LANGUAGE PLAY IS LANGUAGE VARIATION: QUANTITATIVE EVIDENCE AND WHAT IT IMPLIES ABOUT LANGUAGE CHANGE

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This article argues that language play is intimately related to linguistic variation and change. Using two corpora of online present-day English, we investigate playful conversion of adjectives into abstract nouns (e.g. made of awesome), uncovering consistent rule-governed patterning in the grammatical constraints in spite of this option stemming from deliberate subversion of standard overt suffixation. Building on Haspelmath’s (1999) notion of ‘extravagance’ as one of the keys to language change, we account for the systematic patterning of deliberate linguistic subversion by appealing to tension between the need to stand out and the need to remain intelligible. While we do not claim that language play is the only cause of linguistic change, our findings position language play as a constant source of new linguistic variants in very large numbers, a small proportion of which endure as changes. Our conclusion is that language play goes a long way toward accounting for linguistic innovations—with respect to where they come from and why languages change at all.*

Keywords: sociolinguistics, linguistic variation, language play, morphology, language change, English, computer-mediated communication

1. INTRODUCTION. Language play—defined by Crystal (1998:1) as ‘bending and breaking the rules of the language … for fun’—is an ordinary and ubiquitous part of linguistic practice (Kirshenblatt-Gimblett & Sherzer 1976, Crystal 1998, Burridge 2004, Anis 2007, Veale 2012, Stanlaw 2020). It yields output that ‘hover[s] … on the boundary between what is acceptable and what is unacceptable’ (Crystal 1998:155). In other words, language play is intentional linguistic nonstandardness produced for the sake of humor and/or subversion. The tendency to engage in language play appears to be common across human cultures (Kirshenblatt-Gimblett & Sherzer 1976, Crystal 1998), as is play in general.1

Computer-mediated communication (CMC) is highly conducive to language play (Danet & Herring 2007, Thurlow 2012, Veale 2012, Deumert 2014, McCulloch 2019, Stanlaw 2020). There are multiple reasons for this. CMC is often fast, brief, interactive, and anonymous (Danet et al. 1997). It spans a nuanced continuum of registers (Androutsopoulos 2011), which are subtly but measurably different (Tagliamonte 2007), each of which can promote language play.

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1 See the anthropological literature beginning with Huizinga 1955 [1938] and Caillois 1961. For an overview aimed at general readers, see Brown & Vaughan 2009.

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2016). Written CMC ‘allows users to reflect on their communication—and play with language—in ways that would be difficult in [offline language]’ (Herring 2007:15).

Shared language play can spawn new shared registers even offline (e.g. Diehl & Kolodzey 1981, Namyalo 2015), but examples are especially easy to find in CMC. In English, these include leetspeak, as in 1a (Blashki & Nichol 2005), LOLspeak, as in 1b, associated with humorous pictures of cats (Rosen 2010, Lefler 2011), and doge, as in 1c, which is multimodal and surreal (Gawne & Vaughan 2011, McCulloch 2014, 2019, Manning 2015).

(1) a. 1|= |0u |{4N r34|) t|]15 t|]3N |0u i5 t3|=] _337
    if you can read this then you is teh leet (Blashki & Nichol 2005:83)


    c. amaze afro; very art; wow; much pbs; so paint; many happy
    (each of these a short label in Comic Sans in a different bright color,
    scattered throughout the background of an image of a Shiba Inu altered
    to resemble television painter Bob Ross) (McCulloch 2014)

A register such as leetspeak, LOLspeak, or doge involves ‘the simultaneous playful manipulation of multiple levels of language’ (Gawne & Vaughan 2011:97): the examples in 1 demonstrate various combinations of creative orthography, spelling, morphology, syntax, and word formation.

Playful registers that develop organically can be distinguished from small-scale language games, or ludlings (Laycock 1972), such as Pig Latin, which typically operate according to a smaller and more fixed set of constraints (Diehl & Kolodzey 1981:422–23, Irvine 2001, Thomason 2007, Sanders 2020:25–26). While ludlings are certainly able to reveal aspects of the grammar and/or linguistic cognition (Sherzer 1976, Diehl & Kolodzey 1981, Lefkowitz 1989, Burridge 2004, Iverson & Salmons 2005, Vaux 2011, Roberts 2017), they are not our focus here. Instead, we target the sort of open-ended language play that emerges spontaneously—and without overt guidelines—from language users subverting rules together in minor ways (along the lines of Diehl & Kolodzey 1981, del-Teso-Craviotto 2006, Gawne & Vaughan 2011, Lefler 2011, Punske & Butler 2019).

This article bridges the study of language play and the study of language variation and change in two senses. One is methodological. Earlier qualitative examinations of playful language have led several researchers—Gawne and Vaughan (2011), McCulloch (2014), Blamire (2016), and Cekaite (2018)—to suggest that in breaking linguistic rules, language users simply end up conforming to a new set of linguistic rules.² Our use of variationist tools to dissect a case of language play reveals quantitative evidence that corroborates this notion. Indeed, we uncover the same systematic patterning (Weinreich et al. 1968) that is characteristic of language otherwise. We attribute the rule-governed nature of language play to forces operating in opposing directions: creative language necessarily deviates from standard language, but it can only stray so far without becoming impossible to comprehend.

Starting from this observation, the second way in which we establish connections is by tracing the ramifications of our findings for variationist theory. We argue that language play, while usually facetious by definition, is not trivial. Rather, it constantly

² Along similar lines, Danet et al. (1997) broadly describe digital playfulness (whether language-based or not) as ‘more or less rule-governed’, and Verheijen (2013:584) points out the possibility that text messaging ‘has its own rules rather than that it follows no rules whatsoever’.
serves to generate a very large amount of linguistic variation. If a sociolinguistic variable is, as per the common offhand description, a set of ways of ‘saying the same thing’ (Labov 1972a:188), then any instance of language play creating a novel way of expressing something qualifies as a bona fide new variant. Of course, most cases of language play are meant to be one-offs, and do turn out to be fleeting in practice. However, the occasional example of language play that happens to catch on for the long term between two friends or within a social network or language community (Milroy & Milroy 1985) can become ordinary language variation. This occurs once it loses its initial connotations of novelty and noticeability—once it is no longer unexpected. Language play, then, can arguably be defined as that subset of linguistic variation that is still recognizable as intentional rule breaking; this has direct consequences for language change (see also Thomason 2007, Storch 2019). We emphasize that language play is just one of many possible sources of linguistic innovations. That said, we argue that it is a major one—that it is no coincidence that language play and language change are both cultural universals (Kirshenblatt-Gimblett & Sherzer 1976, Crystal 1998).

It is likewise meaningful that as with language variation and change, language play is found across all levels of the grammar (Sherzer 1976, Sherzer & Webster 2015, Cekaite 2018). Puns are a confluence of phonetic and semantic factors (e.g. Hempelmann & Miller 2017). The pronunciations of individual lexical items can be playfully distorted, such as garbage and (American department-store chain) Target pronounced as /ɡaɹˈbaʒ/ and /taɹˈʒeɪ/ for the sake of added pseudo-sophistication (Salmons & Purnell 2010). Orthographic play and creative respelling (Sebba 2007) far predate CMC; in §5.3 we return to the case of OK, the product of a nineteenth-century American newspaper habit of creating initialisms, in this case for the humorous Boston respelling oll korrect (Read 1963, 1964, Metcalf 2011, OED online). On the morphological level, Lieber (2009:70) highlights a potential distinction between productivity and ‘morphological creativity’: the deliberate use of a less-productive suffix to form novel combinations such as coolth in order ‘to be humorous or playful or to draw attention to those words for other reasons’. A recent example from English CMC is whomst, which KnowYourMeme describes as ‘a fake word used to signal ironic superior intelligence’.3 Syntactically, Yoda of the Star Wars franchise is well known for his offbeat use of English, characterized by heavily left-dislocated syntax (Pullum 2005) that is presumably intended to make him sound extraterrestrial and/or mystical.


The notion that language play might lead to variation and change is thus not farfetched. Haspelmath (1999), closely based on the work of Keller (1994), proposes that language change is an ‘invisible-hand process’ driven by five maxims, one of which is extravagance: ‘talk in such a way that you are noticed’ (Haspelmath 1999:1055). In tandem with the other four maxims, extravagance allows ‘language change [to be] an unintended byproduct of ordinary language use … that is, a phenomenon that is the

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result of human actions, although it is not the goal of human intentions’ (p. 1054). If the goal of language users ‘is not just being understood at the lowest possible cost, but rather being socially successful’ (p. 1055) and if ‘social success can also be achieved by being extravagant’ (p. 1056), then it is not only the case that extravagance-fueled language play can produce new linguistic variants, but that it does so as a matter of course. We thus echo—among others—Sherzer (1976, 2002), Sobkowiak (1990), Crystal (1998), Lefler (2011), Hanks (2013), and Storch (2019) in arguing that language play is not only natural and omnipresent, but also consequential enough to be worthy of serious scholarly examination.

2. Background. Our case study of language play is morphological in nature and fits into a Labovian sociolinguistic variable as follows: one of the two variants exists because it is standard and overwhelmingly unremarkable, while the other exists largely as a playful, attention-getting alternative to the norm. The variable in question is the derivation of abstract nouns from adjectives in present-day English.

Deadjectival nouns in general are sometimes described as understudied (Alexiadou 2014, Arche & Marin 2015), but there is a vein of morphological research comparing the lexical domains of -ness and -ity in English (Marchand 1969, Aronoff 1976, Romaine 1985, Anshen & Aronoff 1988, Baayen & Renouf 1996, Cowie 1998, Säily 2011, Baeskow 2012, Alexiadou 2014, Arndt-Lappe 2014). Of these two suffixes, -ness is generally taken to be the more productive (Cowie 1998, Baeskow 2012, Alexiadou 2014), but -ness and -ity rarely overlap; their distribution generally falls along etymological lines (Germanic versus Romance) (Marchand 1969, Romaine 1985, Cowie 1998, Baeskow 2012, Arndt-Lappe 2014). Very few lexical stems lead to direct competition between -ness and -ity in practice. Cowie (1998:198) finds only eight in the ARCHER corpus where the meaning stays approximately the same regardless of which suffix is selected to form a noun (dense, false, gentle, noble, odd, passive, perverse, and sensitive). In other words, -ness versus -ity is not a site of abundant sociolinguistic variation.

Indeed, this article is not concerned with variation between -ness and -ity at all. For our purposes, the point is that overt suffixation (in whichever form) is the standard way of deriving a noun from an adjective in English. We place this in contrast with a non-standard and extravagant option: zero-derivation/conversion. Examples that we have observed in passing in online language or in advertising include those in 2.6

(2) a. My voice changes when I see cute\(\emptyset\) (name of Facebook group, 2012)
b. All it does is create 15 seconds of awkward\(\emptyset\) (Cracked.com, 2012)
c. All my bitter\(\emptyset\) has been used up (‘Yourmometer’, webcomic, 2012)

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4 See, for instance, Childs & Van Herk 2014:651 on the role of the ‘joke non-standard’ in the local enregisterment of verbal -s suffixes in Newfoundland English, and Tagliamonte 2012:351 speculating about the role of irony in variation and change.

5 Whether conversion is equivalent to zero-derivation is not settled (see e.g. Lieber 1992:157–65, Bauer & Valera Hernández 2005a:12–15, Kastovsky 2005), but as this matter is outside the scope of the present work, we use the terms interchangeably.

6 Given the possibility of reverse identification of online message-board users into perpetuity (Bolander & Locher 2014, Ayers et al. 2018, Fiesler & Proferes 2018), throughout this article we refrain from using tokens from our data sets as examples. Screenshots from other social-media sites that we use to provide supporting argumentation, where they are used here, rely only on usernames and are attributed accordingly.
d. Get simple∅ back (Jott, 2012)

e. 13 people who turned their Canadian∅ up to 100 (BuzzFeed, 2015)

f. Choose happy∅ (Koodo, 2015)

g. You just grabbed a whole bunch of healthy∅ (Whole Foods Market, 2015)

h. Delivers clever∅ along with cookies (Thelma’s Treats, 2015)

Across a larger range of word classes, conversion is both common and productive in present-day English. Lieber (2009:49) lists familiar examples of noun-to-verb (table > to table), verb-to-noun (to throw > a throw), and adjective-to-verb (cool > to cool) conversion. However, adjective-to-noun conversion is not very productive in English. We address a few preexisting lexical niches for this below (good, evil, cool, as well as colors and flavors in some contexts), but conclude for now that adjective-to-noun conversion in historically unprecedented places is likely to be deliberate language play. As Baayen and Renouf (1996) put it in a summary of Aronoff 1983: ‘as the productivity of a pattern decreases, the likelihood increases that [language users] are aware of the fact that they are coining a new word. They may even exploit the salience of semi-productive neologisms’ (1996:81). These zero-derived adjectival nominals are, therefore, extravagant in the sense described by Haspelmath (1999) (see also Manning 2015:Ch. 3, Goldberg 2019:62). To our knowledge, the possibility of adjective-to-noun conversion does not receive attention in reference grammars of English. Discussion of this option so far has thus been limited to online commentary by linguists, bloggers, and journalists, often in conjunction with novel examples from advertising or pop culture, as in 2.

To start, Zimmer (2009) points out that singer Justin Timberlake’s phrase ‘I’m bringin’ sexy∅ back’ requires the interpretation of sexy as a noun. Whitman (2009) refers to an example of ‘completely made of awesome∅’ in vernacular speech and links it to ‘a more general process of turning any part of speech into a mass noun’. Zwicky (2009) shares an impression that zero-derived deadjectival nouns tend to follow the preposition of. Following up, Zwicky (2010) observes a token of ‘hits a new level of unsatisfactory∅’ in a newspaper and points out that the lack of a conventionalized noun derivation for the adjective unsatisfactory makes the zero option ‘colloquial but … effective’. Francis (2013) considers the token ‘creating amazing∅’, in which amazing is ‘behaving strangely like a noun, here a condensed grammatical object’. Greene (2013) collects a number of examples of adjectives that have been ‘nounified’, including Virgin Atlantic’s ‘flying in the face of ordinary∅’ and Sky Television’s ‘believe in better∅’. Lighter (2013) points out an example in advertising (‘fight the gnarly∅ and feel the love’), then later describes examples of zero-derived deadjectival nominals as ‘so common now that there’s almost no point in reporting more of them’ (Lighter 2015). He elaborates with an intuition that they are ‘more syntactical than lexical’, that is, not an idiosynrasy of a small number of lexical stems such as awesome. Most recently, Modra (2018) also finds several examples in advertising: ‘spreading the happy∅’, ‘celebrating your extraordinary∅’, ‘rethinking possible∅’, and ‘find your clever∅’. The number of examples from advertising is not surprising as, like CMC, advertising is a context in which intentionally nonstandard language flourishes. Crystal (1998:94) refers to playful language as ‘part of the essence of advertising’, given its ability to attract and retain the attention of the viewer; ‘[p]laying with nonstandard grammar is always eye-catching’ (Crystal 1998:97; see also Davies 1987).
One place in the linguistics literature where there is discussion of zero-derived deadjectival nouns, while serendipitous, is informative. Squires (2017) describes a framework for doing self-contained psycholinguistics experiments in English-language linguistics classrooms, with example results from her own. Among her suggested experiments is a wug-test that investigates derivational morphology. Within this, one of the sample sentences prompts the participant to create a derived noun from a nonce adjective: ‘That was a thuck concert. The level of ___ was amazing’ (Squires 2017:237). Squires expects to see mostly thuckness as a response, but as the task is not forced-choice, participants are free to respond with whichever noun form comes to mind. Her set of example results show that while the two most frequent answers are the pseudo-deverbal form thucking and the anticipated thuckness, the third-most frequent is a zero-derived form—‘the level of thuck∅ was amazing’—beating out even thuckery (Squires 2017:238). This finding suggests that the zero-derivation strategy, however unusual, is one of several productive options in the minds of English speakers. It is also support for the previously mentioned intuition of Lighter (2015) that the zero-derivation of abstract nouns from adjectives is not a lexically restricted option. If this strategy were merely lexical (i.e. associated with a closed set of adjectival stems), there would be no accounting for why zero-derivation comes to mind as a nominalization strategy for a nonce adjective—particularly with the choice of several everyday suffixes as alternatives.7

Across existing variationist accounts of morphological phenomena in present-day English, there is one reasonably close comparison to our variable: the derivation of adverbs from adjectives (e.g. Nevalainen 1994, Tagliamonte & Ito 2002). It too involves standard overt suffixation (‘They took it personally’) competing with nonstandard zero-derivation (‘They took it personal∅’). The major difference between these two variables is that for adverbs, the zero option is better established. While considered nonstandard today, it has been used, recognized, and commented on for centuries (Nevalainen 1994; see also references in Tagliamonte & Ito 2002). The analogous variation for deadjectival zero-derived nominals may be newer, or else has just not attracted attention as easily to date. Given its lack of recognition in reference works and its salience in advertising, we assume that zero-derivation of deadjectival abstract nouns largely owes its current existence to the standard rules being flouted deliberately. In other words, it is meant to differ, slightly, for the sake of extravagance in playful language.

Still, a key commonality between the nominal (-ness/ity ∼ ∅) and the adverbial (ly ∼ ∅) variables is the existence of lexical niches where the otherwise nonstandard zero is so well accepted that the standard overt suffix seems odd or clumsy at best. For adverbs, at least when it comes to the modification of verbs, examples include fast, slow, quick, right, wrong, hard, and soft, as exemplified in 3 (for related commentary, see Nevalainen 1994, Tagliamonte & Ito 2002, and Bauer et al. 2013:Ch. 25).

(3) a. All those people are walking slow(ly).
   b. They lined it up right(ly).
   c. We did the first problem wrong(ly).
   d. She works hard(*ly).

Likewise, we suggest that a handful of deadjectival nouns are already commonly zero-derived in English. Examples might include good and evil, cool, color words, and sweet and sour in some cases, as in 4. These cases form a precedent—however

7A referee of the present work points out that since -ing is an unexpected way of deriving a noun from an adjective, participants may not have had a clearly adjectival reading of thuck. Squires (2017:237) does note that the popularity of the -ing strategy is surprisingly high.
small—for the zero-derivation of abstract nominals from adjectives. In other words, this pathway of conversion has a foothold in standard English, but it is heavily restricted at the lexical level.8

(4) a. Good∅ exists in everyone.
    b. This is the root of all evil∅.
    c. The managers are losing their cool∅.
    d. I’m getting distracted by the intense yellow∅ of the host’s outfit.
    e. Make sure to squeeze in a lemon. You need sour∅ to balance out the flavours.

In examples such as those in 4, the zero-derived forms are unremarkable. The zero suffix is much more extravagant in cases where an overt suffix (-ness, -ity, etc.) is the norm, but 4 attests to it not being fundamentally difficult to interpret. A user of English (or an English-language advertisement) deviating from standard deadjectival noun formation by skipping the overt suffix is capturing the attention of onlookers, but only diverging so far from the standard option. This, we propose in the discussion to follow, encapsulates the underlying properties of language play in general and accounts for why, when it comes to language, even rule breaking is rule-governed.

3. Methodology.

3.1. Inclusions and exclusions. Because the nonstandardness under study is about deliberate subversion of the norm, defining the envelope of variation (i.e. ascertaining the set of linguistic contexts in which the variation between standard overt suffixation and extravagant zero-derivation is possible) is at least a challenge, and at worst a hopelessly slippery endeavor. For what subset of present-day English adjectives does this variation exist? The answer arguably lies in the extent to which the language user currently wants to be extravagant. For this reason, grammatical intuitions are of limited use.

To circumvent this elusiveness and determine where extravagant deadjectival nouns appear in practice, we compiled a list of all the adjectival stems that we and online commenters have observed being zero-derived into abstract nominals, regardless of the overt suffix that each would normally take (-ness or -ity or something else), and looked for generalizations. This list, sorted alphabetically, is shown in 5.

(5) adorable, amazing, awesome, awful, awkward, bad, beautiful, better, bitter, busy, Canadian, civil, classy, clean, clever, cool, crazy, creative, creepy, crummy, curious, cute, deadpan, dumb, extraordinary, fabulous, fair, fake, fearless, forbidden, funny, fuzzy, good, gnarly, grumpy, handsome, happy, healthy, heartwarming, ignorant, incredible, innocuous, interesting, lonely, loud, mean, messy, normal, ordinary, perfect, polite, possible, pretty, queer, random, sad, scared, scary, sexy, shallow, silly, simple, skinny, smart, smug, special, spicy, strong, stupid, stumpy, super, tired, ugly, unforgettable, unsatisfactory, wacky, weird, wonderful, wrong

The commonality, semantically speaking, is that these adjectives mostly capture subjective judgments; Lasersohn (2005) and Stephenson (2007) refer to evaluations such as these as ‘predicates of personal taste’. Initially, the biggest counterexample appears to be Canadian—not straightforwardly a matter of opinion—but in context (see 2e) it

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8 These are distinct from the cases that Denison (1999:113–14) refers to as ‘adjectives acting as NP heads’, such as the poor or the French (see also Quirk et al. 1985, Huddleston & Pullum 2002, Bauer et al. 2013:Ch. 25). Although these structures are reasonably productive (Bauer 2005), semantically speaking they are not abstract qualities and therefore do not fit here.
refers to a list of activities that come across as stereotypically reminiscent of Canada in an over-the-top way. This suggests gradation and subjectivity, rather than an objective or binary state. With this additional context, Canadian joins most of the rest of the adjectives in being capable of being slotted into an overtly evaluative framework such as 6 without a semantic clash.

(6) This kind of thing strikes me as (adorable/amazing/awesome/awful/awkward/… )

Worth noting is that a few of the remaining examples capture mental states of an experiencer (happy, lonely, scared) more than anything else—and are thus a little strange when combined with 6—but a generalization about zero-derivation can nonetheless be made: it is found primarily with adjectives of evaluation.

Morphologically, in terms of nominalization strategies, the stems in 5 are not uniform. Many of them ordinarily take -ness or -ity. Others rely on less productive strategies, such as ignorant and perfect (i.e. -ce and -tion). The noteworthy beautiful contains more phonological material than its standard nominal counterpart does, thus establishing that zero-derivation of abstract nouns from adjectives is not simply about truncation. Finally, and tellingly, a few adjectival stems in 5 do not have obvious or standard nominal derivations at all—including funny, wrong, the comparative better, and Canadian—and several more (busy, special) have highly lexicalized meanings when overt suffixation is added.9 As noted, Zwicky (2010) makes the same point with respect to an example of nominal unsatisfactory∅, and we agree with him that such cases incentivize the use of a playful zero-derivation strategy. This is exemplified in 7: funny normally resists being converted into an abstract noun by means of overt suffixation, but an informal and entertainment-based context allows for a way of nominalizing this stem playfully (and catches the attention of the viewers in the process).

(7) All your funny∅ in one place (Cheezburger Network, 2012)

Given the large number of adjectival stems that might take part in variation between an overt suffix and the ∅ option, our study does not attempt to account for the entire patterning of zero-derived deadjectival nouns in a data set. Rather, we aim to identify the broad linguistic factors that constrain this case of language play on the quantitative level. We acknowledge that the proportions we end up with will not speak to the extent of zero among abstract nominalizations generally, or even among abstract nominalizations of evaluative adjectives specifically. Instead, we focus on a test case with a limited number of lexical stems—that is, a small subset of those in 5.

To begin, we control for overt suffix, restricting ourselves to stems that take -ness as their standard nominalization: the variation under study here is therefore limited to -ness ∼ ∅. We set aside -ity because it affects stress and/or vowel quality in a way that -ness does not (Huddleston & Pullum 2002, Bauer et al. 2013:Ch. 12), and we disregard the more morphologically idiosyncratic lexemes in case they are too fundamentally different (e.g. beautiful as a converted nominal). The shared key to these exclusions is that in both cases, using a zero for effect instead of, for example, -ity, -tion, or -ce might entail a different number and/or selection of rules to break.10

9 The Latinate roots of -ity afford it slightly more formal connotations than -ness and may allow it to be ‘used in a jocular way’ (Bauer et al. 2013:248). Indeed, one of the authors of the present work recalls a playful interaction with an acquaintance from the United States in 2005: ‘You and your Canadian-ness!’ ‘The word is Canadiánity’.

10 Whether -ness and -ity have identical meanings is also not certain (Riddle 1985, Baeskow 2012, Bauer et al. 2013, Arndt-Lappe 2014); however, it is not clear that this would present enough of a problem to threaten the ‘near-synonymy’ needed in a variationist study (Tagliamonte 2006; but see Cowie 1998:Ch. 5).
Next, we focus on seven stems that normally take -ness and that are expected to be reasonably frequent in casual CMC: adorable, awesome, crazy, cute, dumb, sad, and smug. All of these can evaluate situations and/or humans subjectively (though we acknowledge that two of them are ableist insults).

We set aside all examples of either -ness or zero immediately after copulas (or in stand-alone exclamations) due to the inevitable ambiguity that arises in this context: for instance, we exclude ‘this is awesomeness’ since its zero-derived counterpart, ‘this is awesome∅’, would be indistinguishable from the same string of words with the everyday adjective. Exceptions are made only for cases in which the adjectival interpretation is unlikely, such as with intervening material, for example, ‘this is instant awesome(ness ∼ 0)’. We also exclude metalinguistic tokens that discuss either the morphology or the lexical item itself, for example, ‘this defines “cute”’.

3.2. Corpora and extraction. Our data are drawn from two sets of online forums. The first, originally used as a pilot study of the variable, is a large sample taken in 2015 from the forums associated with the webcomic xkcd (http://www.xkcd.com), written by Randall Munroe, which has attracted a devoted following since its origins in 2005 (Edwards 2014). As of this writing, the forums are no longer online, but they were originally located at http://forums.xkcd.com and contained messages reaching back to mid-2006. We selected this as an initial corpus hoping to find a population of Internet users very willing to play with language, as the comic itself is usually lighthearted and clever and routinely involves language or linguistics directly. The 2015 comic in Figure 1, for instance, quotes Peterson’s (2015) article in the cartoonist’s local Boston Globe.

We relied on a web-scraping script written in Python and ran it on the xkcd forums on 4 May 2015, gathering 310,000 individual posts from between 2006 and 2015.

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12 The intention was to scrape the entire forum; we and our assistant who wrote the script were unable to determine why the web-scraper took only part of it before it stopped. However, there was enough data to work
Following our pilot study, wanting to follow up with more data and to test for the same constraints, we took a sample from the Complete Public Reddit Comments Corpus (Baumgartner 2015), which amounts to 1.7 billion posts up to the year 2015 from the online message-board site Reddit (see Tsou 2016 for an introduction). This corpus is more or less contemporaneous with our scraped xkcd data, but the size of the data set quickly became unwieldy, so we selected four months of data, spaced at six-month intervals, from the middle of the same time period covered by the xkcd forum: January and July 2008, and January and July 2009.

In both cases, we used the concordance software AntConc (Anthony 2014) to extract all cases of adorable*, awesome*, crazy and craziness, cute*, dumb*, sad*, and smug*, where the asterisk is a wildcard symbol, then read through the tokens one at a time and manually retained only the deadjectival nouns (those derived with either the standard -ness or the nonstandard zero). Given these parameters, we extracted 682 tokens of the variation from the xkcd forum and 2,648 from Reddit.

3.3. Primary hypotheses. Given two corpora of English-language CMC from about the same time, our major hypothesis is that if language play is heavily rule-governed, we will see evidence of the same grammatical constraints in operation in both corpora, and those should have the same constraint hierarchies. In other words: in both xkcd and Reddit, the same set of linguistic predictors should meaningfully influence whether a nominalization is realized with a standard -ness or an extravagant zero, and the factor levels ought to be in the same order in terms of how conducive they are to the zero option.

Our study therefore falls under the approach known as comparative sociolinguistics (see overviews in Tagliamonte 2002, 2012:Ch. 6), which evaluates the extent of similarity between linguistic variation from two sources. Typically, this is done to determine whether ostensibly similar patterns of variation from two separate locations can be plausibly traced back to a single phenomenon from a shared ancestral variety (e.g. Jones & Tagliamonte 2004). Since the transmission of language over the generations preserves grammatical conditioning far better than the diffusion of innovations from one place to another does (Labov 2007), similar conditioning is interpreted as evidence of common descent—at least for the sociolinguistic variable under study. In our case, the broader question is not dialectological in nature. While we are indeed looking for the same constraints on the same variation in two corpora, this is for a different reason, as indicated above: searching for systematicity in linguistic rule breaking.

3.4. Coding. We treat -ness versus zero as our dependent variable, and include lexical stem (adorable, awesome, crazy, cute, dumb, sad, or smug) as an independent factor to allow for the possibility that different words show different rates of the nonstandard zero variant. Perhaps, for instance, there are enough semi-idiomatic phrases such as full of awesome to make awesome particularly likely to be zero-derived in casual online communication.

Beyond that, which grammatical factors might be involved in conditioning morphological variation that owes itself to language play? We begin with the matter of the type of containing phrase (i.e. the most immediate phrase in the syntactic tree above the DP that contains the deadjectival noun). As noted, Zwicky (2009) has the impression that

with in the sample, and we did not see any bias in what it collected that led us to expect the results to be skewed; the threads were from a range of subforums and were representative in terms of the typical tone and subjects of discussion.
zero-derived deadjectival nouns are frequently found after of, but we can see from the examples in 8 that they can conceivably be found as direct objects of transitive verbs (as in 8b) or even as subjects of verbs (as in 8c).

(8) a. PP: The new GUI is full of awesome∅!
   b. VP: We stayed up all night generating awesome∅.
   c. CP: Awesome∅ never fails to bring us together.

Based on Zwicky’s observation, we expect PPs to be the most conducive of these categories to zero-derivation. If so, it is possible that the reason for this is that tokens in PPs are often clause-final, meaning that they are less susceptible to garden-path problems than are tokens at the beginning of the clause (CPs). That is, since awesome∅ is homophonalous with the everyday adjective, Awesome∅ never fails to bring us together possibly disrupts processing by prompting a need for reparsing partway through the clause, while The new GUI is full of awesome∅! does not, which could disfavor the zero option. This leads to our hypothesis that tokens of deadjectival abstract nouns in subject position (those with CPs as their most-immediate containing phrases) are the least likely to have the zero, with objects of transitive verbs (those with VPs as their most-immediate containing phrases) in the middle as a result of sometimes being clause-final but sometimes not (if the VP contains a subsequent PP and/or adverb phrase, for instance). For the PP tokens exclusively, we coded for specific prepositional head in order to test Zwicky’s (2009) intuition about of being especially likely to lead to zero-derived deadjectival nouns.

Intervening material between the phrase head and the deadjectival abstract noun is worth taking into account, as it presumably reinforces the nominal nature of the subsequent lexical item. We originally hypothesized that both determiners and quantifiers would make the zero-derivation strategy more likely by disambiguating the word class. However, as these two categories turned out to be divergent in their effects, we coded for them separately: presence or absence of a determiner (as in 9a and 9b), and presence or absence of a quantifier (9c and 9d).

(9) a. Determiner: She is deep in this awesome∅.
   b. No determiner: I have to say I am awfully fond of awesome∅.
   c. Quantifier: We had much awesome∅ to deal with.
   d. No quantifier: He did not expect to find awesome∅, but there it was.

This being anonymous CMC data, we have very little information about individuals and potentially relevant social factors. We do have usernames available for the xkcd data, which we incorporated into a portion of our statistical analysis, as described below. Aside from that, however, we set aside individuals to focus on the linguistic constraints and what they reveal about rule breaking. A proper exploration of the role of individuals and their networks in quantitative investigations of language play, while very much called for, is left for follow-up research.

4. Results. We begin in §4.1 by looking at the overall distribution of -ness and zero, and then present a factor-by-factor distributional analysis. Subsequently, we conduct logistic regression analyses and compare them in §4.2.

13 Searching forum users’ posting histories for clues to the social groups they fall into is a possible workaround (Flesch 2019), but using scraped data meant that we did not have easy access to this.
4.1. Distributional analysis. Table 1 shows the overall distribution of the two variants within each corpus. There are a total of 682 nominalizations of these adjectives in the *xkcd* data. Of these, 214 are zeros, making for a zero-derivation rate of 31.4%. The *Reddit* sample yields 2,643 nominalizations, with 1,142 of those being zeros: a zero-derivation rate of 43.2%.

<table>
<thead>
<tr>
<th></th>
<th><em>xkcd</em>: %</th>
<th><em>xkcd</em>: N</th>
<th><em>Reddit</em>: %</th>
<th><em>Reddit</em>: N</th>
</tr>
</thead>
<tbody>
<tr>
<td>∅</td>
<td>31.4%</td>
<td>214</td>
<td>43.2%</td>
<td>1,142</td>
</tr>
<tr>
<td>-ness</td>
<td>68.6%</td>
<td>468</td>
<td>56.8%</td>
<td>1,501</td>
</tr>
<tr>
<td>total</td>
<td></td>
<td>682</td>
<td></td>
<td>2,643</td>
</tr>
</tbody>
</table>

Table 1. Overall rates of ∅ and -ness in deadjectival nouns in *xkcd* and *Reddit*.

These proportions of zero-derivation might seem extraordinarily high for an intentionally nonstandard form that goes unmentioned in the standard grammars. We reiterate that we selected both data and lexical stems that are conducive to this zero-derivation in order to better understand how it functions. Our findings necessarily do not capture the proportion of zero across all deadjectival nouns even in informal CMC; we assume that these rates of zero-derivation are greatly inflated compared to their averages across more adjectival stems.

While the *Reddit* data has a higher baseline proportion of ∅ than the *xkcd* data does, the key question is whether the same linguistic factors condition the variation and in the same directions. We begin with the effect of adjectival stem, displayed in Table 2 and Figure 2.

<table>
<thead>
<tr>
<th></th>
<th>% ∅: <em>xkcd</em></th>
<th>N ∅: <em>xkcd</em></th>
<th>total <em>xkcd</em></th>
<th>% ∅: <em>Reddit</em></th>
<th>N ∅: <em>Reddit</em></th>
<th>total <em>Reddit</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>crazy</td>
<td>48.8%</td>
<td>41</td>
<td>84</td>
<td>62.9%</td>
<td>406</td>
<td>645</td>
</tr>
<tr>
<td>awesome</td>
<td>39.1%</td>
<td>143</td>
<td>366</td>
<td>45.4%</td>
<td>496</td>
<td>1,093</td>
</tr>
<tr>
<td>cute</td>
<td>24.1%</td>
<td>7</td>
<td>29</td>
<td>40.5%</td>
<td>104</td>
<td>257</td>
</tr>
<tr>
<td>smug</td>
<td>15.8%</td>
<td>9</td>
<td>57</td>
<td>26.1%</td>
<td>48</td>
<td>184</td>
</tr>
<tr>
<td>sad</td>
<td>7.2%</td>
<td>10</td>
<td>138</td>
<td>6.8%</td>
<td>25</td>
<td>368</td>
</tr>
<tr>
<td>dumb</td>
<td>25.0%</td>
<td>1</td>
<td>4</td>
<td>67.4%</td>
<td>58</td>
<td>86</td>
</tr>
<tr>
<td>adorable</td>
<td>75.0%</td>
<td>3</td>
<td>4</td>
<td>50.0%</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>total</td>
<td></td>
<td>682</td>
<td></td>
<td></td>
<td>2,643</td>
<td></td>
</tr>
</tbody>
</table>

Table 2. Rates of ∅ in deadjectival nouns in *xkcd* and *Reddit*, split by lexical stem, arranged in descending order of the rate of ∅ in *xkcd* (aside from dumb and adorable, for which the token count in at least one corpus is below five).

The number of tokens varies widely in this respect, with adorable in particular turning out to be poorly represented (*N* = 4 in the *xkcd* data and *N* = 10 from *Reddit*).

Figure 2 makes it more visually apparent that, aside from the two stems that are very low frequency in the *xkcd* data (adorable and dumb), the constraint hierarchy for this independent factor is the same in both corpora. In *xkcd*, as in *Reddit*, crazy is the most likely to take the ∅ variant, followed by awesome, then cute, then smug, and finally sad.
Table 3 and Figure 3 show the effect of the most-immediate containing phrase. The xkcd data show the effect proposed in the hypothesis for this factor: the smaller the phrase (i.e. PP < VP < CP), the more conducive it is to the zero variant. In the Reddit data, the proportions of zero for PPs and VPs are not distinguished from each other, but CPs are the least likely to lead to a zero, as in xkcd.

<table>
<thead>
<tr>
<th>Phrase</th>
<th>% $\emptyset$: xkcd</th>
<th>N $\emptyset$: xkcd</th>
<th>Total N: xkcd</th>
<th>% $\emptyset$: Reddit</th>
<th>N $\emptyset$: Reddit</th>
<th>Total N: Reddit</th>
</tr>
</thead>
<tbody>
<tr>
<td>PP</td>
<td>35.2%</td>
<td>142</td>
<td>403</td>
<td>44.3%</td>
<td>638</td>
<td>1,440</td>
</tr>
<tr>
<td>VP</td>
<td>28.8%</td>
<td>60</td>
<td>208</td>
<td>44.2%</td>
<td>339</td>
<td>767</td>
</tr>
<tr>
<td>CP</td>
<td>15.6%</td>
<td>10</td>
<td>64</td>
<td>37.8%</td>
<td>165</td>
<td>436</td>
</tr>
<tr>
<td>Total N</td>
<td></td>
<td>675</td>
<td></td>
<td></td>
<td></td>
<td>2,643</td>
</tr>
</tbody>
</table>

Table 3. Rates of $\emptyset$ in deadjectival nouns in xkcd and Reddit, split by most-immediate containing phrase, arranged in descending order of the rate of $\emptyset$ in xkcd. (Seven tokens from xkcd are ambiguous.)
Given the prevalence of PP tokens, and the fact that they have been subject to particular attention in online commentary, we examine the rates of zero by prepositional heads and evaluate the notion that of is the P head that takes the $\emptyset$ variant the most readily, as per Zwicky (2009). Table 4 and Figure 4 show the seven P heads that are the most frequent in the xkcd data.

Table 4 and Figure 4 show that, in accordance with Zwicky’s (2009) intuition, the PPs headed by of are the most likely to take the zero variant. As with lexical stem (and, to some extent, containing phrase), the constraint hierarchy within the PPs is very similar between the two corpora. In terms of conduciveness to the zero variant, of $>$ with $>$ for $>$ to in both corpora. The remaining prepositions each have much smaller sample sizes, so these findings are not necessarily reliable, but future work with much larger data sets could clarify how deeply the constraint hierarchy holds between different contemporaneous corpora.

Table 5 captures the effect of whether there is a determiner present, and Table 6 probes whether there is a quantifier present. Our hypotheses for these two factors were originally the same: that additional material would make it easier to identify the output of the zero-derivation as a nominal rather than an adjective phrase, and would thus lead
Language play is language variation

to higher rates of zero. This hypothesis is not upheld by the determiner data, though the quantifier data show a possible effect in the predicted direction. As these factors diverge in terms of patterning, we address them separately.

The effect of determiner presence or absence on the variation is shown in Table 5. Contrary to the original hypothesis, it is the contexts WITHOUT a determiner that lead to more $\emptyset$ in each corpus.

<table>
<thead>
<tr>
<th></th>
<th>% $\emptyset$:</th>
<th>N $\emptyset$:</th>
<th>TOTAL N:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>xkcd</td>
<td>Reddit</td>
<td>xkcd</td>
</tr>
<tr>
<td>determiner</td>
<td>17.9%</td>
<td>29.4%</td>
<td>263</td>
</tr>
<tr>
<td>no determiner</td>
<td>40.0%</td>
<td>52.3%</td>
<td>167</td>
</tr>
<tr>
<td>TOTAL N</td>
<td></td>
<td></td>
<td>681</td>
</tr>
</tbody>
</table>

Table 5. Rates of $\emptyset$ in deadjectival nouns in xkcd and Reddit, split by whether there is a determiner in the NP. (One token from xkcd and sixteen from Reddit are ambiguous and thus not included here.)

The final linguistic factor examined is the presence or absence of a quantifier, shown in Table 6. In both corpora, the effect is in the hypothesized direction: the presence of a quantifier goes hand in hand with more of the nonstandard zero variant.

<table>
<thead>
<tr>
<th></th>
<th>% $\emptyset$:</th>
<th>N $\emptyset$:</th>
<th>TOTAL N:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>xkcd</td>
<td>Reddit</td>
<td>xkcd</td>
</tr>
<tr>
<td>quantifier</td>
<td>38.3%</td>
<td>56.6%</td>
<td>23</td>
</tr>
<tr>
<td>no quantifier</td>
<td>30.9%</td>
<td>42.5%</td>
<td>191</td>
</tr>
<tr>
<td>TOTAL N</td>
<td></td>
<td></td>
<td>679</td>
</tr>
</tbody>
</table>

Table 6. Rates of $\emptyset$ in deadjectival nouns in xkcd and Reddit, split by whether there is a quantifier in the NP. (Three tokens from xkcd and eleven from Reddit are ambiguous and thus not included here.)

Before conducting regression analyses, we performed cross-tabulations of the combinations of two independent factors in order to search for interactions. The one suggestive finding is an interaction of stem and determiner presence/absence, shown in Table 7 and Figure 5.

<table>
<thead>
<tr>
<th></th>
<th>% $\emptyset$:</th>
<th>N $\emptyset$:</th>
<th>TOTAL N:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>xkcd</td>
<td>Reddit</td>
<td>xkcd</td>
</tr>
<tr>
<td>determiner</td>
<td>14.3%</td>
<td>18.7%</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>40.9%</td>
<td>59.9%</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>20.0%</td>
<td>34.6%</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>10.4%</td>
<td>8.0%</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>11.1%</td>
<td>18.9%</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 7. Rates of $\emptyset$ in deadjectival nouns in xkcd and Reddit, examining the interaction of stem and determiner presence/absence. Note that this analysis excludes the stems adorable and dumb, given their low token counts.

Two broad observations are apparent in Table 7 and Figure 5. One is that this interaction is the same in both corpora, in spite of a low number of null tokens—especially in the xkcd data—for sad and smug. The other is that while the effect of determiner absence does vary by stem, four of the stems have the effect in the same direction such that the rate of zero is higher without a determiner. This is particularly true of awesome. The exception is sad, which shows the opposite pattern: more zero when there is a determiner.


4.2. Logistic regression analyses. In a fixed-effects logistic regression conducted on the whole data set in R (R Core Team 2020), the effect of corpus (i.e. xkcd versus Reddit) on the probability of \( \emptyset \) comes out as statistically significant, whether or not other factors are included in the modeling: the proportion of \( \emptyset \) is significantly higher in Reddit than it is in xkcd. The example in the simplest possible model in this regard (suffix ~ corpus) is shown in Table 8.

<table>
<thead>
<tr>
<th></th>
<th>EST</th>
<th>SE</th>
<th>z-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>(intercept)</td>
<td>0.54</td>
<td>0.05</td>
<td>11.67</td>
<td>&lt; 0.001 ***</td>
</tr>
<tr>
<td>corpus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>xkcd</td>
<td>(level not reported)</td>
<td></td>
<td>5.23</td>
<td>&lt; 0.001 ***</td>
</tr>
<tr>
<td>Reddit</td>
<td>0.24</td>
<td>0.05</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 8. Fixed-effects logistic regression evaluating the effect of corpus on the nominalizations created by \( \emptyset \) (versus -ness).

However, the finding captured in Table 8 does not address the central question, which is whether the variation is conditioned by the same set of factors in the same ways in both corpora, that is, regardless of the overall proportion of the playful zero variant. In order to test this, we redivide the data set by corpus and run parallel models to identify the significant factors (and the constraint hierarchies associated with those) within each message board. For the comparative logistic regression analysis, we exclude the low-frequency stems adorable and dumb, along with disregarding the small number of tokens that are ambiguous with respect to one or more of the other independent factors. This leaves 664 tokens from xkcd and 2,520 from Reddit.

Since our methodology did not allow us to collect usernames from Reddit, the largest common model is a fixed-effects binomial logistic regression, rather than a mixed-effects one that takes individual (by way of username) into account. We do have username data for xkcd alone; a comparison between (otherwise identical) fixed-effects and mixed-effects models, the latter of which takes username into account as a random factor, did not yield any differences in terms of which factors emerged as significant.

We also ran models on the whole data set, each looking for a two-way interaction between corpus and one of the linguistic factors. The fact that none of these interactions came out as significant is consistent with our hypothesis about parallelism between the corpora, though the small size of the data set from xkcd restricts the extent to which this is meaningful.
Quantifier presence/absence does not come out as significant in either corpus, so we exclude it from both analyses. Table 9 shows a fixed-effects binomial logistic regression run on the xkcd data, and the same fixed-effects model run on the Reddit data is summarized in Table 10.

<table>
<thead>
<tr>
<th></th>
<th>EST</th>
<th>SE</th>
<th>z-VALUE</th>
<th>p-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(intercept)</td>
<td>1.49</td>
<td>0.16</td>
<td>8.03</td>
<td>&lt; 0.001 ***</td>
</tr>
<tr>
<td>MOST-IMMEDIATE CONTAINING PHRASE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VP</td>
<td>−0.31</td>
<td>0.16</td>
<td>−1.94</td>
<td>0.05</td>
</tr>
<tr>
<td>PP</td>
<td>0.58</td>
<td>0.26</td>
<td>2.25</td>
<td>0.02 *</td>
</tr>
<tr>
<td>LEXICAL STEM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sad</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>awesome</td>
<td>1.29</td>
<td>0.31</td>
<td>4.13</td>
<td>&lt; 0.001 ***</td>
</tr>
<tr>
<td>crazy</td>
<td>−0.45</td>
<td>0.19</td>
<td>−2.35</td>
<td>0.02 *</td>
</tr>
<tr>
<td>cute</td>
<td>−1.28</td>
<td>0.23</td>
<td>−5.48</td>
<td>&lt; 0.001 ***</td>
</tr>
<tr>
<td>smug</td>
<td>−0.06</td>
<td>0.40</td>
<td>−0.14</td>
<td>0.89</td>
</tr>
<tr>
<td>DETERMINER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>absent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>present</td>
<td>−0.25</td>
<td>0.16</td>
<td>−1.63</td>
<td>0.10</td>
</tr>
<tr>
<td>STEM * DETERMINER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(other)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>awesome : present</td>
<td>0.68</td>
<td>0.31</td>
<td>2.17</td>
<td>0.03 *</td>
</tr>
<tr>
<td>crazy : present</td>
<td>−0.73</td>
<td>0.19</td>
<td>−3.86</td>
<td>&lt; 0.001 ***</td>
</tr>
<tr>
<td>cute : present</td>
<td>−0.07</td>
<td>0.23</td>
<td>−0.29</td>
<td>0.77</td>
</tr>
<tr>
<td>smug : present</td>
<td>0.15</td>
<td>0.40</td>
<td>0.37</td>
<td>0.71</td>
</tr>
</tbody>
</table>

Table 9. Fixed-effects logistic regression using sum coding, evaluating (for the xkcd data) effects of containing phrase, lexical stem, determiner, and stem * determiner interaction on the nominalizations created by Ø (versus -ness).

<table>
<thead>
<tr>
<th></th>
<th>EST</th>
<th>SE</th>
<th>z-VALUE</th>
<th>p-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(intercept)</td>
<td>0.79</td>
<td>0.07</td>
<td>11.75</td>
<td>&lt; 0.001 ***</td>
</tr>
<tr>
<td>MOST-IMMEDIATE CONTAINING PHRASE</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VP</td>
<td>0.02</td>
<td>0.08</td>
<td>0.28</td>
<td>0.78</td>
</tr>
<tr>
<td>PP</td>
<td>0.16</td>
<td>0.07</td>
<td>2.50</td>
<td>0.01 *</td>
</tr>
<tr>
<td>LEXICAL STEM</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sad</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>awesome</td>
<td>1.77</td>
<td>0.18</td>
<td>9.98</td>
<td>&lt; 0.001 ***</td>
</tr>
<tr>
<td>crazy</td>
<td>−0.30</td>
<td>0.09</td>
<td>−3.41</td>
<td>&lt; 0.001 ***</td>
</tr>
<tr>
<td>cute</td>
<td>−1.36</td>
<td>0.09</td>
<td>−14.61</td>
<td>&lt; 0.001 ***</td>
</tr>
<tr>
<td>smug</td>
<td>−0.38</td>
<td>0.12</td>
<td>−3.10</td>
<td>&lt; 0.01 **</td>
</tr>
<tr>
<td>DETERMINER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>absent</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>present</td>
<td>−0.42</td>
<td>0.07</td>
<td>−6.30</td>
<td>&lt; 0.001 ***</td>
</tr>
<tr>
<td>STEM * DETERMINER</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(other)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>awesome : present</td>
<td>0.49</td>
<td>0.18</td>
<td>2.76</td>
<td>&lt; 0.01 **</td>
</tr>
<tr>
<td>crazy : present</td>
<td>−0.56</td>
<td>0.09</td>
<td>−6.35</td>
<td>&lt; 0.001 ***</td>
</tr>
<tr>
<td>cute : present</td>
<td>−0.12</td>
<td>0.09</td>
<td>−1.29</td>
<td>0.20</td>
</tr>
<tr>
<td>smug : present</td>
<td>0.19</td>
<td>0.12</td>
<td>1.56</td>
<td>0.12</td>
</tr>
</tbody>
</table>

Table 10. Fixed-effects logistic regression using sum coding, evaluating (for the Reddit data) effects of containing phrase, lexical stem, determiner, and stem * determiner interaction on the nominalizations created by Ø (versus -ness).
Being more numerous, the Reddit data reveal a larger number of significant differences relative to the mean, and lower $p$-values all around. However, most of the patterns are the same as in Table 9. A summary of the commonalities is given in Table 11.

<table>
<thead>
<tr>
<th>xkcd</th>
<th>Reddit</th>
</tr>
</thead>
<tbody>
<tr>
<td>yes</td>
<td>yes</td>
</tr>
</tbody>
</table>

The effect of most-immediate containing phrase is comparatively small, but it reaches significance.

PPs are significantly more likely to have a zero than the mean. yes yes

VPs are not statistically distinguished from the mean. yes yes

The effect of lexical stem is both significant and large. yes yes

Awesome is significantly more likely to have a zero than the mean. yes yes

Crazy and cute are both significantly less likely to have a zero than the mean. yes yes

Smug is also significantly less likely to have a zero than the mean. n.s. yes

The interaction between stem and determiner is significant: awesome : determiner-present has more zero than the mean, and crazy : determiner-present has less zero than the mean. yes yes

There is also a main effect of determiner presence, whereby having a determiner decreases the chances of a zero. n.s. yes

Quantifier presence does not reach significance. yes yes

Table 11. Comparison of observations from Tables 9 and 10.

These findings provide statistical verification of highly similar linguistic conditioning in the two corpora. Playful zero-derivation is subject to the same constraints in both corpora, and the differences are all potentially attributable to there being much less data in xkcd (such that patterns may be present but fail to reach significance).

5. Discussion. The variation between -ness and zero in the context of forming deadjectival nouns—even though the zero owes its existence to language play in informal registers—follows the same rules in two different online contexts. While the zero is found more throughout the Reddit data than in xkcd and not all of the specific directions of effect are as anticipated—quantifiers did not affect the variation, and determiners did but not in the way we expected—the broader hypothesis of parallelism in the independent factors and their constraint rankings is upheld.

It is important to note that the rates of zero are not simply correlated with the relative frequency of the constructions and/or lexical items as they are found in these corpora. Frequency may well be involved, such that the more frequent levels within any independent factor are usually the most conducive to zero-derivation, but this cannot be the sole explanation. There are impressionistic correlations with frequency in containing phrase (Table 3 and Fig. 3), within the heads of the prepositional phrases (Table 4 and Fig. 4), and possibly in determiner presence/absence (Table 5 and Fig. 5). However, frequency in our data notably does not capture the effect of lexical stem (Table 2 and Fig. 2), which is both large and significant in both corpora (Tables 8–12). Frequency would

15 A potential objection is that some of the same individuals could have been spending time on xkcd and Reddit in 2008 and 2009. We point out that Reddit users must have far outnumbered the xkcd users even as early as 2008–9—people common to both forums could not have represented more than a small proportion of the Reddit users—and that even if there is some overlap, this is no guarantee of consistency in linguistic rule breaking.

16 This issue could be semantic in nature. The presence of a determiner with an abstract noun forces the abstract noun into a reading that has referentiality to it (the particular awesomeness of something, rather than general background awesomeness), and it is possible that this is what is not as likely to yield the option of zero-derivation.
also predict an effect of quantifier presence/absence, but this does not in any case reach significance. Adding support is the nonce productivity uncovered by Squires (2017), which is inexplicable if frequency is the only driving force that is present. However, we allow for the possibility that frequent collocations and semi-idiomatic structures can help introduce or sustain the zero variant in novel places. For instance, this aspect might well explain why sad is the one stem in Table 7 for which determiner presence increases the proportion of ∅: the existence of the playful idiom *I has a sad∅*, which is used in the sort of casual CMC that we investigate here.

These results provide strong empirical support for the idea that open-ended language play, while intentional and subversive, is highly consistent. At first glance, this finding is counterintuitive. While language in general is necessarily systematic (Weinreich et al. 1968), surely attempts at breaking linguistic rules mean that all bets are off, or at least that things are getting untidy (e.g. Deumert 2005, Storch 2019). Our findings suggest that this is not the case: if our variable is representative, language play is not unique or even distinctive in terms of how it patterns linguistically. Language presents its users with a staggering number of options, but a cornerstone principle of variationist theory is that the choice between them is not random (see discussion in Woolard 2008:440, Poplack & Levey 2010:394). Our findings suggest that this is as true of language play as it is of language otherwise; the fact that one of the variants is playful and not found in reference grammars cannot be inferred from the results.

The ramifications of these findings for the study of language variation and change are multiple and in some cases complex. We begin in §5.1 by outlining what accounts for the systematicity of language play; in the subsequent sections, we discuss some consequences these findings have for variationist sociolinguistics.

### 5.1. Why even rule breaking is rule-governed.

We argue that there is no surprise in our overall findings, for several reasons. Linguistically, successful rule breaking reflects knowledge and skill; it depends on a thorough understanding of the rules (Bergs 2018; see also Goldberg 2019). Socially, if there is a consensus in terms of what the normal rules are, then there is likely to be agreement in terms of how to subvert them (Crystal 1998).

Extending these ideas, we argue that the patterning we have found reflects tension between two opposing forces that constrain all language play (and possibly humor in general): language play needs to be noticeable or ‘extravagant’ (Haspelmath 1999), but it also has to remain interpretable. In other words, the interlocutor(s) must be able to trace the linguistic humor back to the source material (the standard/mundane phrasing that is being played with). This pair of conditions naturally confines language play to a narrow target range. If intended humor is too unadventurous, it fails to be entertaining/novel; if it is too deviant, it becomes confusing or downright nonsensical. In both cases, the attempt falls flat. Our findings suggest that as per language in general, in language play, ‘it is absence of structured heterogeneity that would be dysfunctional’ (Weinreich et al. 1968:101).

This conclusion converges with several made independently by researchers examining linguistic creativity from complementary angles. First is Sebba (2007:31), making a similar point in work on orthographic variation (creative respelling) (see also Metcalf 2011:78). Sebba points out that while *<skool>* is a recognizable respelling,

[a] completely idiosyncratic spelling like *<zgüül>* for *school*, though it might be recognisable—just—in context, seems odd or weird rather than subversive. A text in cipher like *<tdippm>* (which is equivalent to *<school>* in communication-theoretic terms), is incomprehensible to a reader who does not have the key (a = b, b = c etc.). Thus, while a degree of deviation is possible within English orthography, even unlicensed deviation is constrained to a large extent by the conventional norms. (Sebba 2007:31)
Under our interpretation, Sebba’s conclusion can be, and should be, extended to language play on every level of the grammar. Orthographically, morphologically, syntactically, or in any other linguistic way, a desire to push the limits is countered by the need to avoid diverging too far from the surrounding language norms.

Veale (2012), from the standpoint of computational linguistics, investigates linguistic creativity in the form of idioms, metaphors, analogies, and clichés. One broad message of his findings is that linguistic creativity ‘is a delicate balance of the novel and the familiar’ (2012:26); another is that computational approaches are ‘very much suited to the study of creativity’ (2012:iix), given its systematic nature. As we do here, Veale draws support from researchers operating in different spheres. First, he summarizes Hanks’s (2013) THEORY OF NORMS AND EXPLOITATIONS as being about ‘how a great many creative acts in language, including metaphors, can be understood as a controlled departure from a linguistic norm’ (Veale 2012:27). Next, he points out partial overlap with Giora’s (1997, 2003) OPTIMAL INNOVATION HYPOTHESIS, in which linguistic creativity is more enjoyable when it ‘induces a novel meaning (or “response”) in the recipient, while allowing for the recovery of a more typical response’ (Veale 2012:27). Later, Veale describes this recoverability as the key characteristic of successful puns: ‘[o]ur substitutions must be recognized for what they are, and then easily undone’ (Veale 2021).

Cekaite (2018) examines children’s language play in Sweden from an ethnographic-interactional standpoint. She concludes that language play and creativity in general are highly patterned, and identifies from qualitative evidence the same broad forces that we (and Sebba 2007 and Veale 2012) have: ‘ongoing tension between predictability (routine of culturally recognizable activities) and the novelty/improvisational character of in situ performance’ (Cekaite 2018:26).

Finally, Bergs (2018) has been one of several researchers tackling creativity and/or partial productivity from a CONSTRUCTION GRAMMAR perspective (see also Goldberg 2019). His theoretical analysis and our empirical findings converge on the idea that linguistically speaking, ‘we should expect some regularities, systematic mechanisms and constraints that guide speakers and hearers in their rule-breaking’ (2018:284). Creative language use, as he puts it, produces ‘something new and entertaining, which is complex enough to spark interest but not too complex to be processed and understood’ (2018:289). In his conclusion, Bergs independently ties together several of the same strands of research and thought that we have:

Expressiveness may be one of the sources for [playfulness in language]. Huizinga [1955 [1938]] described humankind as homo ludens—‘playing man.’ What he meant was that humans like to play, in any kind of sense of the word. Play can be within a finite set of rules (as in chess) but also beyond (as in music). This relates to what Haspelmath (1999)—building on Keller (1994)—characterized as extravagance. (Bergs 2018:289)

Given the extent of the commonalities in these observations, we conclude that it is reasonable to expect language play of any sort to be fundamentally, inevitably rule-governed thanks to the need to satisfy extravagance and recoverability at the same time. If this is correct, then the fact that morphosyntactic language play is especially likely to emerge out of attested but less-productive options (Aronoff 1983) is a natural side effect.

With that in mind, we now turn to the relationship of language play with, in turn: linguistic variation (§5.2), linguistic change (§5.3), the grammatical surroundings (§5.4), and social meaning (§5.5).
5.2. Language play as a variation factory. It is manifestly not the case that language change occurs only in situations of urgent, obvious, agreed-upon need. Rather, it unfolds continuously, in thousands of directions at once, whether those with the most social power approve or not. In spite of this ubiquity, the question of where specific linguistic innovations come from in the first place is largely mysterious (Labov 1972a: Ch. 7, Butters 2001), as is the wider matter of why language changes at all and whether there is any adaptative significance to the process (Labov 1972a: Ch. 7, Keller 1994, Chambers 2009: Ch. 5, Roberts 2017).

Some pieces of the puzzle are known. While language variation can exist without necessarily giving way to change, the reverse is not true: language change cannot proceed in the absence of variation (Weinreich et al. 1968: 188, Poplack & Levey 2010). Arguably, the more precise question is not where linguistic change comes from, but where variation does, that is, which mechanisms can create a new option for a given sociolinguistic variable.

Language play is not at all the sole reason for innovative variants,¹⁷ and not all linguistic humor yields variation in the Labovian sense. However, we propose that a sufficient amount of language play does this for it to be an omnipresent and powerful force—working on a very small scale—to generate new variants. This gives language play much explanatory power. The fact that language play thrives in casual registers, for instance, goes hand in hand with the observation that ‘the mainstream of evolution of language is to be found in everyday speech, even in highly literary cultures’ (Labov 1972b: 108–9).

Taken individually, cases of linguistic humor are intentional actions, but tiny ones. Opting for language play instead of a straightforward way of referring to something takes extra motivation and effort (Goldberg 2019: 4), but it is unlikely that in playing with language, anyone is setting out to leave permanent changes on the language in question. As Milroy (2003: 152–53) puts it, ‘speakers are not interested in bringing about language change for its own sake’. On top of that, language play may be closely tied to the common ground of a limited set of interlocutors (see Hanks 2013: 215, Cekaite 2018), which limits the extent to which it resonates with a wider audience. Nonetheless, the sheer number of acts of language play that occur ensures that a tiny proportion will live on.

Thomason (2007), summarizing earlier work (Thomason 1997), reaches a similar conclusion about minor intentional changes to language, though her approach to the issue is grounded in language contact. We agree, and propose that it is highly relevant to language play as well:

the question of linguistic possibility of a change—in this case a deliberate change—is settled as soon as a single speaker produces a single instance of the change at a single time. Whether a deliberate change will become a permanent part of that one speaker’s idiolect or of the speech community as a whole is then a matter of social and linguistic probability, not possibility. (Thomason 2007: 45)

¹⁷ Anything that creates divergence can potentially generate variation. For example, language errors, misperceptions, contact between varieties, change from above, taboo avoidance, and various acquisitional situations may also do this (see, inter alia, Keller 1994, Butters 2001, Poplack & Levey 2010, Walkden 2017, Bergs 2018, Goldberg 2019). Noteworthy for overlapping considerably with language play is censorship evasion, which as an element of CMC is beginning to receive attention (Calhoun & Fawcett 2022, Merrill 2022, Tobin & Lee 2022).
In Milroy and Milroy’s (1985) terms, all instances of language play are speaker innovations, but the vast majority are ephemeral as intended; most of them disappear. Even cases of language play that stick around for medium lengths of time as linguistic fads in a given social group may come to seem outdated and undesirable (Zappavigna 2012:102–3). The fact that American newspapers of the 1830s had a brief penchant for opaque initialisms, for instance, might have stayed long forgotten were it not for the improbably long-lived example that is OK—a case we return to in §5.3 (Metcalf 2011). Only a small percentage of cases of wordplay make it out into a community, let alone further, but the ones that do presumably follow channels for diffusion that are shaped by shared knowledge, experience, and/or viewpoints that mean the language play resonates.

Thus, we suggest that language play is a metaphorical factory that generates temporary new variants—by an enormous proportion of users of any language, across all levels of the grammar, in any context or modality that allows informal registers—and that is in constant operation, but whose domain is so small that most of the products are too short-lived and/or too local to be examined easily.

An analogy from particle physics, while a bit unconventional, may usefully complement this description of how language play relates to language change. Trillions of neutrinos race through the planet and everything on it at every second, but they are so incomprehensibly small that they only very seldom collide with any other subatomic particles. This makes neutrinos both wildly common and difficult to observe directly (for an overview, see Jayawardhana 2013).

If language play does indeed overlap with linguistic variation in this way, one testable prediction is that recognized mechanisms of linguistic change (e.g. Tagliamonte 2012:Ch. 3) ought to be well represented in linguistic humor as well. This question awaits future work in order to be properly evaluated, especially on the morphosyntactic level. As a start, it is certainly possible to find people messing with language in ways that recognizably match four-part analogy (Figure 6) or back-formation (Figure 7).

**English grammar crash course: “oo” words**

one goose
two geese
one tooth
two teeth
one foot
two feet
one moose
two meese
one boob	
two beeb

*Source: chradi*

**Figure 6.** Language play based on four-part analogy—aiming for humor in extending English umlaut beyond the normal limits of its productivity. (Source: https://chradi.tumblr.com/post/116137950854/english-grammar-crash-course-oo-words-one-goose/amp.)
5.3. Normalized former wordplay. If what we have proposed is correct, then a small proportion of instances of language play escape into the community for the long term, remaining entertaining for a while but eventually losing their novelty and becoming unremarkable among in-group members. As Maybin and Swann (2007:499) put it, ‘language users have come to be seen as constantly refashioning linguistic and other communicative resources rather than as reproducing static rules of language use’. A tiny part of yesterday’s language play must become today’s ordinary linguistic variation.\(^\text{18}\) Indeed, referring to morphosyntax specifically, Sherzer and Webster (2015) describe language play as ‘a way of continuously recreating grammar … [that] creates the avenue—or groove—for the creation of new grammatical structures’. Under this interpretation, it is less that informality could uniquely excuse morphosyntactic play (Adams 2018) and more that language play fuels variation, and informal contexts are where language play flourishes.

If language play endures, the local norms around it will shift such that it no longer seems extravagant. This means that years after the fact, a lasting variant that started out as language play will be difficult to identify as such; we refer to the result as normalized former wordplay. This is especially true if sound change, folk etymology, and/or subsequent language play have distorted the picture.

What circumstances allow for the (eventual) emergence of normalized former wordplay? Most of the time, as noted, language play is transient, as anticipated, and this simply does not happen. On the lexical level in particular, obvious or over-the-top language play will not easily become an ordinary part of the lexicon (Metcalf 2002, 2011; though see Thomason 2007). Likewise, on the syntactic level, the changes that catch on the most readily appear to be those that are the ‘least obtrusive’ (De Smet 2012:607), that is, the ones that most plausibly seem to fit into an existing system or inventory.

In American English, the best-studied example of normalized former wordplay over the long term is likely the word OK (Read 1963, 1964, Metcalf 2011, \textit{OED online}).

\(^{18}\) As Hanks (2013:275) points out, even a few of the nonce words in Lewis Carroll’s well-known ‘Jabberwocky’ have become established as normal in English. On the one hand, the poem occupies a niche in popular culture, and thus has an advantage. On the other, if the process we call normalized former wordplay can happen even in cases this abstract—surreal humor based on words that have little or no meaning—then it stands to reason that linguistic humor of a much more accessible and prototypical sort is at least as susceptible to becoming familiar and ordinary.
It began life as a very deliberate joke, just one of many coined by *Boston Morning Post* editor Charles Gordon Greene (Metcalf 2011:34). A preexisting supralocal newspaper trend of creating novel initialisms overlapped with a Boston-area fad for humorous respellings, yielding *o. k.* for *oll korrect* for *all correct* (Metcalf 2011:Ch. 2). In our framing, while the expected abbreviation *a. c.* would have risked being insufficiently extravagant to hit the target zone for wordplay, *o. k.* did better in this regard—though given that it was opaque enough to risk being too divergent to make sense to readers, Greene did have to overtly explain at least twice early on that *o. k.* was meant to stand for *all correct* (Metcalf 2011:Ch. 2).

The fact that the origins of *OK* lie in intentional language play—in a newspaper editor being goofy on the page—was still in popular consciousness for a while afterward (Metcalf 2011:96–97), but then was for a long time lost entirely. Indeed, the word itself became so ordinary that adding humor to it required additional language play, yielding offshoot forms such as *okey-dokey* (Metcalf 2011:148). Metcalf even speculates (2011:26–27) that the key to the unlikely success of the word in the first place could have been ‘the almost universal amnesia about the true origins of OK that took place early in the twentieth century’, thus unleashing false etymologies and reducing the possibility of stigma on the basis of etymology related to intentional silliness:

> By the early twentieth century, OK was no longer a joke. The letters *O* and *K* did not prompt memories of the misspelled *oll korrect*, nor did they stimulate alternative explanations. In the nineteenth century, OK was recognized as a humorous abbreviation, but in the twentieth, it was understood merely as an arbitrary combination of letters of the alphabet. (Metcalf 2011:147)

Few cases of language play are coined in print media in this way; the rediscovery of *OK* as a case of normalized former wordplay might have been impossible if the moment of creation had not been unusually well documented.

If *OK* is any indication, then indeed, most wordplay does not make for permanent additions to the language (the thought of *o. w.* for *all right* still seems very strange), but when language play beats the odds and does set off lasting change, the later task of determining that its origins lie in intentional, humorous deviance is very difficult. New variants/coinages that come from wordplay in vernacular speech/sign are liable to lose their original connotations of facetiousness as they spread across ties in the social network, or across several years, or both. Of course, it took some degree of happenstance to ensure that *OK* remained in the language (Metcalf 2011:24–25), but if chance events have any role to play in language variation and change (Butters 2001), then ‘anomalies are not only possible but inevitable’ (2001:210), ‘just as, occasionally, someone hits the jackpot on slot machines’ (2001:209).

Given that norms cannot be extricated from power differentials, social factors can serve as a helpful guide to where normalized former wordplay might be found. Many of the cases in standardized varieties of American English can be predicted to have originated in African American Language (AAL). The vibrant linguistic creativity of AAL (Smitherman 2006:Ch. 4), like other Black cultural practices, is frequently subject to simultaneous disparagement and appropriation on the part of white America (see e.g. Eble 1996, Smitherman 1998, Cutler 1999, Hill 2008, Holliday & Squires 2021). As Smitherman (2006:112) puts it, ‘[g]it-go, *dis*, chill/chill out, *cool*, twenty-four-seven, *boom box*, and on and on are used so readily and frequently, in both speech and writing, that it’s often difficult to discern where Black Language ends and White Language begins’. This is not exclusively a lexical phenomenon, either; even the morphosyntax
of AAL is susceptible to appropriation, though often without the nuances of the original (Smitherman 2006:116; see also Ilbury 2019).

As a recent example that may go on to yield normalized former wordplay in standardized American English, Roth-Gordon et al. (2020) trace the history of *on fleek*. This phrase, coined in a short Vine video by nineteen-year-old Kayla Lewis in a ‘creative/defiant act of linguistic innovation’ (Roth-Gordon et al. 2020:110), is a novel synonym for ‘on point’ or ‘excellent’. Subsequently, *on fleek* was vacuumed up by white America, stripped of context, and used clumsily in corporate advertisements (Roth-Gordon et al. 2020; see also Smitherman 2006:Ch. 6). The coinage on social media allows for an unusually panoramic view of the lifespan of an item born of Black linguistic creativity and seized upon by those with much more power, but the process itself is nothing at all unprecedented. As Smitherman (2006:113) observes, ‘[w]ords that were once frowned upon and dismissed as “Black slang” in my youth now come forth from the mouths and pens of White folk on the regular’.

An extreme, highly localized example of language standards changing rapidly and creating abundant normalized former wordplay in stages—until the output has not only lost its humorous connotations several times over but eventually bears little resemblance to the input—is described by Diehl and Kolodzey (1981). Their target of study is an unusual natural experiment in which two sisters’ childhood language game (originally consisting merely of adding [ʌm] to syllables) evolved over two years into a much more elaborate shared code (called ‘Spaka’), largely unintelligible to other English speakers and divergent from normative English in terms of the phonology, morphology, and syntax. During this two-year interval, Spaka ‘was developed and learned not as an explicit set of rules, consciously applied, but as an implicit set of rules arising out of verbal play and interaction. In this sense, Spaka appears to be much like any other language’ (Diehl & Kolodzey 1981:406).

We suggest that Spaka is unusual only in its extent, and not in its fundamental nature. Most networks and in-groups involve not only casual language use but considerable shared history and pragmatic common ground; these attributes spawn language play readily (see Storch 2019). When it comes to language within immediate families, for instance, Wertheimer (1973) introduces the term *familect*. Building on the observation that many families ‘have some phrases or usages that are unique, and which are incomprehensible or at least sound odd to outsiders’ (Wertheimer 1973:5), he describes a familect as ‘a kind of microdialect … [of which] idiosyncratic lexical items and usages may become so automatic that it is hard even to think of them in other contexts; they sound odd to outsiders but of course seem perfectly natural inside the family’ (1973:8). While some elements of familects may come about via dialect contact, misperception, or parents observing language acquisition, many are due to in-group language play (see, for instance, Van Herk 2012:10).

Linguistically and beyond, norms are forged, negotiated, and redefined within the group (e.g. Milroy 1992, Bucholtz 1999, Eckert 2000, Johnstone & Baumgardt 2004, del-Teso-Craviotto 2006, Cekaite 2018). A local case of normalized former

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19 Open-ended playful registers online such as the aforementioned leetspeak, LOLspeak, and doge also give way to the development of reliable grammatical intuitions within individuals who become immersed in them (Gawne & Vaughan 2011, McCulloch 2014, Punske & Butler 2019).

20 The first author does not remember uttering artifacts of language acquisition such as an excited-sounding [ˈʌŋ.ɡə], but one of the original witnesses brings up the matter routinely.
wordplay—the acceptance and use of a linguistic inside joke until it is no longer able to convey extravagance to in-group members—reflects the in-group norms changing. Making a familct item truly humorous well after its introduction may require altering it further—subverting a norm anew, along the lines of *okey-dokey* as per Metcalf (2011:148). Therefore, as with trademark genericization (Clankie 1999), language play that sticks around long enough may end up being a victim of its own success: the extravagance wears off, and thus the newfound familiarity of the word defeats its original purpose. This routinely happens on the scale of a small group such as a family, as these attestations suggest; sometimes, as with *OK*, a word acquires a much longer and broader existence.

### 5.4. Language play and accidental gaps in the grammar.

Portraying language play as a variation factory that can seed language change, while describing the optimal target zone for wordplay as heavily constrained and anchored at a short distance from the existing norms, raises a major question: does language play signal anything about the range of potential directions for language change in the phonology/morphology/syntax of a language at a given point? In other words, if someone is playfully treating a mass noun as a count noun by saying ‘I ate a food’, does this constitute evidence that this word in this language could well undergo this semantic-syntactic change in the near future? No individual potential change can be guaranteed in advance (assuming that language change is not deterministic; see Keller 1994, Butters 2001, Labov 2001:462, D’Arcy 2017:140, Walkden 2017:406), but is this at least suggestive?

We expect that a substantial amount of additional work across subdisciplines will be necessary to evaluate this idea to a satisfactory extent. However, we suspect that the answer is ‘yes’, and that this is one of the reasons why language play holds so much value for the study of language variation and change. We propose that language play can speak to what Weinreich et al. (1968) call the ‘constraints problem’, that is, the task of ‘determin[ing] the set of possible changes and possible conditions for change’ (1968:183).

There are many challenges associated with looking for normalized former wordplay in retrospect. The inevitable paradox of this kind of shift in norms is that although the original humor was deliberate and noticeable, extravagance decays over time and with repeated exposure, meaning that the first few tokens of a novelty are very hard to see for what they once were—divergence created for effect. This explains why changes born of language play can amount to long-term change from below rather than above (see also Weinreich et al. 1968 on the ‘embedding problem’). Language changes in an emergent way (Keller 1994), and as with *OK*, the origins of specific innovations start seeming murky and/or inexplicable fairly quickly (Metcalf 2011).

We suggest that language play has easy access to the abstract space that surrounds a linguistic variable—where overlap exists with similar structures and/or forms (see Aaron 2010, Dinkin 2016, Brook 2018). This sets up a prediction that language play is anything but willy-nilly; rather, the set of places in the grammar where we observe it ought to follow logically (in some way not yet well understood) from the present properties of the language and variety in question. Some types of language play

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21 Nassenstein (2015:86) approaches this same point in describing Langila, an elaborate playful register and/or youth variety of Lingala; once a product of ‘nonconformity’, Langila has now reached ‘a turning point of losing its originality’, especially after widespread exposure in CMC.
should be attested, others not (for being too deviant\textsuperscript{22}). This points to the gradience of ungrammaticality, which is an idea that could be framed in any number of ways (for instance, see Goldberg 2019 for a construction grammar approach). As Blamire (2016) points out, if morphosyntax is like phonology, then we could broadly describe a distinction between \textit{accidental gaps} and \textit{systematic gaps} as per Halle (1962) (see also Hochster 1973:293–94). While *blick and *bnick are both nonwords of present-day English, *blick is a \textit{potential} word that just happens not to exist, while *bnick is ruled out by the phonotactic properties of present-day spoken English.

If morphosyntax is the same, then language play ought to be constantly shining light on accidental gaps in the grammar (rather than systematic gaps). If a structure or morphosyntactic option corresponding to an accidental gap is used (for the sake of either wordplay or a creative syntactic workaround), commentary may call it unusual/offbeat but parseable—something along the lines of Zwicky’s (2010) description of the nominal $\text{unsatisfactory}\emptyset$ as ‘colloquial but … effective’.\textsuperscript{23} A systematic gap, by contrast, is something much more overtly ruled out by the grammar: it does not easily appear even in language play, and is so wildly offset from the standard that the users of a variety either cannot agree on how it works or agree that their language/dialect specifically does not do this. It is unlikely to be attested at all, even in speech errors.\textsuperscript{24} In the terminology of Veale (2012, 2021), it is not recoverable enough to be the target of language play.

Under our proposal, zero-derived deadjectival nouns are an example of an accidental gap in the standardized grammar of present-day English. They have some marginal existence, as demonstrated by the few lexical items that undergo this conversion unremarkably (\textit{good}, \textit{evil}, \textit{cool}, \textit{sweet}, \textit{sour}, etc.) and by nonzero productivity with nonce words (Squires 2017). It is not surprising that an unproductive morphological strategy could become more productive through language play (see also Goldberg 2019:62–65), extending to additional adjectival stems that, like the items in the preexisting lexical niche, capture evaluations.

One similar case study in terms of recent morphosyntactic play in vernacular English is the \textit{because X} construction; see Blamire 2016, Bohmann 2016, and Adams 2018. As these authors point out, it is morphosyntactic play that has spread and attracted attention both in the mainstream media and from linguistics researchers. The notion of an accidental gap in the grammar applies straightforwardly here; Blamire (2016:39) argues that the change is based on intentional language play but that ‘nothing about \textit{because} has changed lexically … [t]his construction fills a gap in English grammar in a way that was already possible, but was just not in use’.

Building on this, we suggest that accidental gaps may be filled briefly by wordplay at any point, usually without lasting into the long term. This gives rise to isolated small numbers of tokens along the way, as Blamire (2016) highlights for \textit{because X} (see also

\textsuperscript{22} A friend of the first author’s once attempted to explain a complex idea and ended with the facetious ‘Sense it not does make?’. While certainly extravagant, this may be approaching the limits of recoverability.

\textsuperscript{23} Children play with the levels of the grammar they are in the process of learning, which attests to how easily play targets existing norms in whatever form. It is present in young children and becomes even more sophisticated as they age (Cekaite et al. 2014).

\textsuperscript{24} If this distinction between accidental and systematic gaps in grammatical rules is sound, closer attention to how they manifest in language play versus speech errors is warranted, given that both of these serve as sources of insight into, for example, phonology (Sobkowiak 1990). Indeed, investigations of spelling variation confirm that errors are distinct from shared language play and are recognized for what they are by in-group members (see Hilte et al. 2019).
Adams 2018). We propose that the same is true of zero-derived deadjectival nouns. If so, it should be possible to find precedents in bits of playfulness from prior decades. Smitherman (1998) points out the AAL adage ‘God don’t like ugly∅’; Bucholtz (1999) has one in the pseudonym for the club established by her ‘nerd girls’—‘Random∅ Reigns Supreme’. A pair of examples from a novel written in the early 1980s can be found in 10.

(10) ‘That’s just a rubber tree from Woolworth’s. I got it when it was little—only ninety-five cents’ worth of little.’
  ‘Well, it must be a hundred dollars’ worth of big now.’

(Annie on my mind, by Nancy Garden, 1982)

Departures from norms are understood via comparisons to those norms (see Veale 2012:59), but as norms are unstable over time, what qualifies as a gap of any sort in any language may change dramatically. As language play takes advantage of the subset of novel/ungrammatical formulations that are only slight deviations, we argue that it is also a reflection of where those gaps are at a given stage in the history of a given variety.

5.5. LANGUAGE PLAY, SOCIAL MEANING, AND EXTRAVAGANCE/SALIENCE. Humor depends heavily on the sociocultural context—but the relationship is bidirectional, as humor also influences the immediate social landscape. Language play may be best described as a co-creation of the interlocutors (Cekaite 2018). It has multiple functions in a group setting; to provide just two examples, it ‘can work as a cultural resource for establishing social alignments and solidarity, and it can simultaneously be used to delineate the social boundaries of a group’ (Cekaite 2018:27).

There is much work to be done on the pragmatic subtleties of humor, most of which lies outside of the scope of the present article (for more details on this topic, see Attardo 2017). For now, worth acknowledging is that language play is effortful (Goldberg 2019:4) and incurs a certain amount of risk: ‘[e]very act of linguistic creativity is a calculated investment’ (Veale 2012:153; see also Keller 1994). Whether the language play has been successful (understandable and entertaining) is up to the interlocutors, who may well evaluate it explicitly (Cekaite 2018). Creativity is in theory admirable, but the output of successful play is necessarily weird to at least some extent; it explicitly clashes with the norm even when the core meaning is the same (Irvine 2001, Sebba 2007, Hanks 2013, Goldberg 2019). As Storch (2019:164) puts it, language play asks onlookers ‘not only to reply to what has been said but also to evaluate how something has been said’.

Social meaning is about contrast (Irvine 2001, Eckert 2008, Beltrama 2020), so even minor cases of language play can very quickly acquire a [+in-group] meaning among those in the know. Zimmer et al. (2022:422), for instance, refer to how ‘[p]articular internet subgroups can foster their own playful misspellings for in-group solidarity, and such is the case with stocks becoming transmogrified into stonks by online traders’.

Even the kinds of language play that do not overtly hinge on social meaning set up an

25 Similarly, Grieve et al. (2016:113) find in their study of emerging lexical items in a sizeable Twitter corpus from 2013–14 that novel words ‘are often characterized by very infrequent use for years until they eventually emerge and see relatively widespread usage’.

26 Perhaps our zero-derived deadjectival nominals were just a bit more of interest to Redditors around 2008 than to the denizens of the xkcd board—which could yield the same grammatical constraints, but significantly more zero on Reddit overall, as per Table 8.
immediate clash with the preexisting linguistic norms—and possibly convey an irreverent stance with respect to one or more social norms as well, depending on the specifics (see Sebba 2007).

As noted, some forms of language play are overtly born of linguistic parodies and/or personae, and are thus directly linked to social meaning from the outset (Basso 1979, Hill 1998, Chun 2004, Rosa 2016, Slobe 2018, Robertson 2022). The humor in these cases fails if the indexical value of the features being played with does not get across—if it is not legible, in the Eckert (2019) sense (see also Beltrama 2020)—and yet whether something is legible can itself be used to draw attention to the boundary between in-group and out-group. For instance, in work on Multicultural Toronto English, Denis (2021) documents a clever use of the local insult bucktee (a loanword from Somali) as a pun-based taunt at a local basketball game. A sign reading ‘Milwaukee Bucktees’, held up by a Toronto local, ‘signals solidarity with other Torontonians and simultaneously insults Milwaukee Bucks players and fans while leaving them squarely outside of the proverbial gate, not even cool enough to understand they have been insulted’ (Denis 2021:575).

In our proposal (see also §5.4), the small actions of everyday language play are all individually intentional and readily interpreted as such, but the choice of which cases go on to be the few survivors that endure as normalized former wordplay is not. This process allows for broad change from below that emerges from (small-scale) agency of the individual, though it is not necessarily the only one that does. Regardless, we agree with Thomason (2007), albeit on different grounds, that deliberateness should not be overlooked as a factor in language change.

Evaluation and metalinguistic commentary are next-door neighbors, meaning that language play readily attracts opinions from onlookers (see Dorleijn 2019). They may not hold back even if their opinion is negative—for instance, if language play fits into a trend starting to strike onlookers as outdated (Zappavigna 2012:102–3). But when language play is admired for its cleverness, the commentary is telling. Future work on metacommentary surrounding language play will prove to be informative, as it already is for other aspects of language in use (Johnstone & Baumgardt 2004, Dorleijn 2019). In Figure 8, for instance, as per Lieber’s (2009:70) ‘morphological creativity’, the first user dryly applies an unproductive ablaut strategy to create an irregular past tense for the colloquial verb yeet ‘fling’; the second user reconstructs what the first user did and signals approval (see also Zimmer et al. (2021:118–19), who recognize ‘yote as a humorous past-tense form’).

**Nanani**

February 24, 2021 at 4:01 pm

*What if you attached it to the tail? Would it just get yote off or would the wagging count?*

**J!**

February 24, 2021 at 4:20 pm

*I’m crying laughing at the irregular conjugation of “yote.”*

*Figure 8. Wordplay; appreciative description that indicates having understood the joke (from https://www.askamanager.org/2021/02/a-drunken-cowboy-gingerbread-house-chaos-and-other-office-contests-that-went-badly.html).*
Linguistic metacommentary online may even help document wordplay that has already been through multiple iterations and would otherwise soon seem unaccountable. For instance, in a dramatic example, Figure 9 shows @FourArmsDemon capturing the process by which multiple languages and multiple modalities have contributed to a spectacular play combination.

![Figure 9](https://twitter.com/fourarmsdemon/status/1218021151252865026)

The question arises as to what extravagance has to do with sociolinguistic salience. This is a term used to mean several overlapping things in the study of language variation and/or language change (see Woolard 2008), but it is fundamentally ‘the relative ability of a linguistic variable to evoke social meaning’ (Levon & Fox 2014:185; see also Labov 2001:25–28). One crucial difference is that extravagance—‘talk in such a way that you are noticed’ (Haspelmath 1999:1055)—is primarily about how individuals act, and presumably maps onto a subset of style, which is inherently creative (Irvine 2001). Salience is more about what the surrounding people perceive. That said, if ‘[a]n utterance is particularly likely to have special significance [when] it violates conversational expectations’ (Acton 2014:iv), then linguistically marked and/or infrequent output will tend to attract stronger social meanings (see Beltrama 2020). This makes language play, if it sticks around more than very briefly, a sponge for pragmatic nuances and/or newly acquired indexical associations.

6. Conclusion. The notion that language is patterned rather than random is fundamental to variationist sociolinguistics (Weinreich et al. 1968). The idea that even language play is rule-governed is not new, though it has been suggested mostly on the basis of either qualitative studies (Kirshenblatt-Gimblett & Sherzer 1976, Lefkowitz 1989:313, Crystal 1998, Sebba 2007, Gawne & Vaughan 2011, McCulloch 2014, Blamire 2016, Cekaite 2018) or theoretical analysis (Iverson & Salmons 2005:211, Bergs 2018). One of our main contributions has been to uncover quantitative evidence using variationist methodology. On the most immediate level, we find that our case of language play is governed by linguistic factors, just as language variation in general is. If extravagant zero-derivation of abstract nouns from adjectives in present-day English is an indication, then language is so fundamentally inseparable from rule-governed behavior that breaking the rules is a process that is itself constrained by rules. McCulloch (2019:7) makes a similar point: ‘It’s not just that we make patterns. … Even when something looks incoherent to an outsider, even when it’s intended as incoherent for an insider, we as humans are still practically incapable of doing things without patterns’. It is possible that even when language users intend to subvert current local norms, a language cannot realistically be bent enough to violate the baseline level of linguistic systematicity—hence language as a self-regulating system.
Next, we have addressed the question of why this should be, proposing that language play is crucially constrained by the counterbalancing forces of extravagance in the Haspelmath (1999) sense and comprehensibility as per Veale (2021). The fact that this conclusion and those of several researchers addressing adjacent questions about linguistic creativity independently converge (Sebba 2007, Veale 2012, Bergs 2018, Cekaite 2018) lends credibility to all of them.27

We have also explored some of the possibilities in terms of what language play means for the study of language variation and change. In sum, if humor is about defying expectations, if defying expectations necessarily means that language is constantly and universally used in innumerable new and creative small ways, and if even a fraction of those go on to endure, then the human instinct for producing humor eventually guarantees language change, even if we pretend (for the sake of the argument) that nothing else ever does. A small subset of the very large amount of ephemeral variation generated by wordplay yields, perhaps in conjunction with chance or luck (Keller 1994, Butters 2001, Metcalf 2011) or well-established pathways of borrowing/appropriation between social groups (Cutler 1999, Smitherman 2006:Ch. 6, Roth-Gordon et al. 2020), a few innovations that remain in the language over the longer term.

Language play, from a variationist perspective, is thus a largely untapped gold mine.28 Though some cases are sure to be unwieldy and harder to study quantitatively, our findings suggest that wordplay enters the language already subject to linguistic patterning. Thus, language play is a subset of linguistic variation that is not distinguished by any linguistic or quantitative properties. It is intentional subversion for effect that is recognized as such by onlookers at the time of production. If the reason it is not interpreted as language play is that it has lost its original humorous connotations (either through repetition or through distance from the source across social networks), then it is normalized former wordplay in the group/community. If normalized former wordplay spreads enough, it may affect the language permanently in the form of a change from below, and its original facetiousness may be tremendously difficult to perceive in retrospect.

Worth pointing out is that our proposal does not necessarily speak to the famed ‘actuation problem’ (Weinreich et al. 1968:102, Walkden 2017). While our proposal may address the related issue of what the onset of change could look like on the most local level (Walkden 2017:410), it does not attempt to account for what among examples of language play distinguishes the very small minority of cases that leave an indefinite mark (see Butters 2001, Milroy 2003). Along similar lines, are some types of language play more likely than others to turn into long-lasting change? This is not yet known—though

27 A referee draws a very interesting link between what we have proposed as an extravagance-recoverability trade-off in language play and what Lieberson (2000) calls the ratchet effect in baby-naming (and other taste-based) trends over time: ‘new tastes are usually based on existing tastes; what is most appealing is a modest variant on existing tastes. This is because new developments are judged in terms of a framework based on the existing practices’ (Lieberson 2000:93; see also Labov 2010:194–95). In other words, creativity in naming practices favors slight deviation from the present standards, and the effect amounts to a similar invisible-hand mechanism (Lieberson 2000:93). This commonality suggests connections between language play and broader novelty-seeking behaviors in humans that should be taken up in subsequent research.

28 Related is the fact that multiple researchers in recent years have pointed to language games in the psycholinguistics laboratory as an underused source of insight, with respect to either diachronic linguistics (Roberts 2017), language change through the lens of indexicality and cultural values (Sneller & Roberts 2018), or even the evolution of language (Perlman et al. 2015). While our own methods are not experimental, we agree with these authors that the intersection of play and language is unduly neglected (see also Sherzer & Webster 2015).
several sociolinguistic variables are known to attract playful and noticeable new variants, most notably intensifiers (Ito & Tagliamonte 2003).

What our work does target are parts of some larger questions: where new variation comes from, to start, and the matter of why language changes in the first place—why ‘the vernacular is always in motion’ (Chambers 2009:241, quoting a translation from Roman scholar Varro). Crystal (1998:53) describes the impulse to play with language as an apparently ‘ancient and deep-rooted element in the human condition’. Language play is present in young children and becomes even more elaborate as they grow up (Iwamura 1980). If language is a human universal, and if the impulse to play is as well, then it is reasonable to expect their combination to be ubiquitous across time, space, and culture. If anything, the two processes are inextricable (see Sherzer & Webster 2015). That is, creative use of language (for the sake of humor or anything else) is ‘an integral feature of conversation’ (Hanks 2013:272) rather than a bonus (see also Black 1968, Stanlaw 2020). This is a key to the inexhaustible flexibility of human language from one generation to the next. Since humans are going to play—all the time, in countless ways—any language in active use had better be able to keep up.

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