by the negligence of the SEH tradition. It is discussed what the relationship is between the respective explanatory scopes of the SEH and the UBM within the larger context of cognitive constructionist linguistics (section 4). In this context we will argue that the disregard of the SEH in favor of the UBM is not primarily due to diverging theoretical assumptions, but to the practicalities of corpus-linguistic practice. However, a practical, though not programmatic, one-sided focus on the UBM produces theoretical problems leading to “flat” explanations. The UBM crowd in cognitive-functional linguistics has increasingly become aware of that problem, which has led to the parallel increase in the prominence of the notion of “salience” within the UBM (section 5). We will argue that this notion, as it is applied in current research, is a potential bridge between the SEH and the UBM, since it may potentially (re-)introduce the neglected phenomenal qualities into the modeling of language competence and structure. However, in its current state within the theory of the UBM, the notion of “salience” falls short of the involved cognitive and practical intricacies and thus needs a careful theoretical and empirical re-evaluation. We will attempt to indicate a potential direction of this re-evaluation (section 6). In the course of our considerations, we will show that not only the UBM needs complementation by the SEH, for which salience may be the bridge, but also that the SEH, despite its principal correctness, is itself fundamentally underspecified with respect to its qualifications. The potential bridge between the UBM and the SEH via “salience” will also provide the qualifications the SEH was lacking so far (section 7).

2 The Scene Encoding Hypothesis: some context and history

With the SEH, Goldberg (1995: 39) expressed a central idea of early (Cognitive) Construction Grammar (henceforth “CxG”), namely that “[c]onstructions which correspond to basic sentence types encode as their central senses event types that are basic to human experience”. When introducing the general concept a few lines earlier, Goldberg (*ibid.*) had chosen a slightly different wording, saying that “each of the basic clause-level constructions [...] can be seen to designate a humanly relevant scene” (*ibid.*). The general idea behind the SEH is older, however; it can safely be traced back to Fillmore’s (1968) Case Grammar and (1977a, 1977b) Scenes and Frames stages of thinking. Back then, Fillmore (1977a: 61, capitals in the original) had already hypothesized that

the function of [the CASE FRAME] [...] is to provide a bridge between descriptions of situations and underlying syntactic representations. It accomplishes this by assigning semantico-syntactic roles to particular participants in the (real or imagined) situation represented by the sentence. This assignment determines or constrains the assignment of a PERSPECTIVE on the situation [...].

The term “perspective” here is important. With this term, Fillmore makes clear that the “situation” expressed by the “sentence” is not an objective state of affairs but depends on the language user’s role, position, or stance in relation to the situation. This is a major departure from what was going on in the field at the time, because many ideas about a

general co-dependency between clausal semantics and syntax, which inhibited the further development of the modeling of the syntax–semantics relationship to a considerable degree, ultimately go back to Gruber (1965) in particular, and, thanks to Chomsky’s Generative Grammar, the then-flourishing MIT milieu in general. Stemming from the same milieu, Baker (1985: 57) later formulated the highly influential “Uniformity of Theta Assignment Hypothesis (UTAH)”, stating that

[i]dentical thematic [= semantic role – SK/CP] relationships between items are represented by identical structural relationships between those items at the level of D-structure [i.e., an initial syntactic representation prior to movement operations – SK/CP].

The appeal of hypotheses like the SEH and UTAH is easy to see: they promise to uncover the relative semantic motivation of clause structures in contrast to the traditional assumption of the arbitrariness of signs. De Saussure knew the concept of relative motivation of sign combinations, of course, but didn’t ground it in the structure of events and situations, be they “objective” or “subjective”, but rather in the idea of composition, i.e., the relative motivation of sign combinations “within” the more general arbitrariness. What the SEH and UTAH ultimately promise, however, is an explanation of clause structures in the sense that we may be able to predict the lexical and grammatical makeup of utterances from non-linguistic cognitive and perceptual processes and the other way around.

One of the crucial differences between the two lines of research leading to the SEH and the UTAH, respectively, is the functionalism¹-cum-computationalism-cum-modularism at the heart of Mainstream Generative Grammar – an assumption from which the CxG line of research has firmly distanced itself (cf. Lakoff & Johnson 1999), placing its bets on embodied realism and the cognitive and generalization commitments instead (cf. Lakoff 1990). In this research tradition of cognitive-functional linguistics, knowledge of language, including clause structures, and knowledge of situations and events, including those associated with clauses, share a common source, i.e., embodied experience, and common representational formats, among them modal representations like image-schemas. By contrast, Mainstream Generative Grammar assumes different mental modules, each of which operates via the manipulation of its own format of amodal meaningless symbols, and which are connected to each other by interfaces. Furthermore, and crucially, while the amodal structures of the computational mind, including the grammatical ones, are functionalist and therefore static descriptions, derivational histories between static structures and processes of meaning composition are not to be interpreted temporally and as necessarily mirroring cognitive activities. In contrast, the representations, or concepts, in cognitive-functional linguistics are modelled not as static-functional, but as “realistic” dynamic construals and conceptualizations of states of affairs, mediated by the peculiarities of the bodies of the perceivers and by embodied cognitive processes like categorization, schematization, association, profiling and so on. This leads to markedly different theoretical implications of the UTAH as a part of Mainstream Generative Grammar and the SEH as a part of cognitive-functional linguistics: in the latter, structural differences in clauses reflect differences in the (perceived and conceived) content structure of events or situations and in the modes and manners in which these events or situations are perceived and conceived, “modes and manners” pertaining to activities like choice of perspective,

¹ Functionalism in this sense, as a paradigm in the philosophy of mind, is not completely unrelated to, but also not to be confused with the linguistic form-follows-function functionalism which is often set in opposition to function-follows-form formalism.

attentional focus (“profiling”), memory (concept association and retrieval) and categorization (recognizing something as something).

The work within both lines of research has led to many insights which are widely taken for granted today and often form canonical knowledge about clausal semantics within their respective research areas. The categories which have been uncovered and which have been demonstrated to shape the grammatical realization of events and situations range from thematic (= semantic) roles via the causal structure of events, image-schemas, motion, space, subtle differences in agentivity, categories of affectedness and involvement to event construal, iconicity, animacy and possession and many more. The grammatical effects of these factors are the general morphological, prosodic and syntactic structure of clauses, from case assignment and agreement over word and constituent order to restrictions on argument structure.² Many theoretical claims related to these “scene-encoding” linguistic matters have been corroborated experimentally (e.g., Bornkessel-Schlesewsky & Schlewsky 2009a, Kemmerer 2014 for overviews).

3 The rise of usage-based theories of language and their application

Not long after its heyday around the 2000s, the SEH seems to have increasingly fallen in disregard or to have been neglected in favor of the uprising Usage-Based Model of grammar (programmatically Langacker 1987, 2000; Kemmer & Barlow 2000; Bybee & Hopper 2001) and its application in corpus linguistics. Usage-based cognitive and constructionist corpus-linguistic studies are legion today. The UBM has led to a “quantitative turn” (e.g., the eponymous title of Janda 2013) in cognitive-functional linguistics, which stands in contrast to the more qualitative nature of the research conducted in the context of the SEH. The quantitative turn that came with the UBM is based on the assumption that

[g]rammar is a dynamic system of emergent categories and flexible constraints that are always changing under the influence of domain-general cognitive processes involved in language use. (Diessel 2019: 51)³

² See Croft (1991, 2012), Talmy (2000), Langacker (2008), Kasper (2015) and the respective chapters and entries in Evans & Green (2006), Dąbrowska & Divjak (2015), Dancygier (2018) for research in the context of CFL; see Gruber (1965), Fillmore (1968; 1977a; 1977b), Jackendoff (1972; 1983; 1990; 2002), Pinker (1989), Grimshaw (1990), Primus (1999), Hale & Keyser (2002), Levin & Rappaport-Hovav (2005), Ramchand (2008) in the more, but also less, mainstream Generative tradition.

³ By the way, this quote contains an ambiguity in the notion of “grammar” that has been pervasive for a long time now, namely its ambiguity between the micro-level ‘system-like grammatical “knowledge” of the individual’ (“knowledge” itself being highly ambiguous) and the macro-level ‘virtual or social, i.e., supra-individual institution’, to name just two readings among others. Both can be said to be related to “language use” somehow – the individual in relation to concrete linguistic performance, the virtual system in relation to *parole* in general – and both can be said to “emerge” somehow in “language development, which in turn is driven by language use.” (Diessel 2019: 51). The pitfalls of this equivocation, whether intended or accidental, would deserve a discussion of its own. To name only one, which we call the structure/knowledge fallacy, it presumes that the results of linguistic research, reached via systematic linguistic methods ranging from reasoning via experimental hypothesis testing to statistical analyses, form the tacit knowledge of language users. The identification of scientific category systems with individual everyday knowledge is highly problematic. For instance, while individual everyday knowledge partially consists in heuristic rules of thumb and is oftentimes incoherent on the whole, this would disqualify scientific categorization. Furthermore, it harbours the risk of projecting macro-structural issues onto the micro-level (in the sense of Keller 2003).

Applied to the individual language user's mastering of their language, it is especially one aspect of language use that has become central to the UBM and later CxG: the statistical properties of the supposed linguistic input language users are confronted with, and in particular the type and token frequencies and the statistical preemption of constructions (cf. especially Goldberg 2006, 2019). The most important domain-general cognitive processes that "process" this input are association, categorization, entrenchment and schematization. Concerning the former two, the language user's task is to determine what in the input belongs to what, to form larger complexes (association) and to determine which category a given unit or complex in the input belongs to (categorization). The quantitative, or statistical, properties of the input are most closely linked to entrenchment. Langacker (2008: 16), who coined the term, characterizes its function in the following way:

Automatization is the process observed in learning to tie a shoe or recite the alphabet: through repetition or rehearsal, a complex structure is thoroughly mastered, to the point that using it is virtually automatic and requires little conscious monitoring. [...] [A] structure undergoes progressive entrenchment and eventually becomes established as a unit.

Thus, entrenchment strengthens memory representations and makes complex compositions available as units. The degree of entrenchment of linguistic elements in the input is invoked to explain, among other things, the emergence of constructions (unit building), differences in grammaticality/acceptability judgments, their ease of processing/retrieval, their productivity, their preemption of alternative constructions and their susceptibility to change (e.g., Divjak & Caldwell-Harris 2015, Schmid 2017a). All these are based on categorization processes in the end. If, in addition, the type frequency of a construction is high, it becomes not only entrenched but also schematized, i.e., memory representations are formed of the abstract grammatical structures in the input, while the particulars, e.g., the lexical fillings, are disregarded.

From all this we can conclude that according to the UBM the statistical properties of the input influence, via entrenchment, which grammatical forms are associated lastingly with which semantic contents and construals in categorization processes.

4 Competition or complementation between the SEH and the UBM?

The (all too brief) summaries of the SEH and the UBM above should serve to illustrate that they are located within similar, or even the same, overall linguistic endeavor(s), but have distinct explananda. Goldberg & Suttle (2010: 468) characterize the general question of this endeavor in the following way:

What is the nature of our knowledge of language? How do learners acquire generalizations such that they can produce an open-ended number of novel utterances based on a finite amount of input? Why are languages the way they are? In order to address these long-standing questions, many linguists with varying backgrounds have converged on several key insights that have given rise to a family of constructionist approaches including various versions of construction grammar. These approaches emphasize that speakers' knowledge of language consists of systematic collections of form-function pairings, or constructions, at varying levels of generality and complexity. [...] On the constructionist approach, no domain-specific, innate principles are assumed. The null hypothesis is that constructions are learned on the basis of the input, together with domain-general

processes including attentional biases, principles of cooperative communication, general processing demands, and processes of categorization.

Against this background, the SEH serves to explain the relationship between semantic (“function” in the quote)⁴ and grammatical structures (“form”), i.e., between how we perceive and conceptualize situations and events on the one hand and how we encode them grammatically on the other based on (supposed) regular correspondences between substructures of both domains. The UBM serves to explain the relationship between inputs and outputs based on the statistical properties of the former and their (supposed) effects on the cognitive processes mediating between language users’ inputs and outputs. While already leaning more to the UBM than to the SEH line of research, the quote above integrates both the SEH and the UBM foci and explananda in principle. The bridging term is that of “input” with a fitting degree of vagueness, leaving the type of medium of the input unspecified: it may comprise plain utterances, decontextualized from the setting in which they take place and from the states of affairs they are about (e.g., utterances expressing caused motion), or it may comprise the same utterances, temporally interlocked with the perception of the corresponding events and within their particular communicative contexts.

The research setting most adequate to the overall endeavor, doing justice to both the SEH and the UBH, is the investigation of (mutual and cyclic) input–output relations of the kind in which language users actually find themselves living their everyday life in their lifeworlds where their utterances take place in practical contexts and refer, at least in part, to states of affairs within these contexts. According to the SEH, the structure of utterances is associated in non-accidental ways with the structure of the states of affairs they are about. *Research practice* has it, however, that the SEH and the UBM hardly ever appear together in empirical work on CxG. Rather, the research praxis seems to focus almost exclusively on quantitatively grounded studies drawing on corpus-based analyses of decontextualized text. Frequency counts and applying statistical procedures to those counts are what makes CxG easy to work with in corpus linguistics. So far, and quite understandably from a practical point of view, there are no similarly popular research procedures dealing with the relationship between utterance structures and structures of states of affairs in the spirit of the SEH. Such procedures are not as easily implementable in the research praxis as corpus-linguistic procedures operating with decontextualized text.

To be sure, the unification of the SEH and the UBM in practice would not only be desirable, but it would also simply be appropriate to the subject matter of the overall endeavor. The reality is that usage-based CxG too often means inferring knowledge structures (or language structures; see fn. 3 on this distinction) or performance data from corpus frequencies too easily (cf. Blumenthal-Dramé 2012). Kasper (2020, [to appear]) argues that the one-sided reliance on the alleged relationship between frequency, entrenchment and knowledge/performance leads to flat explanations as long as the quantitative approach is not complemented by a qualitative one that takes the phenomenal qualities of the input (on all levels) into account. As an example, consider what Kasper (to appear) calls “the homogeneity problem”. More than 80 % of the languages in the World Atlas of Language Structures Online – many of which are genetically unrelated and without contact with each other – have the dominant order of ‘agent-like participant > patient-like

⁴ This way of rendering the construction conflates function (*valeur*) with (conceptual) content. We will use “function” here where it is common in the cognitive-functional way of talking but most of the time “function” refers to conceptual content.

participant' in monotransitive clauses, while in only about 4 % of them the dominant order is the reverse (cf. Dryer 2013).⁵

If the processing, emergence (acquisition) and structure of constructions are explained by recourse to input frequencies and the effects of entrenchment, but where input frequencies themselves are not explained without an infinite regress via inputs and outputs, typological homogeneity across (unrelated) speech communities cannot be further explained. (Kasper [to appear])

The regress mentioned in the quote arises because what is the input to someone is the output of somebody else. If we explain the output performance by recourse to the input (maybe mediated by knowledge structures), then we must be aware that the input is again someone's output, which will again be explained by their input and so on. What is explained this way is ultimately only the structural relatedness on some level of schematicity between constructions in the output and constructions in the input. This type of explanation is "flat" because it does not really lead "deep" into the structural makeup of constructions. Instead, it leads to an infinite regress that avoids the question of how constructions emerge in the first place from (relative) semantic motivation. What it obviously cannot explain is how the elements on the "formal pole" of the construction are related to those on the "functional pole", i.e., the elements or aspects of the perceived or conceived states of affairs. To accomplish this, one must move away from a purely quantitative approach and factor in semantic notions, even if highly unspecific ones like "(no) synonymy" (in accounts of statistical preemption) or "semantic coherence" (e.g. in accounts of productivity). These notions already attest a minimal sensitivity towards qualitative aspects of the elements on the functional pole in the cognitive representations of constructions. Only then do somewhat "deeper" explanations become possible, especially those of constructional changes (either as competence modifications like in acquisition or as langue changes) and variation between languages or varieties. Even "deeper" types of explanation become possible only if scene encoding proper is considered. This requires the mapping between aspects, elements or substructures of perception and conceptualization on the one hand and grammatical elements, substructures or operations on the other, allowing us to test the SEH and related hypotheses referred to in section 2.

It should be clear, however, that although the UBM produces flat explanations in practice when neglecting the qualitative account of language provided by the SEH, the SEH alone will produce a "narrow" account of linguistic knowledge or of langue structures without the UBM. After all, this has been one of the reasons for changing the focus from the SEH to the UBM in the first place. Explanations are narrow if they are valid only for one part of language (here mainly argument structure) but cannot be generalized – here because many utterance types are not scene-encoding. Furthermore, overestimating the significance of the SEH for (the knowledge of) grammar means underestimating the degree of arbitrariness of grammar, and the dynamics of (mostly) arbitrary structures are exactly what the UBM can explain best by recourse to association, schematization, categorization, and entrenchment, i.e., matters of cognitive efficiency. As a result, then, the UBM without the SEH is empty, while the SEH without the UBM is blind, so to speak. Explanations overstressing the scope of the quantitatively oriented UBM are void of experiential qualities, while those overstressing the scope of the qualitatively oriented SEH – the idea that clause structures are perceptually/conceptually motivated – are blind

⁵ The WALS feature is the order of subject, object and verb. Our count factors out the position of the verb and builds on Dryer's semantic characterization of "subject" and "object" as 'agent-like' and 'patient-like'.

to the exigencies of arbitrary structures and the effects of cognitive routinization, which put upper boundaries to the possible motivation between meaning and form.

5 “Cognitive salience”: From stopgap to a bridge between UBM and SEH?

Our characterization of the UBM as being purely quantitatively oriented and frequency-based has been a bit one-sided (and the same for the SEH the other way around). After all, Langacker, in his pioneering work on Cognitive Grammar, has long been emphasizing that a high frequency is not always necessary for the constitution of a form–function unit in a language user’s cognition. He does state that, according to the usage-based account of grammatical knowledge, “units emerge via the progressive entrenchment of configurations that recur in a sufficient number of events to be established as cognitive routines.” (Langacker 2008: 220) But in the accompanying footnote on the same page he qualifies this statement as follows:

Under some conditions a unit (e.g. a new lexical item) can be learned from a single exposure. Thus the sheer number of usage events may be less important than some measure of cumulative psychological impact (involving additional factors like cognitive salience).

This statement is remarkable for a number of reasons. First and foremost, the significance of the “cumulative psychological impact” of something in the input may literally be even more important than its frequency for its entrenchment. This stands in stark contrast to the significance for entrenched knowledge structures that is given to frequency in many corpus studies. Secondly, this statement about the significance of the “cumulative psychological impact (involving additional factors like cognitive salience)” appears in a footnote. Even though this need not reflect the importance Langacker himself gives to this factor in his theory, it is still a sign of the times (late 2000s), when the quantitative turn in cognitive-functional linguistics had led to a wealth of quantitative corpus studies in which entrenchment factors apart from frequency of use are not considered. Third, Langacker neither identifies frequency alone as the cause of entrenchment, nor does he identify either frequency or “cognitive salience” as the causes, but he reckons with both of these plus “additional factors”. However, much of the corpus-linguistic *practice* within a quantitatively turned cognitive-functional linguistics has investigated entrenchment without paying attention to “cognitive salience” (more on the notion below), and even more of it has neglected the aforementioned “additional factors”, ascribing entrenchment only to frequency and/or “cognitive salience”.

Now, what is this “cognitive salience”? For quite a long time, the notion has been a stopgap for anything that could not be reduced to frequency, resulting in a conceptual mess. It subsumes concepts from bottom-up perception, concepts from top-down categorization, concepts from different research fields and traditions, and it does not distinguish between individual linguistic experience and conventionalized constructions when ascribing “salience” to something. Under the label of “prominence”, it hid any conceivable opposition between something sticking out from something else in any conceivable modal or symbolic format, in any higher or lower cognitive activity, or even in grammatical structures of the *langue*; sometimes “salience” was attributed to the perceptual/conceptual object, sometimes to the perceptual/conceptual subject, sometimes to elements in the

grammar (in the sense of Chomsky’s E-language), and so on.⁶ Although there have been more sophisticated conceptions of salience (plus “pertinence”, see below) around for some time that in addition have been fruitfully applied empirically, cognitive-functional linguistics has only recently intensified its efforts to relieve “salience” of its status as a stopgap and disentangle what is involved (Blumenthal-Dramé et al. 2018; Schmid 2017a, 2017b; Schmid & Günther 2017), but without doing justice to the aforementioned conceptions, in which many distinctions suggested in Schmid & Günther (2017) are anticipated – among others (cf. Purschke 2011, 2014a, 2014b, 2015, 2018, and, following Purschke, Kasper (2015 [2012], 2020).⁷ What is the tidied-up notion of “salience”? According to Günther et al. (2017: 305),

salience could provisionally be defined as a multidimensional set of processes which effect that cognitively represented information (variably originating from sensory input or long-term memory) becomes selected for current processing by a particular individual at a particular point in time in a particular constellation of external (social and situational) and internal (cognitive) contexts.

Such a definition of salience remains extensionally as heterogeneous as ever, but the heterogeneity is under terminological control now (via subtypes of “salience”), which is no small accomplishment. What is still missing, unfortunately, is the reintroduction of phenomenal qualities into the UBM. “Salience” is only defined in formal terms here and is still something being selected from something else, the *criteria of selection* remaining largely unspecified.

Thus defined, “salience” cannot serve as a bridge between the UBM and the SEH, even less so if the causes of something being salient, i.e., the criteria of selection, are identified as its novelty or surprisal values and if novelty and surprisal are in turn defined by another recourse to relative frequencies (e.g., Racz 2013). Then Langacker’s conjecture that entrenchment may be caused by a single exposure to some input cannot be true. Perhaps it is indeed false. But lived experience says it happens. And there are further reasons why a formal (and even more an ultimately quantitative) definition of “salience” lacks something.

⁶ According to Langacker, something’s being salient (or “prominent”) means something sticks out in perception or conceptualization as opposed to something else, spanning quite heterogeneous oppositions, e.g., foreground vs. background in vision, profile vs. base in constructions, something real vs. something abstract in conceptualization, a prototype (or archetype) vs. less prototypical instances of a category, and much more (cf. Langacker 2008: 66 and *passim*).

⁷ Günther et al. (2017: 296) mention Purschke (2014a) in passing, stating that he belongs to those who “define salience as a primarily or even exclusively social-affective/evaluative phenomenon, and thus propose a concept of salience that is specific to sociolinguistics in many respects [...]”. This is a misrepresentation of his model, which integrates, among other things, conspicuity, evaluation and subsequent action, drawing from sociological, philosophical and cognitive-psychological (bottom-up and top-down) work on the topic. Some studies in which Purschke’s approach has been fruitfully applied are Kiesewalter (2014, 2019), Hettler (2018), Kleene (2020) and Entringer (2022). At the same time, socio- or variationist linguistics is the prime example for the significance of a usage-based conception of “salience”: salience is all about the perceptual conspicuity, evaluation, and pragmatic consequences of stimuli. What else in language is more conspicuous, subject to evaluation, and pertinent to changes in use than unexpected/novel variants that are due to social factors (in the wide sense, including variation dimensions like regional origin, education etc.) and a reflection of competence differences?

6 Salience and pertinence as basic categories of meaningfulness

6.1 Theoretical derivation

The key to single-exposure entrenchment is psychological impact, and what leads to psychological impact is the meaningfulness of something experienced, and this, in turn, ultimately refers us back to the qualities of experience. We call this phenomenon “meaningfulness” to distinguish it from the narrower term “linguistic meaning”, and it encompasses all sorts of significance, importance or relevance to the human organism (cf. Kasper 2020). In order to serve as a bridge between the quantitative approach of the UBM and the qualitative approach of the SEH, the definition of “salience” – and all the heterogeneous matters it comprises – requires reference to meaningfulness. Meaningfulness cannot meaningfully be reduced to relative quantities (including novelty). When a researcher counts something, runs statistical analyses with the numbers and in the end makes some statements about the implications of the analyses for language users’ linguistic competence (e.g., regarding entrenchment), they presuppose that what they have treated as units in counting also reflects the relevant units in language users’ experience. However, data are structurally underdetermined until criteria are given by which they can be structured: The question of what counts as a unit (from Latin *unum* ‘one’) in the input boils down to the question of the criteria by which something that is one is distinguished from something that is many or part of something else. Counting something presupposes the determinacy of what is to be counted. Without appropriate criteria, counting is arbitrary. If input quantities are relevant to linguistic competence, then the units counted in cognitive-linguistic analyses must not be arbitrarily determined but must be meaningful to human experience. Therefore, the criteria by which units can be determined in the input must be qualitative, for it is these that make experience meaningful.

In determining such criteria, the above-mentioned approaches to “salience” by Purschke and Kasper draw from constructive pragmatist philosophies that are in some respects critical of certain philosophical and methodological aspects of cognitive psychology.⁸ Their starting point is the prescientific “structures of the life-world” (Schutz/Luckmann 1974; 1989) dealing with the individual’s “knowledge of the lifeworld” (including “relevance” and “typicality”) and the “province of practice” (an action-theory), and they combine this with results from cognitive psychology (of perception, action and memory), among other things. The crucial point in Purschke’s and Kasper’s accounts is that they do not grant the cognitive psychological account a privileged status vis-à-vis the pragmatic description of the lifeworld with regard to claims of validity for scientific statements, because they view cognitive psychology (taken as a scientific practice) as province of the pragmatic structures of the lifeworld instead of the other way around. They rather start with Schutz/Luckmann (1974: 3) from the assumption that

[t]he sciences that would interpret and explain human action and thought must begin with a description of the foundational structures of what is prescientific, the reality which seems self-evident to men remaining within the natural attitude. This reality is the

⁸ The most important reference points are a critical philosophy of psychology (Hartmann 1998) and the action theory and philosophical program of Methodical Culturalism (Hartmann 1996, Hartmann & Janich 1996, 1998, Janich 2006, 2014).

everyday life-world. It is the province of reality in which man continuously participates in ways which are at once inevitable and patterned.

Such a description methodically precedes any empirical, cognitive-psychological or other, theory because the lifeworld experience is the *conditio sine qua non* of an adequate description of the explananda of the special theory of a particular scientific discipline. The identification and exposition of the cognitive-psychological explananda must not fall back behind the distinctions laid out in the lifeworld descriptions because otherwise there is the risk that the results of the special theory cannot be traced back to people's experience. This concerns "salience" directly.

For instance, in the cognitive-linguistic notion of salience the two concepts of "imposed" and "motivated thematic relevance" (Schutz/Luckmann 1974, ch. 3 B) are often conflated. The relevance (importance, significance) of a phenomenon may, on the whole, arise from two sources: on the one hand, something may grab our attention as a function of some stimulus qualities sticking out from their surroundings in relation to our perceptual apparatus (e.g. a brown fox in a green meadow); on the other hand, we may direct our attention to a stimulus quality but not to others as a function of our hierarchically structured and self-imposed goals of action (e.g. to the things we need to operate in order to make a coffee). Conflating these modes of attending deprives us (as linguists) of the possibility of adequately applying this distinction to questions of linguistic entrenchment. Purschke (2011 et seq.) and Kasper (2015 [2012], 2020) capture this qualitative and processual difference in technical terms as that between "salience" and "pertinence", respectively. Kasper (2020: 245–246; our translation, emphasis in the original) characterizes the latter as follows:

We lead our waking life by pursuing purposes most of the time. This means we are doing things to bring about or maintain particular situations. [...] The things we do to bring about these situations are act(ion)s. [...] In order to effect our bigger and smaller purposes [...] [w]e need a sufficiently distinct concept of the corresponding state of affairs. We must be able to distinguish the intended state of affairs from the present situation to assess which actions need to be executed and how they have to be executed in order to realize the intended situation. By becoming active motorically I gradually perceive my own movement and the objects that I have previously conceptualized anticipatorily. [...] While we execute the actions to produce the desired states of affairs, we confront ourselves with exactly those objects that have been part of our action plan, except that they are actually perceived now [...]. We act in the anticipated way, so that the highest-level purpose gets realized [...]. We call the objects or object features that are part of such an action plan **pertinent** in relation to a purpose.⁹

Pertinence, thus characterized, is complemented by salience: sometimes we encounter objects or object features that have not been part of our action plans:

That which has not been part of our action plans and which we have not anticipatorily conceptualized, happens to us, befalls us. Among the things happening to us are our own failed actions, the actions and the behavior of others [...] but also natural events [...]. Experiences befalling us in this way effect reactions or reflexes in us. In contrast to actions they cannot be desisted from or suspended, and they are not the result of means–ends considerations. They happen and proceed **automatically** given particular conditions. As such they belong to (mere) behavior. Autonomous bodily processes like the vegetative ones belong to them, too. [...] When something unexpected happens to me,

⁹ See also Purschke (2011: 80–87, 307–310; 2014; 2015), Kasper (2015: 137–143).

while I am acting to realize some intended situation I had anticipatorily conceptualized, this stimulus forces me toward a reaction, forces me to direct my attention to it and to deal with it so that afterwards I can further pursue my original purpose. [...] Dealing with this unexpected stimulus means for me that I have to insert it as a further low-level purpose into my original action plan. We call objects or object features that grab our attention **salient** – either per se or when they draw attention away from the elements of our current action plan. (Kasper 2020: 246–247; our translation, emphasis in the original)¹⁰

Thus, salience arises primarily from the (largely automatic, uncontrolled) workings of the organism in its animate and inanimate environment and in the service of vital functions. In contrast, pertinence arises from our cultural existence where we pursue plans with a certain autonomy and choose certain means in order to realize our purposes by acting (even if in a highly routinized manner) using means/ends rationality. Thus it appears that this account of “salience” (as salience and pertinence) has its basis in, and is dependent on, a general “pragmatic motive” which characterizes the way we lead our lives in the lifeworld. As Schutz/Luckmann (1974: 6; italics in the original) state, “our natural attitude of daily life is pervasively determined by a *pragmatic motive*. [...] I must understand my lifeworld to the degree necessary in order to be able to act in it and operate upon it.” The pragmatic motive defines the functions of “salience” in a crucial sense. In fact, it constitutes the basic conceptual scheme in relation to which salience and pertinence become the building blocks of meaningfulness. As Kasper (2020: 247; our translation) puts it,

in everyday life, in which we hardly ever sit there completely devoid of interest and not pursuing a purpose, we are converting salient stimuli into pertinent stimuli all the time. Put differently, we constantly insert that which happens to us unexpectedly into our purpose structures in order to remain capable of acting.¹¹

Against this background, the indeterminacy of our raw experiential data gets its determination by way of a twofold pragmatic grounding: from below (bottom-up) by the necessities of our organismic functioning as natural beings, and from above (top-down) by our socio-culturally molded capabilities of purposeful action.

This approach to “salience” – here reconstructed as salience plus pertinence – is a general action-theoretical approach, that is, perceptual and cognitive processes derive their meaningfulness relative to their pragmatic functions. From an action-theoretic, that is, pragmatic perspective, confrontation with someone’s linguistic utterance is only a special case of confrontation with eventualities in general (used here as a cover term for situations, events, states, processes and activities). Salience and pertinence as categories of meaningfulness can be used to describe the meaningfulness of linguistic and non-linguistic events alike.¹²

¹⁰ See also Kasper (2015: 127–129), pointing out that salience is a relational matter between features of an organism’s surrounding and the perceptual makeup of the organism.

¹¹ In fact, even the absence of an expected (pertinent) stimulus may be salient. And even an expected (pertinent) stimulus may be salient when encountered because it may not fit expectations in all respects.

¹² For cognitive-functional linguistics, such an approach has the added value of theorizing linguistic competence and the performance from which it is derived, using unified concepts and in the larger context of their practical-lifeworld embeddedness. Behind this is the conviction that linguistic competence cannot be understood independently of the totality of human world relations. Thus, the approach is fully in line with Geeraerts’ (2006) proclaimed program of recontextualizing language competence in linguistic theorizing, replacing its decontextualization in the framework of Generative Grammar.

Before we can present two concrete use cases of salience and pertinence, an important clarification is necessary. Since we usually already have purposes in every situation and therefore always have certain stimulus expectations (pertinence), everything unexpected (salience) is to be seen relative to it. Now, one and the same stimulus in the same situation can be pertinent and salient at different “description layers” of the situation. An example: A person expresses to me in a situation *Yesterday yes, today no*. This utterance can be pertinent or salient on different levels of my expectations determined by hierarchical purpose structures.

- Did I expect *anyone's activity at all* in the present situation (Alternative: No one interferes with what I am doing)?
 - Did I expect *an action of a certain person* in the present situation (Alternative: The person does nothing)?
 - Did I expect a *linguistic action* in the situation (Alternative: She is acting non-linguistically)?
 - With a linguistic action *that has certain formal features* (Alternative: other formal features)?
 - With a linguistic action with certain formal features *that has a certain propositional content* (alternative: a different content)?

In the series of these questions the structure of our expectations, our expectancy level so to speak, becomes more and more specific. If all questions except the last one are answered with *yes* and only the last one with *no*, then the utterance of the person would be semantically salient, i.e. unexpected and surprising for me, while it would correspond to my expectations on the other, outer, layers. If the answer to the first question were already *no*, the very fact that someone does something in my perceptual field would be salient – salient to the highest possible degree, so to speak. In this case, salience is most bottom-up, i.e., highly context-insensitive and due to the largely automatic, uncontrolled working of the organism in the service of vital functions (see characterization above). At the more interior layers of the situation, where we grasp it as more specific, what is salient becomes increasingly context-sensitive and top-down. On this layer of the situation, much of what holds the potential to be salient and would in fact be salient on layers further out is already integrated into our horizon of expectations. We are attuned to it, then (see Figure 1).¹³

¹³ This systematically forms the transition point to an action-theoretic notion of attitude (cf. Purschke 2014b, 2015, 2018).

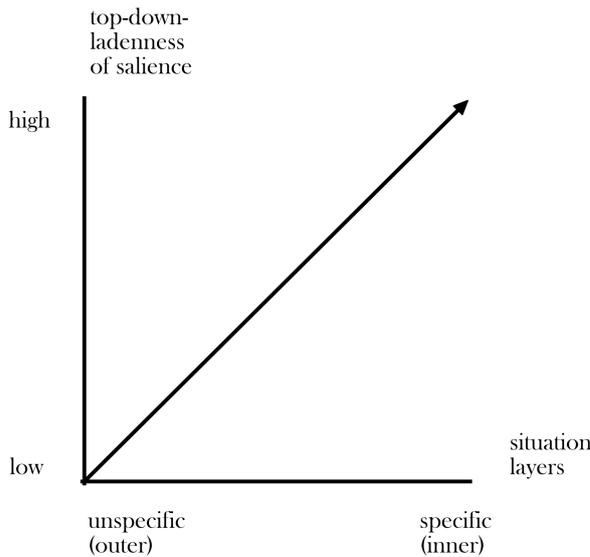


Fig. 1: Top-down-ladenness of salience as a function of the specificity of the situation layers (stylized illustration)

6.2 Two example scenarios

In the following, we will briefly discuss two scenarios to demonstrate the interplay of salience and pertinence in relation to different kinds of interactions and situation layers. The first example gives an illustration of a typical case from variationist linguistics where salience and pertinence interlock on different situation layers and lead to a competence change via entrenchment following a single exposure. Even if stylized, the scenario illustrates a quite typical case of interaction between speakers with competence differences due to different sociolinguistic backgrounds.¹⁴

Imagine a meeting between A, a speaker of Standard German, with no dialect competence, and B, a Westphalian dialect speaker who also has command of Standard German. A has an ongoing plan of action for his day, he wants to marry his bride – *Braut* /braut/ in Standard German – later that day. B, on the other hand, is working in a bakery shop, pursuing the current purpose of baking bread for the wedding. A and B meet outside the bakery shop, when A is looking for his bride. B comes out of the store, she looks worried at A and says /dat braut is swat brennt/ ‘The bread is burned black’ in her local dialect, and it contains the word /braut/ ‘bread’, which is homophonous with Standard German ‘bride’. A suddenly finds himself in a situation that requires a series of considerations, all of which include the processing of salient and pertinent aspects of B’s utterance.

To begin with, given that A has no command of the local dialect, hence does not expect to be confronted with dialectal speech, the form of the utterance is salient for him, it is conspicuous and unexpected in relation to A’s horizon of expectations. However, being addressed by B, he needs to deal with the utterance to be capable of acting appropriately. Within the salient utterance, A detects the word /braut/, which is salient within the context of the utterance – it is the only word A “understands” directly – and which becomes pertinent against his current plan of action. Consequently, A tries to process the entire utterance based on his knowledge of Standard German vocalism, and might arrive at something like /die braut ist schwarz gebrannt/ ‘the bride is burned black’, which in

¹⁴ Cases like this one have been extensively studied in the context of the “language dynamics approach” (cf. Schmid 2005, Schmidt/Herrgen 2011).

return renders the entire utterance highly pertinent for A, as it might jeopardize his plan of action.

Regarding the cognitive processing of the utterance and its parts, there are a couple of considerations to be made that A must assess to act appropriately in this situation (see Purschke 2018 for a discussion) and which relate both to the global (dialect utterance) and local (word /braut/) salience structures. First, A needs to evaluate if the utterance and its parts are pragmatically acceptable for him, i.e., if they are comprehensible against his linguistic competence and the context of interaction. Next, A needs to establish an idea of whether the salient utterance is significant in relation to the situation and A's current plan of action, i.e., he needs to decide if the utterance containing the word [braut] is decisive for his plan of action. At this point, A's cognitive activities regarding salience are already located in a rather specific situation layer. Registering that [braut] is perceptually conspicuous with respect to its semantic context takes place at an expectancy level at which A takes for granted that he is dealing with a linguistic event that has certain formal features and is embedded in an interactional frame in which B passes on relevant information to A. In any case, it forces A to action, because if he relates /braut/ to the only word he has stored in his Standard German lexicon, that leads to a totally different meaning of the sentence, and without a helping context like a bakery, A might conclude that his bride is gone now. In consequence, the word /braut/ in the B's utterance is (on this particular top-down-laden expectation layer) not only salient, it also becomes pertinent to A, and with it the entire utterance, because not understanding what the girl was saying hinders him from acting appropriately. And it might influence his plan of action for the wedding day. So, what happens next? A may ask B what she meant by /braut/, which may lead to a modification of A's knowledge: he learns a new word. And this naturally affects the course of the interaction. The next time somebody mentions /braut/ in a Westphalian context, A will know that he or she might be referring to bread, not to bride. The main reason why in this context A can entrench new knowledge based on one single interaction lies in the particular combination of his current plan of action (marrying a bride), situational expectations (his pragmatic motive renders anything related to the concept of bride more pertinent) and their influence by stimuli that are not expected or cannot easily be processed (the mismatch in linguistic competence between A and B).

Our second example involves salience in the context of scene encoding and is located at an outer situation layer. In a historical corpus study on (early) English and (early and modern standard and non-standard) German Kasper (2020) deals with subject–object and (indirect) object–(direct) object ambiguities resulting from syncretism in case and agreement morphology and from non-syntacticized phrase orders of the kind in (1).

- (1) *Wan ein gût werc hât si geworcht*
 for DET good work.NOM/ACC have.3SG she.NOM/ACC work.PTCP

an mir.
 on me.

Reading (a): 'because she has done a good work for me.'

Reading (b): 'because a good work has done her for me.'

Matthew 26, 10; Middle High German; Bechstein (1867)

Kasper asks how interpreters may understand such ambiguous clauses correctly, because that is what they actually do in everyday language use. Kasper shows that such ambiguities can be successfully resolved strictly on the clause level without resorting to “context” and even without resorting to the selectional restrictions imposed by lexical verbs, namely by combining animacy and phrase order information: If confronted with a morphologically and syntactically ambiguous clause, interpreters may assume that the NP with the more animate participant is the subject (i.e., more specifically, the proto-agent) in subject–object ambiguities and the indirect object (i.e., proto-recipient) in object–object ambiguities; if both participants are equal in animacy, interpreters may assume that the participant mentioned earlier in the clause is the subject (proto-agent) or the indirect object (proto-recipient), respectively. Neurolinguistic studies indicate that people do in fact use these features in online comprehension (Bornkessel-Schlesewsky/Schlesewsky 2009b).

It is argued that the interpretive success in relying on these information types – animacy and (non-syntacticized) phrase order – in language comprehension cannot be attributed to relative frequencies of the corresponding form–meaning pairings in the linguistic input, but that interpreters’ successful associations between form and meaning must be explained by recourse to the event participants’ salient features in the perceived or conceptualized events, namely their relative degrees of animacy and the temporal order in how the event is perceived or conceptualized. In particular, higher animacy and being uttered first are – very much in the spirit of the SEH – salient semiotic indexes of an object’s role as an agent, or causer, in the expressed non-linguistic event on the outermost situation layer (cf. Kasper 2015 [2012]). As such, the special role of that agent or causer object in language comprehension is a direct reflection of its being salient in non-linguistic perception (cf. Kasper 2020, ch. 4 for attempt at explanation). And because the clauses are grammatically ambiguous, these salient features “shine through” and may be utilized in interpretation, whereas they would be overridden in interpretation, if there were distinctive case or agreement information or a syntacticized phrase order. The intricate relationship between semantic (animacy, temporal order) and formal (case and agreement morphology, syntacticized phrase order) features of ambiguous and unambiguous clauses is modelled using the concepts of salience and pertinence on different layers of specificity.

The intricacies of the relationship between both salience and pertinence and its anthropological embedding cannot be discussed here in greater detail (but see Kasper 2020, ch. 4). Anyway, the main benefits of such a broad conception of “salience” as ‘salience and pertinence under the pragmatic motive’ should be obvious: it is its general applicability to human–environment encounters and the fact that it may serve as a bridge between the two lines of research represented by the SEH and the UBM.

7 Salience and pertinence as a bridge between the SEH and the UBM

How can the approach to ‘salience and pertinence under the pragmatic motive’ serve as a bridge between the quantitatively oriented research in the context of the UBM and the qualitatively oriented research in the context of the SEH? Salient and pertinent stimuli are meaningful. Salient stimuli automatically draw our attention to them as a function of their features and the biological makeup of our senses. They ultimately serve vital functions (such as the organism’s well-being), but they become increasingly top-down-laden in more specific situation layers. Pertinent stimuli are those we direct our attention to – either

with full awareness or routinely¹⁵ – because they have a functional role in our course of action. They are fundamentally culturally and socially shaped. As such they are associated with relevance criteria, attitudes, different types of motivations, stereotypes and so on (cf. Purschke 2014a, 2015).

The significance of salience and pertinence to the SEH is straightforward. The basis of the SEH is “scene encoding”, of course. However, “scenes” are not sufficiently structured by themselves. If they were, what happens in an organism’s environment and affects its sense organs should be the “same” for different organisms. It is not, of course. Every species has its own environment (cf. Uexküll 1926, 2010). When it comes to humans and, say, visual perception, we can in fact describe perception as similarly structured on a certain (low) perceptual level. Eventualities get structured in terms of figure–ground configurations. There are salient stimuli that stick out from their perceptual contexts as a function of their features in relation to our perceptual apparatus. This is what the abovementioned study by Kaper (2023) shows with respect to the features of animacy and order of occurrence. But this is by far not all scene encoding is about. If it were, we would encode any eventuality on that same (low) perceptual level. We don’t. We may say *Alex is preparing coffee*, although what happens on the low perceptual level is this: a hand is moving to a cup; then the hand and the cup are moving together to a coffee dispenser; then the cup is standing there; then the hand moves away and toward a water tank; then the hand and the water tank move away from the coffee dispenser and toward the faucet etc. There are no definite low-level perceptual correlates of the boundaries of the event of Alex preparing coffee, but *Alex is preparing coffee* binds them together all the same. This requires knowledge of the action schema of making coffee which gets its identity only via culturally and individually varying criteria of pertinence operating on top of the low perceptual boundaries (cf. Kasper 2015 [2012]: 280–309). In other words, there are no sufficient criteria on the level where salience operates for the bounding of eventualities. This does not only concern eventualities. Whether we identify the cup thing as a thing, as a container, as a mug for liquids, or as something that can be used together with a hardcover book as an instrument for catching a wasp indoors cannot be settled on the low-level perceptual (salience) either, but on the high-level conceptual (pertinence) level. It depends on current purposes. This has huge consequences for what it means to “know” the meanings on the “functional” pole of argument structure constructions. The formal side may be identical on a schematic level, say [NP_{NOM} V NP_{ACC}]. What is on the “function” side may range from simple (‘Alex lifting a mug’) via complex (‘Alex preparing coffee’) to extremely complex (‘Russia privatizing the Soviet industry’) eventualities that require different cognitive operations in comprehension. The message is this: Together, salience and pertinence, as the basic categories of meaningfulness, provide the criteria for categorization, association, and schematization activities in cognition. Whether some perceptual input is categorized as ‘Alex preparing coffee’ or as ‘something happening’ or as a sequence of low-level figure–ground configurations cannot be determined by reference to just past input quantities. These quantities do not provide sufficient criteria

- for determining what in the input is to be associated with what else,
- for determining what in the input is to be categorized as what,

¹⁵ We distinguish automatic and routinized activities: Automatic ones start whenever the organism is confronted with a particular stimulus configuration, and they run through until the end, if not stopped externally. They are instances of (mere) behavior. Routinized activities are originally act(ion)s that thanks to frequent successful repetition need not be executed attentively any more. They can be interrupted and cancelled internally, i.e., by the organism, if necessary.

- for determining what is to be abstracted (literally ‘drawn away’) and what is not, i.e., which features or elements of a phenomenon are “retained” across repeated instances, and which are disregarded.

The UBM again is all about association, categorization, schematization, and entrenchment. These processes, operating on the basis of quantities, if they are not to be arbitrary, need reference to salience- and pertinence-related processes, whose basis is meaningfulness. In this way the concept of meaningfulness, constituted by salience and pertinence under the pragmatic motive, may function as a bridge between the SEH and the UBM.

8 Conclusion

The discussion above should demonstrate that there is something important missing from the formulation of the SEH: an account of what “relevant” means in “humanly relevant scenes” and what “basic” means with respect to “event types that are basic to human experience” (cf. Kasper 2015: 278–279). We have argued that salience and pertinence can provide the answers to these questions.

Summing up, despite the recent popularity of the UBM in the corpus linguistic research praxis the SEH needs to be revived. Within the overall cognitive-functional linguistic endeavor, the explanatory potentials of the UBM and SEH need to complement each other to be successful. But because of their conceptual disconnection they need to be bridged. The notion of “salience”, employed primarily in the context of the UBM, lends itself to becoming that bridge, since one of the central mechanisms in cognitive-functional linguistics, entrenchment, is supposed to depend on both the quantitative (frequency) and the qualitative (“salience”) properties of the language user’s input. To achieve this status, “salience” has, firstly, to be grounded in a qualitative account of meaningfulness, and, secondly, to be connected to what is called “basic to human experience” and “humanly relevant” in the formulation of the SEH. Drawing on pragmatist work on the structures of the lifeworld, we tried to reconstruct “salience” as ‘salience and pertinence under the pragmatic motive’ and attempted to demonstrate how these concepts may serve as the basic categories upon which meaningfulness rests, thereby adumbrating what “basic to human experience” and “humanly relevant” may mean. The association, categorization, and schematization processes of the UBM need to refer to meaningfulness to avoid flat (if not wrong) explanations. The criteria that determine on which units these processes work are provided by salience and pertinence. They are used to decide what to count in frequency analyses in the first place.

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