



Articles

Talking across the interdisciplinary aisle: A guide for legal and corpus-linguistic scholars and practitioners

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ABSTRACT

In this paper, we discuss a variety of misunderstandings that have arisen – and still linger – in the field of Law and Corpus Linguistics (LCL). Many have to do with the interdisciplinary nature of legal scholarship and practice on the one hand and corpus linguistics (CL) on the other. Our goals are to address these misunderstandings to explicate them, illuminate the assumptions that co-motivated them in the first place, and provide advice as to how to discuss, maybe refute, and avoid them moving forward, especially given the progress made to-date. In order to illustrate our discussion, we have separated the critiques into two major stages in the collaborative process – (i) a legal stage and (ii) a corpus linguistics stage. In stage (i), we address issues such as the desire to involve a corpus linguist, the question of whether the use of CL outsources a judicial task, and the role CL plays in legal theories of interpretation. In stage (ii), we discuss common critiques of CL applications to legal interpretation such as the claim that the method is inherently subjective, the potential arbitrariness of corpus compilation and selection, and the variable role that context plays in such applications. The final section provides our set of recommendations connecting the two stages to allow for the iterative fine-tuning process we think is required for successful collaboration in academic and applied legal settings; we conclude with our view on who should do corpus linguistics in legal contexts, hopefully facilitating further talk across the interdisciplinary aisle.

1. Introduction

Traditionally, courts have used a variety of tools to determine the meaning of words and phrases in statutes, such as legislative history, judicial intuition or introspection, dictionaries, etymologies, and canons of interpretation (see, e.g., Mouritsen, 2010; Solan, 2010; Gries et al., 2020). Recently, some judges and legal practitioners have started adding a new tool to this interpretive tool box: corpus linguistics. Linguists and legal scholars and practitioners involved in what has been dubbed the “Legal Corpus Linguistics” or “Law and Corpus Linguistics” movement (see, e.g., Tobia, 2020; Lee and Mouritsen, 2021, respectively) frequently describe landmark cases where justices have turned to sources of big data such as newspaper archives, Google, and the corpora of Contemporary American English (COCA) or Historical American English (COHA) to aid in the interpretation of the ordinary meaning of words in statutes. (See, e.g., the investigation of “carry” a weapon in *Muscarello v. United States* (1998), “harbor” an illegal alien in *United*

States v. Costello (2012), and “discharge” a weapon in *State v. Rasabout* (2015), respectively.¹) Alongside these frequently cited cases are key publications challenging some of the existing interpretive methods and promoting the use of CL as an interpretive tool (see, e.g., Mouritsen, 2010; Lee and Mouritsen, 2018). For example, Mouritsen (2010:1970) stated that “the corpus method removes the determination of ordinary meaning from the black box of the judge’s mental impression and renders the discussion of ordinary meaning one of tangible and quantifiable reality.”

During the past handful of years, legal and linguistic scholars have also been publishing suggestions for best practices in integrating CL into statutory interpretation. For example, Solan & Gales (2017) presented four preliminary criteria for the efficacious use of CL in this process. These include:

- Ordinary usage must be determined to be the legal standard for the case;

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¹ Also of note is the lesser cited, but earlier use of COCA to examine the use of “custody” in relation to adoption in *re Baby E.Z.* (2011). We thank Hanjo Hamann for this reminder.

- A definition of what makes ordinary meaning ordinary;
- A determination of the appropriate search; and
- A determination of whether the absence of a meaning from a corpus reflects a linguistic issue or the fact that texts in the corpus simply did not discuss certain things.

However, despite these and related suggestions (see, e.g., [Tobia, 2021](#); [Babcock Woods, 2022](#); [Hashimoto and Heilpern, 2023](#), for additional recommendations), a variety of misunderstandings about the use of CL as an interpretive tool continue to linger in the LCL and broader legal and linguistic communities.² Many critiques have to do with the interdisciplinary nature of legal scholarship and practice, but many also refer to linguistics in general and CL in particular. The goals of this paper are to address some of these misunderstandings from a CL perspective in order to explicate them, illuminate assumptions that co-motivated them, and provide concrete advice as to how to discuss, maybe refute, and avoid them moving forward. In order to illustrate our discussion, we have separated the critiques into two major (frequently overlapping) stages in the collaborative LCL process – (i) a legal stage and (ii) a (corpus) linguistics stage. For stage (i), we address fundamental legal issues such as a) the inherent difficulties in performing corpus analyses and if such analyses outsource a judicial task, and b) what role CL plays in current interpretive theories. For stage (ii), we discuss three closely-related criticisms arising from the notion of ‘operationalization’ and the challenges they pose to interdisciplinary collaboration, including a) general critiques about the “subjectiveness” of CL, b) questions about corpus choice and representativeness, and c) how different corpus methods address matters of ordinary or specialized meaning, and context, in general.

In the final section of this paper, we provide a set of recommendations connecting the two stages to allow for the iterative fine-tuning process we think is required for successful collaboration in both academic and applied legal settings. Our main goal is to provide a clear pathway through these lingering misunderstandings from a CL perspective that will hopefully facilitate further talk across the interdisciplinary aisle.

2. The legal stage

Prior to the linguistics stage, two interrelated decisions need to be made at the legal stage of the process, which raise questions regarding the use of expert linguists and the role played by CL in interpretive theories of statutory interpretation.

2.1. Outsources a judicial task

Much of the discussion in LCL has focused on this single point – whether a linguist should be brought into the process of statutory interpretation at all. While we will return to our perspective on this important question in more detail later, we here outline and then

² We recognize that the LCL community has been developing over the past decade and thank the anonymous reviewers for suggesting that this development may be separable into two distinct phases: LCL1 (which was primarily led by legal scholars and practitioners during 2010-2019) and LCL2 (which has seen more collaborative works between linguists and legal scholars/practitioners during 2017 to the present). However, since the recent development is still very much in progress and since this division of LCL into these specific phases is not uncontroversial, our aim remains to address the lingering misunderstandings that still occur in print, at conferences, and in practice in order to promote even more positive outcomes and a broader understanding of the field moving forward. We have therefore incorporated a range of critiques about the use of CL in statutory interpretation from a variety of published sources (e.g., law reviews, scholarly journals) and authors (e.g., judges, lawyers, legal scholars, linguistic scholars), all of which are publically available for those learning about, and potentially affected by, their content.

address some of the main critiques about integrating CL and its methods into this process.

[Bush and Jeffries \(2022\)](#), while generally supportive of CL as “a valuable tool in the search for meaning” (p. 523), highlight several concerns about integrating (corpus) linguistic tools into this process. They note that “few judges will be able to employ [these tools] of their own accord” due to the lengthy time commitment required to perform the process (p. 552) and may, therefore, need to call upon academics to perform the corpus analyses; we couldn’t agree more with this assessment (see [Section 4](#) below). However, they state that this further raises issues of time commitment, since judges will then “have to check those interested parties’ work to be sure that their interests in a case’s outcome – consciously or unconsciously – did not lead them to dress up advocacy with the scientific gloss of [CL].” This possibility “presents serious risks for biased analyses misleading courts” as they state that the method is inherently subjective (p. 552). Thus, it is claimed that “at best corpus-based research may constitute a time-consuming diversion; at worst, it risks producing misguided judicial outcomes that will prove resistant to review” ([Ehrett, 2019:61](#)).³

[Hessick \(2017\)](#) has also challenged corpus linguists’ dedication to empiricism as juxtaposed to the legal tradition of relying on judicial intuition, stating that “[CL] minimizes judicial discretion” (1511). That is, by relying on quantitative frequency data, corpus linguists “[seek] to prevent judges from relying on their own judgment in statutory interpretation” which is “a rejection of the judicial power to interpret the laws” (p. 1512). [Ehrett \(2019\)](#) similarly argues “against ‘judicializing’ [CL]” because all texts “are not equally authoritative and valuable” as guides to ordinary meaning. Because corpus analysis is meant to find patterns of meaning in large quantities of data, it “elide[s] the ability of judges to make fine-grained distinctions” about meaning inherent in individual texts (pp. 61–62). [Bernstein \(2018\)](#) summarizes these points by stating that CL “outsourc[es] interpretation,” giving “the impression of certainty” but “actually undermin[ing]... the discretion we thrust on [judges]” (p. 439).

2.2. Interpretive theories vs. corpus linguistics

While similar in argument to the first critique, the second focuses on the appropriateness of CL as a theory and/or method in statutory interpretation. [Hessick \(2017\)](#), [Bernstein \(2018, 2021\)](#), [Tobia \(2020\)](#), and others have made the claim that CL has largely been a textualist endeavor to identify ordinary meaning in legal texts. For example, Hessick calls CL “a new interpretive theory” that “bills itself as providing an answer to a question that many current interpretive theories ask: What is the ‘plain’ or ‘ordinary’ meaning of the statutory text” (2017:1503, 1505)?

When used in this manner, legal scholars and practitioners have variously stated that CL is an empirical query that tells us that the ordinary meaning question “ought to be answered by how frequently a term is used in a particular way” ([Hessick, 2017:1506](#)); that legal scholars using CL “search corpora for a given word or phrase to ascertain the frequency with which it is used in a given manner” ([Macleod, 2019:988](#)); and that “where an ambiguous term retains two plausible meanings, the ordinary meaning of the term (and the one that ought to control) is the more frequently used meaning of the term” ([Herenstein, 2017:112-113](#)). These claims have come to be referred to as the “frequency fallacy” ([Klapper, 2019](#)), which “posits that corpus advocates merely use linguistic corpora to determine the most commonly used sense of a word, and then label that the ordinary meaning” ([Tobia, 2020](#), as cited in [Lee and Mouritsen, 2021:341](#)). However, despite the fact that these statements have been refuted (e.g., [Herenstein, 2017](#); [Lee and Mouritsen, 2021](#); see also below), the strong association between CL and

³ Note that the paper was called “Against *corpus linguistics*” (rather than “Against corpus linguistics for legal interpretation”).

investigations of ordinary meaning have contributed to the ongoing confusion about the broad nature of how CL can be applied to a range of statutory questions and about the variety of CL tools that can be used to provide insights into meaning in a range of corpora and contexts.

This issue is raised, for example, by [Bush and Jeffries \(2022:523\)](#) who query: “‘What would the Founders do?’ That is a worthwhile question for CL to ask as its methodology matures and foundational corpora like the Corpus of Founding-Era American English (COFEA) are used more widely. What sources would they consult? What did they read? Answering those questions will make CL a more valuable tool to answer the foundational question in constitutional interpretation: what did We the People agree to in 1788?” And [Bernstein \(2021\)](#) echoes this interpretive critique, stating that while CL “provides a sophisticated way to analyze large data sets of language use[,] [...] LCL] cannot deliver on th[e] promise [of giving empirical grounding to claims about ordinary language] because it ignores the crucial contexts in which legal language is produced, interpreted, and deployed” (p. 1397).

2.3. Response

To begin our response to these critiques, it is important to address the misconception about whether CL outsources a judicial task – specifically, this relates to the degree to which actual linguists have been involved in this process. While corpus linguistics is at the centerpoint of these debates, what is frequently absent are the corpus linguists. When corpus linguists are included in the discussion, it has been stated that they are “assum[ing] that the personal judgment of judges is necessarily arbitrary” ([Hessick, 2017:1517](#)); “seeking to prevent judges from relying on their own judgment in statutory interpretation” ([Hessick, 2017:1511](#)); and “dress[ing] up advocacy with the scientific gloss of [CL]” ([Bush and Jeffries, 2022:552](#)). However, beyond these occasional mentions, corpus linguists are rarely mentioned in the literature at all. This raises the question: who is performing CL work?

[Bernstein \(2021\)](#) addresses this issue by distinguishing, within the LCL community, non-linguists and linguists who are doing actual CL work: “[LCL ...] has largely differed from [CL] in the field of linguistics in ways that are important but unrecognized in the [LCL] field. Legal corpus analysis has mostly looked for frequency and collocation data, not for the kind of larger-scale patterning of linguistic interactions that characterizes corpus linguistics’ most exciting findings” (p. 1412). If linguists are to be involved in this field (a point we revisit in the conclusion), it will be at the behest of a lawyer or judge seeking a more in-depth analysis of meaning in a particular community of practice or in contributions to amicus briefs, whereby interested parties who have relevant expertise can provide further information about the statutory issue at hand. The ultimate interpretive decisions unquestionably remain at the discretion of the judge.

To further address critiques about challenges to judicial discretion and the improper use of CL in various theories of interpretation, it is useful to revisit the words of the legal and linguistic scholars themselves. To sum up the role of CL in judicial interpretation, [Lee and Mouritsen \(2021:310\)](#) accurately state that “the corpus linguistics project has never been about eliminating judicial discretion. The only discretion we wish to limit is the discretion to make claims about language usage based on the single data point of a judge’s “take my word for it” assurance – an assurance unsupported by (and at times directly contradicted by) evidence from a tool specifically designed to measure language usage.” [Babcock Woods \(2022:226\)](#) similarly emphasizes that CL does not “function as a theory of legal interpretation, despite its deep connections to textualism. It cannot tell a judge what to do with language usage evidence. But it can produce language evidence the courts otherwise must speculate over, broaden the range of linguistic context, and check a judge’s motivated reasoning.” Clearly, judges provide more than “take my word for it” analyses; however, as many problems have been pointed out about some of the traditional methods of interpretation that support “a judge’s motivated reasoning” (see, e.g., [Mouritsen’s \(2010\)](#)

discussion on the infallibility of dictionary evidence), we believe that having another empirical, scientifically-valid – when performed appropriately – data point may be helpful.

To return to the claim that CL has a strong tie to textualism and investigations of ordinary meaning: while this may primarily be how the method has been applied, [Solan and Gales \(2017\)](#) make it clear in their criteria for efficacious use of CL in statutory interpretation that the first question should always be, is ordinary meaning the best interpretive theory? Sometimes the answer is ‘yes,’ sometimes it is ‘no.’ But ultimately, this is a legal decision, not a linguistic one. [Gries and Slocum \(2017\)](#) also emphasize this point: “the proper standard for designating some permissible meaning as the ordinary meaning” of a statutory term is a question for the courts, not one that corpus linguists – or corpus linguistics – can answer (p. 1470).

If ordinary meaning is deemed to be an appropriate method of interpretation, [Lee and Mouritsen \(2021:297\)](#) state that “corpus linguistic analysis can promote greater transparency in the assessment of ordinary meaning” and “[t]he evidence-based methodology of corpus linguistic analysis can help force a judge to show her work.” While this is true, we strongly recommend a cautious approach, since, if analyses are performed by justices, there is no check, no peer review, nothing to demonstrate that the analysis has been performed with reliability and validity according to scientific standards. For example, [Gries et al. \(2022\)](#) show how a ‘corpus analysis’ of the U.S. District Court for the Middle District of Florida (*Health Freedom Defense Fund, Inc. v. Biden*) runs afoul of nearly every single (corpus-)linguistic or scientific standard one might expect in a linguistic analysis, yet it will now be referenced as an application of LCL. Within our existing adversarial legal system, the closest we can replicate the function of peer review is when two expert witnesses are able to review analyses performed by the other side’s expert. [Lee and Mouritsen \(2021:308, note 139\)](#) support this practice stating that “[o]ur opinions are better when adversary briefing is complete and in-depth.”

Finally, when considering the range of theories of interpretation, CL is not intended to take the role played by judicial decision making regardless of whether that judge adopts a textualist, purposivist, or other approach. Much like genetics, ballistics, or other sciences relied on in the courtroom, CL does not have a legal agenda, only a social-scientific one – specifically, to apply its methods with reliability and validity to the research question at hand. When applied beyond instances of ordinary meaning, which is what most of this article is concerned with, [Bernstein \(2021\)](#) proposes that CL “could help clarify what sets legal language apart. Instead of non-comparisons that ask how legal terms appear in non-legal language, legal corpus researchers could do actual comparisons, like actual linguists. This could help legal interpreters understand how given terms are used in different settings; elaborate on how a term usually appears in legal contexts; and address the contingencies in determining whether a term is ‘ordinary’ or a ‘legal term of art’” (pp. 1448f.). And indeed, such work is already being performed as exemplified in [Gales & Solan’s \(2020\)](#) investigation of the meaning of “labor or service of any kind” in the historic case *Church of the Holy Trinity v. United States* (1892). In this study, they explored whether the phrase was a legal term of art in a specialized corpus of statutory language, if that meaning had changed over time, and whether the ordinary meaning of the term “labor” (which was what the court focused on), had a different meaning in more general reference corpora. Using the notion of double-dissociation (the contrast between a semasiological and an onomasiological approach), they were able to demonstrate additional layers of meaning that had not been previously considered by the court, but may have been useful in reaching their decision. To refer back to the critics, corpus linguists do not aim to interfere with the judicial process, but when given a research question addressing an interpretive task, we can often supply helpful information.

We next turn to some critiques that have been made at the linguistic stage of the process that largely focus on the operationalization and application of corpus linguistic methods.

3. The corpus-linguistic stage

Points of critique against LCL that apply to the corpus-linguistic stage can be grouped into several different clusters. Some of these have to do with more generic aspects of how LCL critics view corpus-linguistic methods, others more specifically target how critics view particular corpus-linguistic operationalizations of the relevant legal questions (which have mostly, but not always, been about ‘ordinary public meaning’).

3.1. General corpus linguistics

Very general critiques have involved claims that CL is subjective, unscientific, and not determinative. One of the strongest critiques involving subjectivity is from Zoldan (2019), who criticizes CL methods for being subjective in terms of which corpus is investigated, but also the required methodological steps (e.g., the choice of search parameters, see p. 419) and the annotation/analysis of relevant results both in terms of weeding out what linguists would call ‘false hits’ (i.e., matches that fit what was searched for, but that are not relevant to the question at hand, as when uses of *vehicle* involving the meaning of ‘vehicles of contagion’ are discarded), and what the remaining true hits reveal. Similarly, Bernstein (2021) comments that “[w]ith its technical, seemingly objective tools and its clear, decisive answers, [LCL] can provide a tempting [but “false”] certainty for judges in search of right answers and non-discretionary decisions” (p. 1429).

3.2. Corpus compilation and selection

Another very general point of critique has to do with the compilation and selection of corpora. Ehrett (2019) and Zoldan (2019) misunderstand these aspects of both CL in particular and the social sciences in general. Zoldan argues that “[t]he choice of corpus is subjective because it is not constrained by any principle that suggests why one corpus rather than another should be chosen” (p. 420), plus he states LCL users “rely [...] on searches in general corpora [...]. The justification [...] rests on the assumption that the meaning of words in a general corpus is the same, in a relevant way, as the meaning of those same words in statutes” (p. 423). Ehrett (2019) similarly criticizes what he calls “parametric outsourcing, [which is the fact that] the choices made by corpus builders to add certain documents to corpora, and to set the categories within which they may be searched, are irreducibly ‘editorial’ decisions that must remain opaque to judges conducting corpus-based research” (p. 65), because “[t]here are no uniform, authoritative standards for the composition or maintenance of corpora” (p. 65). To this he adds that “[e]very corpus will suffer from certain limitations, and the choice to accept or reject such limitations is a decidedly ‘unscientific’ decision” (p. 68).

More useful are points raised by Bernstein (2018) and Zoldan (2019) when it comes to the more specific question of whether LCL should rely on general corpora (i.e., corpora that aim to represent ‘a language as a whole’) or on specialized legal, technical, administrative, etc. corpora. In that sense, this is the first of two criticisms that argue that LCL does not consider context enough, namely, by a supposed lack of pragmatic context (or register/genre), which has to do with who the intended audience is. For example, Bernstein critiques the notion that “legal corpus analysts generally seek to shed light on the language of law by analyzing corpora of speakers speaking in non-legal ways” (2021:1434f.); she further states that “it is not clear why looking to debates, statutes, and other writings by those who wrote the Constitution are valid, but looking to similar texts by those who write statutes is not” (p. 1437). Similarly, Zoldan (2019) argues that “statutory language and the language of texts found in a general corpus have different purposes, audiences, and other linguistic characteristics” (p. 426). These are valid concerns because they are important questions that ultimately touch upon the question of what a corpus is representative of. However,

as we discuss in more detail below, corpus linguists can readily address these questions since they are regularly addressed in all social sciences and the way the (corpus) linguist will answer them is actually completely dependent on the question(s) that the corpus linguist is asked by the legal practitioner requiring a corpus analysis.

3.3. Corpus-linguistic methods

Turning more specifically to methodological aspects, there are a variety of frequent points of critique. One involves the second way in which LCL has been said to not consider context. According to Bernstein (2021:1399), LCL has “hindered its own ability to yield empirically reliable results by neglecting something crucial to linguistics research: communicative context.” This view may have arisen from early LCL work using only frequencies and collocations to determine the ordinary meaning of expressions, and these are indeed methods that do not incorporate much linguistic context (maybe even just one key word in whose contexts other words are counted, as in most of Lee & Mouritsen’s (2018) section on *vehicle*). These approaches have additionally been criticized for what they actually measure. As noted above, Herenstein (2017:117) argued that “a word’s frequency will not necessarily reflect the ‘sense of a word [or] phrase that is most likely implicated in a given linguistic context,’ but [...] at least partly, reflect the prevalence or newsworthiness of the underlying phenomenon that the term denotes.” To exemplify, he proposed the following hypothetical (based on the question in the Rasabout (2015) case): “Suppose, for example, that it is more common for a person shooting a gun to fire a single bullet than an entire chamber. There would then be fewer opportunities for newspapers, magazines, journals, and talk shows [...] to invoke the term discharge in reference to multiple gunshots” (p. 117). This point is echoed by Solan & Gales (2017) in their fourth criteria for efficacious use of CL with their *blue pitta* example, a bird that will virtually never show up in any general American English corpus even though no American English speaker would ever not consider a blue pitta a bird. Bernstein (2021:1400, note 7) adds that “frequency alone does not decide most legal questions, [...] or even most linguistic ones.” However, even methods that are more contextual have been criticized. Slocum & Gries (2020:26f.), for instance, show that Lee and Mouritsen (2018)’s use and Tobia’s (2020:792) discussion of collocation do not distinguish carefully enough between frequency, association (as measured by, say, *MI*), and prototypicality, and they usually ignore corpus dispersion.

Finally, even the corpus method involving most linguistic context – concordance lines – has also not been uncontroversial in the literature. As above, even if one studies all the linguistic context in a concordance line to count how often which sense occurs, that still does not seem to insulate such counts of senses from critiques like Herenstein’s. At the same time, it is surprising to see how some critics of corpus work have discussed the ways in which corpus linguists might study concordance lines. Tobia (2020:756), for instance, claims that his experiments show that studying concordance lines is not useful to determine ordinary meaning, yet this claim is based on his simulation of concordance analysis in “*precisely* [the way] recent advocates of [LCL] recommend,” namely by having linguistically untrained people look at as few as 9 concordance lines. That is a strategy that no LCL practitioner or linguist has recommended.

The final critique we wish to clarify is from Drakeman (2020), who states that CL/“Big Data” performs at the level of flipping a coin, where “the odds of an accurate answer [...] is 50 %” (p. 83). As any social scientist will confirm, the odds of a coin producing an accurate answer are 1 – what is 50 % is the *probability* of the same.

3.4. Response

3.4.1. The response to many general points of critique

Overall, critiques of CL applications often miss the mark because

they (i) overstate what proponents of LCL aim to do and, as noted above, (ii) lump together corpus linguists and legal practitioners advocating for corpus methods as a single target of critique. The majority of the points of critique exhibit a variety of problems that, ultimately, are so inter-related that they are difficult to separate for purposes of argumentation. For the sake of organization, we have grouped them into two areas:

1. general/fundamental concerns on a ‘pre-methodological’ level, and
2. specific methodological concerns on an implementational level.

Most of the critiques of LCL at the pre-methodological level suffer from one or more of the following problems: exaggeration, a lack of knowledge, and double standards. Exaggeration refers to the fact that opponents of corpus methods overstate what proponents of corpus methods from both the legal and the linguistic side argue for. For example and as mentioned above, in spite of considerable enthusiasm for corpus methods by some LCL practitioners, as far as we can tell, no one has tried to sell CL as a “new theory of interpretation” – at least no corpus linguist has and the strongest endorsement actually seems to be [Lee and Mouritsen \(2021:298\)](#): “[CL] can help promote some needed and overdue refinements to our legal theory of interpretation.” Similarly, as far as we can tell, no one has wanted CL to take over legal interpretation from judges. No linguistic LCL practitioners and maybe only a few legal ones would endorse the claim that corpus methods for legal interpretation would eliminate any kind of researcher intervention and render judicial interpretation a completely objective, mechanistic procedure to which a judge can only accede lest they be criticized as subjective and biased. As clarified in [Section 2.3](#) above, all that was ever argued for, as we see it, was that corpus methods would offer scientifically-informed constraints on interpretation or rankings of interpretations, meaning a judge would still be able and usually required to consider all meanings of a word, phrase, expression – the corpus linguist would merely provide data that indicate which meaning, given a certain context or interpretational target, would be more or less likely. In other words, if corpora are used properly and by disinterested parties, they allow us to narrow down the range of interpretive options by data that were by definition collected in a way that did not already bias them towards a potentially favored outcome. In sum, even if corpora don’t fully represent all speaker groups, analyses done correctly are nonetheless much more representative than relying on a speech community of one (the judge).

As for a lack of knowledge, this refers to the high likelihood that many critics do not understand how empirical sciences in general and (corpus) linguistics in particular ‘work’ because (i) they criticize CL for being subjective and/or unscientific but have not provided a definition of *science* that leads to their desired yet unscientific conclusions, and (ii) they criticize CL for things that no trained corpus linguist would do but that they have been told is CL.

First, what is science? In a nutshell, a field of inquiry is scientific if it is based on the study of rigorous, controlled, and replicable analysis; if the testing of falsifiable predictions is on the basis of, typically, samples of data that represent a population of data; and if the analytical steps involved are characterized by high degrees of objectivity, reliability, and validity. This is a description that proper CL analysis meets even if many early LCL applications did not. Thus, CL, like all social sciences, includes steps that involve subjective, but ideally expert analytical decisions (and, contra Zoldan, not just arbitrary intuitions). As a hypothetical example, would anyone think their doctor would not give sound medical advice because their interpretation of an MRI is not 100% objective but involves the radiologist’s subjective, but analytically honed, expert judgment of what the MRI is showing? CL follows up such educated, scientifically-motivated decisions with peer-reviewed support for their methodologies. This is one of the aspects of CL that made it attractive in the first place: the high degree of subjectivity in some judicial opinions and the high potential for motivated reasoning of judges – the difference being that, in social sciences, such steps need to be documented and

defended, whereas in law they not always are.

But maybe the most pertinent example is the choice of corpus. Depending on the needs of a legal practitioner, a corpus linguist will need to decide what corpus to study to provide valid results for the legal practitioner’s question (see [Lee and Mouritsen \(2021:353\)](#), [Tobia, 2021](#): “Use representative and balanced corpora”). Will one need:

- a corpus of ordinary language because the target of the analysis is understood as the ordinary meaning?
- a corpus of legislative language because the target is the intended meaning?
- a corpus of technical language because the target is the technical meaning for administrative law?
- a synchronic corpus (intended to be representative of what time period – the time the statute was enacted? the time it would be read by someone whose behavior is governed by the statute? (see [Tobia, 2021](#): “Analyze texts from the relevant time”) or a diachronic corpus (supposedly representative of what time span?)?

As for double standards, this refers to the fact that, even in points of critique that could be legitimately leveled at CL, critics have adduced ‘arguments’ that, if they were consistently applied, would disqualify any expert witness testimony under the Federal Rules of Evidence, in fact any empirical science, including disciplines that are uncontroversially accepted in courtrooms throughout the world. Addressing such flaws more generally in many critics’ arguments is easy – one just needs to replace “CL methods” in their critiques by “the current status quo based on dictionaries, etymologies, etc.,” or any other empirical scientific discipline that is regularly permitted as evidence in court (e.g., genetic DNA analyses, fingerprints), or “textualism” for that matter (see [Bernstein’s \(2021:1416, n. 81–83\)](#) insightful discussion of how Justice Scalia used very different versions of textualism in different opinions), to see how many of the things they criticize LCL for applies to all previously critiqued alternatives.

First, neither the CL interpretation status quo nor fingerprint analyses come with complete objectivity and/or a complete and mechanistic determination of the results, yet we are asked to reject the former but, presumably, to continue to accept the latter. Second, the fact that genetic analysis or fingerprints narrows down the range of suspects to possibly one does not deprive a judge or jury of their constitutionally prescribed duties, yet we are asked to consider CL analyses of ordinary meaning as unacceptable while considering the latter as valuable scientific information for the fact finder. Third, neither the status quo nor, say, fingerprint analyses have zero limitations, yet we still don’t say, as per Zoldan, that results in “unscientific decisions,” etc. It seems odd to criticize representativity in CL but accept SCOTUS’s use of the Bible or Moby Dick for determining ordinary meaning in the 20th century. And yet this is an especially important point because even LCL proponents can ‘get it wrong.’ For example, [Phillips et al. \(2016\)](#) argue “[i]f one is examining a legal term of art such as ‘corruption of blood,’ then one would investigate legal documents. And if one is trying to discern the meaning of an ordinary word, such as ‘commerce,’ one would examine more quotidian usage.” From a CL perspective, we would argue that it is the nature of the term *together with* the target audience – ordinary readers? lawyers in a federal administration? – that helps narrow down the choice of corpus.

3.4.2. *The response to methodological points of critique*

Most of the critiques at the second, the methodological, level suffer from similar problems. Again it often seems as if critics of corpus methods intentionally overshoot the mark by criticizing corpus approaches with things that were never said and/or by being selective, specifically by being selective when it comes to (i) different parts of case studies and (ii) different meanings of words. For example, stating that LCL does not consider context is (see [Sections 3.2](#) and [3.3](#) for references), as a general point of critique, often wrong and undermined by the fact

that not all critics distinguish between different kinds of contexts. That being said, it is true that frequencies and collocations per se are probably less useful than has often been claimed in LCL (if only implicitly by using these methods time and again in the literature we discuss above). Yes, frequencies and collocations involve less linguistic context but they might not be useless as claimed because they are tainted by newsworthiness – as Lee and Mouritsen (2021:348) state well: “[i]mplicit in [this critique] is the notion that the average American’s understanding of the word ‘flood’ would differ meaningfully from the word’s most salient, newsworthy usage at a given time. This conclusion is possible, but not obvious.” And collocations are not useless because they are acontextual. In fact, their use is often misunderstood: Tobia (2020) states “Collocation analysis is to evaluate which words occur most often in proximity with the term assessed,” which is not true because “most often” implies that frequency is the relevant dimension of information for the study of collocations. Even Lee and Mouritsen (2018), while not describing this thoroughly, use the association measure of *MI* in their collocation results for *vehicle* (see note 185 of Lee and Mouritsen (2018)). The real reason why collocates as used right now are often useless are twofold:

- Collocates only highlight the dimensions of meaning that are relevant to a term of interest, but not the (prototypical) values that something scores on these dimensions. Many collocates of *vehicle* in the NOW corpus highlight that vehicles involve a means of propulsion (e.g., *motor*, *plug-in*, *launch*, *driving*, *driver*, etc.). However, they don’t determine what the prototypical means of propulsion is: an internal combustion engine or what some of the strongest collocates of Lee and Mouritsen (2018) - *electric* and *plug-in* - suggest, a (partially) electric motor. The collocates of *vehicle* in the NOW corpus highlight that vehicles involve a driver, but they don’t determine what the prototypical driver is, a human or as one of the strongest collocates of Lee and Mouritsen (2018) (*autonomous*) suggests, a computer.
- This approach cannot be used in any situation in which the search term is not attested in the corpus: there are no uses of “AR-15” in COFEA, for which intensional approaches to meaning are required (see Eskridge et al., 2021; Gries et al., volume).

In addition, critics often gloss over the fact that many LCL applications have involved fairly careful studies of concordance lines: Lee & Mouritsen (2018) use concordance lines in many of their case studies, Gries & Slocum (2017) address the question of the ordinary meaning of *use a gun* with concordance analyses on different levels of semantic resolution (of *use a WEAPON NOUN* and *use a CONCRETE OBJECT*), and Mouritsen (2019) uses concordance lines for the meanings of words like *anticipated* and *governable*.

Finally, we again sense a bit of a double standard. It is easy to criticize LCL for a lack of context when context is not defined well enough to distinguish linguistic, pragmatic, historical, legislative, and/or statutory context, but then this same standard should be applied to SCOTUS justices that pick Moby Dick to justify their interpretation of a term in the context of a statute passed hundreds of years later. By this we do not mean to say that the treatment of representativity or context in LCL cannot be criticized – we just did that ourselves – but it is clear that, if one wants to criticize aspects of a newly proposed method in statutory interpretation, one needs to contextualize them against the corresponding aspects of the currently predominant paradigm.

4. Discussion

Given all of the above, we have distilled our thoughts into the following set of recommendations, which follow Tobia’s (2020) excellent advice.

4.1. Recommendations to legal practitioners

It is crucially important to know what you need from your expert. This sounds simple, but as we know, communicating across disciplines can be difficult. For example, if the legal issue in the case concerns “the distribution of language usage over a particular population,” it is essential to specify the particular population and the relevant time period or genre of interest. If the question relates to ordinary meaning, there should be “a clear notion” of whose ordinary meaning you are interested in (Solan and Gales, 2017:1342). That means, you must know:

- the time period: are you interested in a synchronic analysis (past? current?) or a diachronic one (change over time)?
- the genre: are you interested in language that is technical, legislative, or some kind of ordinary meaning?
- the speech community: if the case involves ordinary meaning, whose speech community are we interested in? Is it the one at the time of the drafting of the legislation? Or is it today’s community governed by the law?
- the definition of ordinary meaning applicable to the case.

This final question may be the most difficult to answer, given the range of expressions LCL practitioners are using. There are many instances of LCL practitioners using “ordinary meaning,” but the operationalization of this term is not properly defined legally or corpus-linguistically. For example, when is the meaning of an expression *frequent*? And if we don’t know what *frequent* is, what is “attested and somewhat frequent” (Lee and Mouritsen, 2021:298)? Do LCL practitioners consider this the same as *common meaning*? What is a *possible* meaning and how does it differ from a *permissible* one in a given speech community? And what does a corpus have to show for a meaning to be “exclusive” (Lee and Mouritsen, 2018:800f.) or “obvious” (Lee and Mouritsen, 2018:798)? Is *normally understood* the same as *the colloquial sense* of an expression? Are both the same as “the most naturally understood [meaning] in context” (Lee and Mouritsen, 2021:284)? How does *ordinary* meaning differ from *public* meaning? Are any of these “the understanding of the objectively reasonable person” (Lee and Mouritsen, 2021:285)? And how does this compare to “plain meaning,” the term that Mouritsen (2019) uses?

On top of this large number of terms and phrases, which are never operationalized clearly, there is additional confusion when it comes to the more psycholinguistic notions of senses “that first come to mind” (Lee and Mouritsen, 2018:874) and *prototypical* meaning and how it relates to all of the above terms. Slocum and Gries (2020:21ff.) show that Lee and Mouritsen (2018) hedge their views on the role of frequency for prototypicality so that no definition of prototypicality is ultimately arrived at. Here is just one particular set of examples. On the one hand, Lee and Mouritsen (2018) seem to equate ordinary meaning with prototypical meaning on p. 802:

- “We present some relevant data below, concerning the frequency or prototypicality of various senses of this term” (p. 837);
- “If the corpus data reveal that most vehicles that we speak of are automobiles, or that most instances of carrying a firearm involve bearing it on your person, we may infer that those senses are more likely to be prototypical senses of the operative terms.”

Yet, later they seem to retract that very association, as when they say:

- “[i]f [our emphasis] the ordinary meaning question in Muscarello is an empirical question of frequency or prototype analysis, [...] (p. 808) – as if the whole discussion so far had not assumed exactly that;
- “frequency of occurrence may be a factor [for prototypicality]” yet “it cannot be the whole story” (2018:830, note 179) – as if they had not provided multiple pages of frequency and association data to precisely establish the ordinary meanings of *vehicle* or *interpreter*.

To start clarifying some of these questions, [Solan and Gales \(2017:1342f.\)](#), for example, suggest two possible ways to investigate what makes ordinary meaning “ordinary.”

- Ordinary Meaning 1 (“OM1”) is “a description of the circumstances in which the term is most likely to be used.”
- Ordinary Meaning 2 (“OM2”) is “a description of the circumstances in which members of a relevant speech community would express comfort in using the term to describe the circumstances. More than one meaning may be ordinary for a term under this theory.”

We believe that each of these meanings of ordinary meaning may have its place in legal analysis and the definitions have the advantage that they clearly adopt an onomasiological perspective (from the concept to be expressed (circumstances) to terms used for them) that can be quantified with corpus data. At the same time, even for those it remains unclear what the exact frequency/probability thresholds are that correspond to “most likely” and “express comfort;” this still needs further research. All of this still points to the fact that “ironically, we have no ordinary meaning of ‘ordinary meaning’” ([Lee and Mouritsen, 2018:798](#)). Thus, it is important to clearly communicate this information to the linguist (or ask questions about this information). Without that information, the linguist cannot begin to think about operationalization, or most importantly, corpus choice and corpus methods, in order to best support the legal process of judicial decision-making.

4.2. Recommendations to (corpus) linguists

The linguist, on the other hand, also has a variety of tasks, many of which have to do with setting expectations at the right level and clarifying what can be done, especially with regards to the scientific aspect of the research. For example, to counter criticism regarding subjectivity, ‘scientificity,’ and ‘determinativity,’ we recommend that linguists:

- Educate the lawyer on the fact that CL is a behavioral science, which means:
 - our work will be done according to certain standards, not that it will reach a specific or certain outcome, and that
 - our work will involve approximations and researcher degrees-of-freedom because, for example, meaning and not even commonness cannot be measured directly so linguists need to fall back on, or develop from scratch, ways to operationalize, i.e., measure what a certain application needs to have measured.
- Clarify precisely what we can and cannot do (and how well):
 - regarding objectivity, we need to make clear how much of what needs to be done can be done with what degree of objectivity (e.g., the analysis of the data and/or the process of deriving something from the results);
 - regarding validity, we need to clarify how obvious/“right” the selection of the corpus data are (to accommodate the time and genre aspects of *context*); how much other corpus methods actually target the main question (to accommodate lexical, syntactic, and/or pragmatic context); and how measures of frequency, association, and dispersion will be calculated separately;
 - regarding reliability/precision, we need to quantify, to the extent possible, how high the uncertainty of the final result is and what else can be done to potentially reduce that uncertainty; discuss how much individual variation there is in the data and how much it alone is responsible for a potentially high degree of uncertainty in the results.

As per the above legal recommendations, if not provided, linguists need to ask lawyers to define:

- the relevant speech community, but the linguists then also need to provide an assessment of how much they can approximate that

speech community with the corpus they plan on compiling and/or using;

- the kind of meaning the lawyer thinks they need to make a certain point; and
- the kinds of double dissociation advantageous to investigate for anything having to do with lexical/phrasal meaning (see [Solan and Gales, 2017:1351](#)).

Finally, linguists need to be open to using or recommending (aspects of) multiple methodologies (which might go beyond traditional CL), see [Phillips & Egbert \(2017\)](#) on data annotation advice from surveys and content analysis.

4.3. Our view on who should do LCL

Nearly all of the above was written from the perspective of a conversation between a lawyer and a corpus linguist. This is no accident – rather, it represents what we consider the ideal scenario. As we see it, the LCL community in general, and in particular, the legal side of the LCL community that is interested in promoting CL methods as a supplemental tool for legal interpretation, has an important decision ahead of it, one that is so important that we feel that the future of the field depends on it. For context, the explication of this problem requires a brief discussion of the birth and the evolution of the field.

Quite obviously, the publication of [Lee and Mouritsen \(2018\)](#), following that of [Mouritsen \(2010\)](#), were electrifying moments for the field of LCL, including for the present authors. There is absolutely no denying that especially [Lee and Mouritsen \(2018\)](#) was the foundational paper that gave birth to the whole movement, even if other authors had alluded to LCL in the form that [Lee and Mouritsen \(2018\)](#) represented it. However, one big problem was that the 2018 paper was not ready to be the methodological gold standard (as evidenced by the advancements demonstrated in their 2021 follow-up paper); it came with several issues, many of which we mentioned above and which could have been avoided if corpus linguists had been included more in the process. We are not saying this because we, as corpus linguists, felt or are feeling left out of the process – we are saying this because the paper made claims and endorsed positions (explicitly or implicitly and sometimes contradictorily, see our above discussion of [Lee and Mouritsen \(2018\)](#) determination of ordinary meaning) that made for such convenient targets that distractors of this undoubtedly positive approach had it easy in trying to critique such methodologies; such targets include all the things above: corpus selection, corpus linguistic methods, scientific standards, etc. and many of them could have been avoided if research-experienced corpus linguists had been involved more in the development. By now, there is a much greater body of work where legal and linguistic scholars have successfully collaborated, examples include [Gries and Slocum \(2017\)](#), [Phillips and Egbert \(2017\)](#), [Solan and Gales \(2017\)](#), [Gales and Solan \(2020\)](#), [Ren et al. \(2020\)](#), [Eskridge et al. \(2021\)](#), [Gries et al. \(2022\)](#), [Tobia et al., 2024](#), among others.

We find that at least some legal commentators agree with this (see [Babcock Woods, 2022:231](#), note 209) and we believe this view is supported by the fact that, after some of the more thoughtful critiques (e.g. [Tobia, 2020](#)), the second, updated position paper ([Lee and Mouritsen, 2021](#)) is much more nuanced. Now one might of course say that this is the way it goes: one promotes something new, one gets pushback, one refines, and to an extent that is true. However, as we have abundantly demonstrated above, premature promotion can lead to an extremely difficult-to-correct first impression of a newly introduced field that critics, once committed in writing to a certain view of the newcomer, are not going to want to abandon. Critics like Bernstein, Herenstein, Heskick, Zoldan, and many others are not likely to retreat from their critical positions no matter how nuanced and updated new position papers may be – a more linguistically thought-through initial position paper would have avoided many points of critique leveled at the early version of LCL, meaning it could have provided LCL with the more favorable foundation

and starting position it undoubtedly deserves.

That being said, here is what we think is the most important question the leading LCL practitioners face: **who should do LCL** (and how to stop sending mixed messages to the field and its observers)? We see two main points that are differently and strongly related to this question. First and as mentioned above, [Lee and Mouritsen \(2021\)](#) is much more nuanced than [Lee and Mouritsen \(2018\)](#). Yet, as discussed insightfully by [Tobia \(2021\)](#), even this second paper wavers between positions, as he demonstrates with the Frequency Fallacy (aka the Comparative Use Fallacy) according to which “when considering two senses of a term, comparatively greater support for one sense in the corpus provides evidence that this sense is a better candidate for ordinary meaning.” While [Lee and Mouritsen \(2021\)](#) claim this “is another strawman” and “has no foundation in our writing and [CL],” we have seen above how [Lee and Mouritsen \(2018\)](#) endorse both the defining role of frequency for prototypicality and the equivalence of prototypicality and ordinary meaning, and [Tobia \(2021:8–10\)](#) points out very well how both nearly all of the analyses of [Lee and Mouritsen \(2018\)](#) and [Lee and Phillips \(2019\)](#) of *carry* and *commerce* are based on exactly this fallacy. LCL cannot be adopted as widely as it might deserve while some of the main scholars and practitioners claim one (more nuanced) thing but do another (less nuanced thing) in their actual applications and while about a dozen or so terms for ordinary, prototypical, plain, public, frequent, etc. meaning are used without much definition.

Second, some LCL promoters argue, and LCL practitioners promote by virtue of their analyses, that it is legal practitioners – judges and lawyers – who can do the LCL analyses that may help decide cases. In fact, some leading LCL practitioners have for years promoted and conducted workshops “help[ing] judges gain first-hand experience using [corpus-linguistic methods],”⁴ even if no fully-trained corpus linguist is directly involved in the business or event.⁵ At the same time, when courts do corpus analyses, they do so without oversight, peer review, or quality control and thus, they lose precisely what enthusiastic supporters of LCL claim corpus methods offer: “transparency and reliability,” an “unprecedented level of data-based objectivity” ([Babcock Woods, 2022:227](#)), and a reduction of the risk of motivated reasoning ([Lee and Mouritsen, 2021:297](#)).

But we already have seen what can happen when ‘corpus analyses’ are done by untrained and potentially politically motivated courts; see the above-mentioned April 2022 opinion in *Health Freedom Defense Fund, Inc. v. Biden*, a perfect demonstration showing that courts can promote ‘analyses’ completely unconnected to proper CL methods or any science precisely because their work is not part of the adversarial system and because they may not be completely disinterested in the outcome. This is one reason why the linguistic side of LCL has always been warning that lawyers and judges are mistaken to assume that their analyses will be objective or they can even obtain any useful amount of linguistics and general social science knowledge in a brief half-day workshop. Judges defer to ballistics experts, but do they assume they

⁴ See, e.g., <https://judicialeducation.org/training/>, last retrieved 25 Nov 2023; <https://judicialeducation.org/people/>, last retrieved 25 Nov 2023. Our intention here is not to critique any individual or organization, but to support further collaborations between lawyers and linguists.

⁵ Similarly (but see again note 2), the successful annual Law and Corpus Linguistics conferences have frequently featured discussion panels or “judges panels” on LCL topics that did not involve any comprehensively trained corpus linguists or often just one, creating an imbalance in who is training others about corpus linguistic methodologies; see, for example, the judges panel and the panel “Corpus Linguistics and Contract Interpretation” at LCL 2018 (<<https://corpusconference.byu.edu/2018-conference/conference-info/>>, last retrieved 25 Nov 2023); the introduction to corpus tools at LCL 2019 and multiple panels at LCL 2019 (<<https://corpusconference.byu.edu/2019-home/conference-info/>>, last retrieved 25 Nov 2023); the application panel at LCL 2021 (<<https://corpusconference.byu.edu/wp-content/uploads/2021/02/2021-LCL-Conference-Schedule.pdf>>, last retrieved 26 Nov 2023).

can learn enough linguistics/statistics to choose the right association measure for collocate statistics or the right dispersion measure to measure commonness of use? Judges defer to psychologists for intelligence-based culpability testimony, but do they assume they can learn enough linguistics/statistics to effectively function as peer reviewers in a discipline most have zero expertise in now (as when [Lee and Mouritsen, 2021:310](#) want judges to “separate reliable corpus linguistic analysis from junk science”)? Judges defer to genetics experts to evaluate trace evidence, but do they assume they can learn enough about large language models and programming to do intensional semantics in their chambers? We say this with the greatest respect for legal practitioners’ intelligence and training, but we have yet to see a legal practitioner who has not undergone formal training in the empirical social and behavioral sciences yet has the required expertise/training for any of these things (contra [Lee and Mouritsen, 2018](#); [Bush and Jeffries, 2022](#); or [Babcock Woods, 2022](#)).

In sum, the question of “who should do LCL” is the central one the field is facing now. As long as

- LCL practitioners vacillate with regard to foundational methodological assumptions of their work (e.g., do different frequencies of senses mean something or not?) or definitional terms (e.g., what is prototypical?);
- there are contradictions between the reasonable nuances they produce when defending their work versus what they do in their applications or their workshops; and
- LCL practitioners do not undergo the formal (corpus-)linguistic training mentioned above,

the field will not find the acceptance it most probably deserves and we are forced to agree with [Ehrett \(2019:70\)](#) that “given the current ‘West’ environment of [CL] research [in legal contexts], judges committed to seeking texts’ [ordinary] meaning should likely refrain from using corpora at this point.” The above contradictions make for too easy targets for LCL to achieve any kind of ‘standard recognition’ before these issues are resolved. It is our hope that this paper provides useful guidelines for both legal (see [Section 4.1](#)) and linguistic (see [Section 4.2](#)) LCL practitioners that will, in the long run, result in LCL achieving the methodological status it deserves on both sides of the aisle.

Legal cases

- *Church of the Holy Trinity v. United States*, 143 U.S. 457, 459 (1892).
- *Muscarello v. United States*, 524 U.S. 125 (1998).
- *J.M.W. v. T.I.Z.* (In re Adoption of Baby E.Z.), 266 P.3d 702, 725 n.26 (Utah 2011).
- *United States v. Costello*, 666 F.3d 1040 (7th Cir. 2012).
- *State v. Rasabout*, 356 P.3d 1258, 1264 (Utah 2015).
- *Health Freedom Defense Fund, Inc. v. Biden*, No. 21-cv-1693-AEP, 2022 WL 1134138 (M.D. Fla. Apr. 18, 2022).

CRediT authorship contribution statement

Stefan Th. Gries: Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Tammy Gales:** Writing – review & editing, Writing – original draft, Visualization, Validation, Supervision, Software, Resources, Project administration, Methodology, Investigation, Funding acquisition, Formal analysis, Data curation, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial

interests or personal relationships that could have appeared to influence the work reported in this paper.

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