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When Language is Played: Looking into Linguistic Creativity through Language Play

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ABSTRACT

This article opens a window on linguistic creativity through an in-depth discussion of language play. To this aim, language play is initially conceptualized from a socio-cognitive perspective. 'Language play for fun' and 'language play for practice' as two dominant approaches in the relevant literature are, then, touched upon. Afterward, the paper elucidates how language play, in its various manifestations, can inform and influence linguistic creativity. In this respect, a theoretical (linguistic) and a socio-pragmatic perspective are presented. In particular, the paper addresses the possibility of playing to 'language' outside the box (i.e., to go beyond the conventional systemic constraints of language). Highlighting the ubiquity of language play, it also considers Wittgenstein's notion of 'language games' (or *Sprachspiele*). Furthermore, the performative power of playful creativity to make and 'unmake' language in society is elaborated on. The article contends that language play may offer valuable insights to extend the borders of linguistic creativity. This argument is further developed under the purview of 'complexity theory,' 'soft computing,' and 'computational linguistic creativity.' Finally, the paper advocates an 'integrated science' approach to advance play-based research on linguistic creativity.

KEYWORDS:

Language play, Linguistic creativity, Play, Humor, Playful creativity, Computational linguistics

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LANGUAGE PLAY: CONCEPTUALIZATION AND CLASSIFICATION

Despite intuition-based or operational definitions, language play has an evasive, fluid nature. Underscoring its blurred boundaries, Cook (2000, p. 101) asserts, "[p]eople are playing when they say and believe that they are playing." Far from being a flaw, however, this fuzziness, in essence, points to the diversity and versatility of language play (see also Heidari-Shahreza, 2018a). It speaks of the vast (and uncharted) waters of language, *when it is played*. That said, a shared understanding of language play is vital for any scientific, rigorous inquiry into this construct. In light of the relevant literature and with an eye to the aim and scope of this article, language play is conceptualized *vis-à-vis* creative language use. Language play, within such purview, can be construed as the creative employment and manipulation of linguistic elements and features for various intentions (Bell, 2012; Cook, 2000; Heidari-Shahreza, 2018b). In simple terms, any innovative use of language can potentially be labeled as language play. Hence, language play can be operationalized quite broadly from primitive humorous puns (for/by children) to the verbal artistry of literature laureates (see also Crystal, 1998, 2008). Likewise, an ironic compliment in a daily conversation (e.g., your hair looks great!) or the sophisticated tapestry of messages a stand-up comedian communicates may serve as instances of language play (see also Heidari-Shahreza, 2023a).

Different perspectives can be taken to conceptualize and account for language play. From the vantage point of linguistics, the novelty in marshaling linguistic resources or the overarching notion of (linguistic) creativity lies at the heart of language play (see Figure 1). This is, in fact, the perspective on which this article is mainly based. Language play can also be 'social play' (so to speak). That is, it is instigated within a social context to achieve a wide range of social functions (Heidari-Shahreza, 2021, 2023; Holmes et al., 2019). For instance, language play (as in jokes or banters) may be used in a circle of friends to strengthen the ties between the members, contributing to in-group solidarity, immediacy, and cohesion. This pro-social, 'affiliative' function of language play usually appears in the guise of being funny (or more technically, 'doing humor') in social interactions (Davies, 2003; Ziv, 2010). From such a socio-pragmatic standpoint, Tarone (2000) defines language play as "being typically a socially-constructed phenomenon which is non-literal, inherently entertaining, and rule-oriented" (p. 32). Yet, language play may prove to be anti-social and contentious, being employed as a communicative strategy (and a 'mitigation device') to successfully deliver face-threatening acts (FTAs) in various social contexts, particularly where speaking tongue-in-cheek (or humorously) can be safer, more polite, and/or more effective (Waring, 2013; Heidari-Shahreza, 2023a, b). Sarcastic talks may serve as the epitome of such function of language play.

Within the cognitive viewpoint, language play is inherently a play with incompatible semantic scripts or schemata (Attardo, 2020; Heidari-Shahreza, 2021). In other words, language play, especially the humorous one, is based on the recognition and resolution of some cognitive incongruity (Martin & Ford, 2018). The following joke can perhaps elucidate the incongruity-resolution account of language play (and humor):

Student 1: "The dean announced that he is going to stop drinking on campus."
Student 2: "No kidding! Next thing you know he'll want us to stop drinking too." (Deneire, 1995, p. 290)

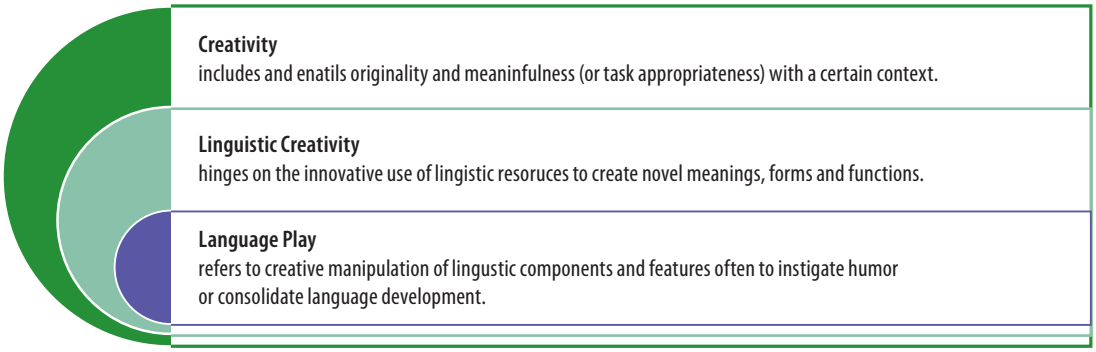


Figure 1. The relationship between language play and (linguistic) creativity

The humorous effect of the joke is achieved collectively through a) the ad-hoc meaning or the semantic script readers assume based on Student 1's utterance, b) the recognition of a second competing script *via* Student 2's response, and c) the resolution, or simply making sense, of the mismatch between the two assumptions. That is, the 'aha moment' when readers realize they have been led down a 'garden path' (in the psycholinguistic sense) turns into the 'ha-ha moment' when they normally begin to laugh at the joke (Heidari-Shahreza, 2018a; Martin & Ford, 2018). It is worth noting that language play at the syntactic level makes all this possible. In other words, the creative use of the syntactic constituent, verb+ gerund paves the way for new interpretations.

Defensibly, language play can still be approached from other perspectives, making it an interdisciplinary and a multidisciplinary avenue of research; a notion that will be elaborated on toward the end of this article. As two prominent approaches, 'language play for fun' and, to a lesser extent, 'language play for practice' have received the lion's share of the researchers' attention in the past decades (Bell, 2012; Heidari-Shahreza, 2018c). In the following sections, more information is provided on these two areas of research.

Language Play for Fun

Language play for fun primarily refers to the creative use of language with the intention of (self-)amusement and laughter (Cook, 2000; Heidari-Shahreza, 2018b). It is well-rooted (but relatively not well-tooted) in fields of study such as philology, literature, rhetoric, gelotology, humor, etc. These areas of inquiry have made connections with this type of language play, albeit employing different nomenclature and often superficially. In particular, within humor scholarship, 'verbal humor' shares notable affinity with ludic language play. As a linguistic-based type of humor, it can be regarded as a shared territory between gelotology and linguistics (Attardo, 2020; Heidari--Shahreza, 2018a).

Within the realm of second language acquisition (SLA, henceforth), language play for fun is better known since Guy Cook's seminal monograph, *language play, language learning* (2000). Cook

(1997, 2000) primarily distinguishes between two major categories of humorous language play: (a) play with language form or formal play and (b) play with language meaning or semantic play. Whereas both types serve the aim of entertainment, the former is based upon the alteration of formal components and features of language. The latter, in contrast, is a "play with units of meaning, combining them in ways which create worlds which do not exist: fictions" (Cook, 1997, p. 228). As Figure 2 indicates, a third type of humorous language play can also be conceptualized, that is, play with language use or pragmatic play (see also Waring, 2013; Heidari-Shahreza, 2018b).

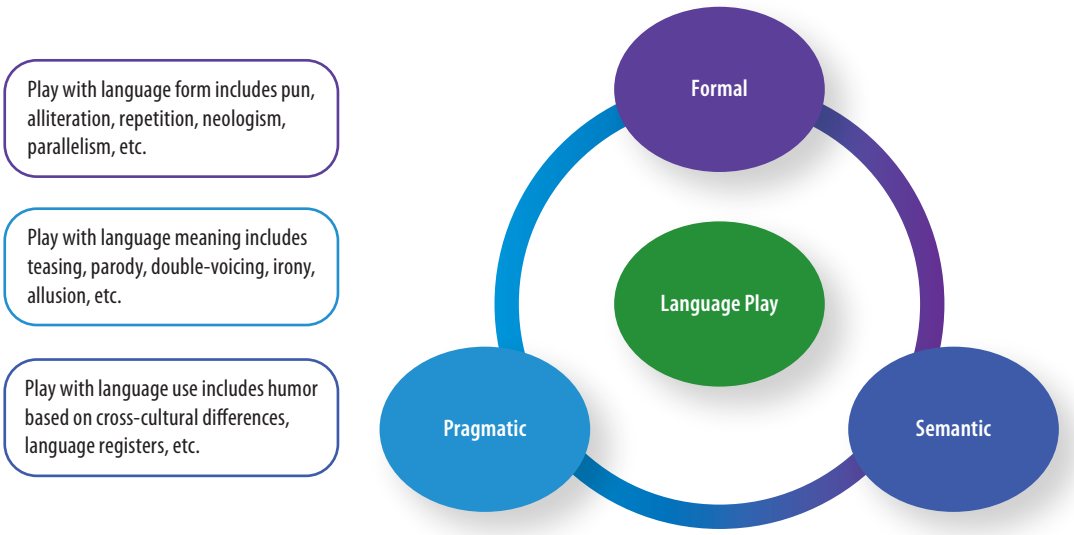


Figure 2. Different types of language play (formal, semantic and pragmatic)

Cook (2000) highlights language play as a communicative act which pivots on the creative use of language at various levels. He identifies several formal, semantic, and pragmatic characteristics of this communicative act (p. 123). At the formal (syntactic/lexical) level, the focus might be on "patterning of forms, emphasis on exact wording, or repetition;" at the semantic level, "indeterminate meaning, vital or important subject matter, reference to an alternate reality, inversion of language/reality relation" can be at work; and at the pragmatic level "focus upon performance and upon the speaker and/or writer, use in congregation and/or intimate interaction, creation of solidarity and/or antagonism and competition, enjoyment and/or value," among other things, may be employed to play with language use (see also Davies, 2003; Waring, 2013). In the following excerpt, a group of Iranian EFL learners are engaged in a classroom interaction (more technically, a playful language-related episode, PLRE) to complete a conversation worksheet with several blanks in its speakers' turns (see Appendix A for transcription conventions).

01 S1: well! Just one blank! =
02 S2: =goodbye, (1) goodbye or see you (suggesting an answer for the end of conversation blank).
03 S3: no! ☺ Goodbye, excuse me, see you, take care, say hello to family! (1) All of them! ☺
04 S1: (in Persian) HHH it takes half an hour to say goodbye in Persian, but they do not make it (i.e., saying goodbye) long.
05 S2: ☺ one is enough in English. ☺
06 S3: HHH for us ten. (1) ☺ or they think you are not polite, (1) friendly. ☺

(from Heidari-Shahreza, 2018c)

In the talk-in-action above, a play frame is instigated based on the cross-cultural differences in the *use* of parting expressions between the learners' L1 (Persian) and their L2 (English). This pragmatic play draws upon the sociolinguistic tendency of Iranians to employ several phrases jointly to say goodbye especially at the end of family gatherings. It stands in sharp contrast with its English counterpart (see Heidari-Shahreza, 2018c for further information).

Language Play for Practice

Within a linguistic, goal-driven framework, a second approach to language play can be identified as language play for practice. This type of language play was put forth by Lantolf (1997) on the grounds of Vygotsky's 'private speech' (see also Vygotsky, 1980, 2004). It views language play primarily as a means for language practice and further development. Language play for practice can be distinguished from language play for fun in several distinct ways. First and foremost, ludic language play is principally intended to amuse and often depends on contextual cues or rhetorical devices such as laughter (or smile), marked vocabulary, and prosody (Cook, 2000; Heidari-Shahreza, 2018b). Under the purview of SLA, language play for fun is generally built upon the use of already-acquired L2 forms within social interactions. Language play for rehearsal, in contrast, aims to lend a hand in the linguistic development of language learners. In the course of language acquisition, it can be detected in the guise of low-volume, self-directed, private speech. It is, in essence, a play with new (i.e., not yet mastered) features and elements of language and is not normally accompanied by the same contextual cues such as laughter or marked prosody. In his study of L2 Spanish, Lantolf (1997, p. 11) provides the examples below for language play for practice:

> "[T]alking out loud to yourself in Spanish; repeating phrases to yourself silently; making up sentences or words in Spanish; imitating to yourself sounds in Spanish; having random snatches of Spanish pop into your head."

By definition, the aim and scope of this type of language play is limited to the attainment of some aspects of language users' linguistic knowledge and/or the learners' further development of the 'interlanguage' in SLA. That is, perhaps, why it has received less attention in relevant literature, comparing to language play for fun. Yet, such play should not be downplayed. As Lantolf (1997)

asserts: "I do not believe that language play, in and of itself, leads to successful SLA. …I do believe, however, that without language play learning is unlikely to occur" (p. 19). In fact, these types of play can be viewed within a continuum of linguistic development and creativity rather than a dichotomy (see also Bell, 2012; Tin, 2011; Heidari-Shahreza, 2018c). In other words, language play for practice as a controlled, self-directed exercise paves the way for more creative, free play with language, that is, language play for fun. Thus, metaphorically, this 'improvisation in rehearsal' (i.e., innovative language practice) leads to a 'rehearsal in improvisation' (i.e., creative language use). Such contention seems to be supported by the developmental stages and diversity of language play observed in both L1 and L2 learners at various levels of linguistic competence (see Holmes et al., 2019; Vygotsky, 2004; Heidari-Shahreza, 2018b).

It might also be insightful to construe the notion of language play as both *text* and *context*. In other words, creativity and humorous effect inherent to language play (for fun) may originate from the manipulation of linguistic elements and features themselves (i.e., the text); or they may instigate a play frame, metaphorically, a safe house for individuals to be creative and funny (i.e., the context). Under such purview, formal, semantic, and pragmatic language play, as elaborated on earlier, can be considered points within a continuum of play with and in language (see also Cook, 2000; Heidari-Shahreza, 2018b; Waring, 2013).

In short, language play can be inspected from different viewpoints; from an aesthetic function of language to a social one, or from a developmental function to a creative one, language play might be at work (see also Crystal, 2008). Each perspective sheds light on certain aspects of language play. What, however, remains as a part and parcel of language play is its linguistic core, the linguistic creativity inherent to language play (Cook, 2000; Heidari-Shahreza, 2018a; Jones, 2016a). Perhaps, language play can be best (and with outmost brevity) described as 'creative languaging' (see also, Swann & Deumert, 2018; Wray, 2008). Linguistic creativity is a relatively under-explored area of investigation within creativity research. The next section delves deeply into linguistic creativity, making connections to language play (as creative languaging). The paper contends that language play may offer insights to extend the borders of linguistic creativity.

LANGUAGE PLAY: A WINDOW TO LINGUISTIC CREATIVITY

Language play can be an insightful window to linguistic creativity. It may offer valuable insights from both theoretical and practical perspectives.

A Theoretical Perspective

Despite the discrepancies in the conceptualization and classification of creativity, the core definition seems to remain tenable. That is, creativity can be defined as originality (or novelty) and appropriateness within a certain time and place (Alves-Oliveira et al., 2021; Sternberg & Kaufman, 2018). A glimpse at relevant scholarship indicates that creativity has wide currency in linguistics.

Jones (2016b) highlights several features of language which aptly make room for creativity (including language play). Firstly, language is rule-governed. This, however, not only aids in efficient use of language but also makes opportunities for rule-breaking (i.e., transgressing the constraints of language). Secondly, language is ambiguous, situated, and context-dependent. This, in turn, allows speakers to deploy language flexibly based on contextual features. Additionally, language is dialogic. That is, language users interdependently co-construct a verbal interaction. These characteristics, among others, offer a significant scope for language to be played to the intention of interlocutors (see also Bakhtin, 1981; Swann & Deumert, 2018).

Linguistic creativity also appears in Hockett's design features of language, labeled 'productivity,' as a unique property of human languages (Kegl, 2020). More notably, however, creativity is addressed in the works of Noam Chomsky. He states that "an essential property of language is that it provides the means for expressing indefinitely many thoughts and for reacting appropriately in an indefinite range of new situations" (Chomsky, 1965, p. 6). The way Chomsky conceives creativity seems compatible with the core definition, mentioned earlier. Nevertheless, he confines creativity to the principles of 'generative' (or rather, 'universal') grammar. Chomsky (2003) asserts "[l]anguage is a process of free creation; its laws and principles are fixed, but the manner in which the principles of generation are used is free and infinitely varied" (p. 402). Thus, he sanctions creative languaging inside the boundaries of language system.

Considering the way linguistic creativity is conceptualized within Chomsky an linguistics, an important question is: Can we 'language' outside the box? Can we go beyond the conventional systemic constraints of language? Or is it possible to break the rules of language in order to be *truly creative* in languaging? Bergs (2019) addresses a similar question, drawing upon Sampson's (2016) categorization of creativity into 'F-creativity' (F for fixed) and 'E-creativity' (E for extending or expanding). The former refers to producing new forms within the constraints of language or simply, productivity in the morphological sense (e.g., the derivational process of affixation, beauty → beautiful). The latter, however, points to the creativity that expands the *system* of language, as a means of communication, by transgressing the rules and conventions. The non-verbal examples of such creativity can be Pablo Picasso's 3D and collage art or John Cage's 4 minutes and 33 seconds of *silence* (as a piece of music). For its verbal counterpart, probably, the following atypical poem by E.E. Cummings serves best. The phrase 'a leaf falls' and the word 'loneliness' are woven together vertically to provide an intricate, vivid picture of the subject matter[1]. James Joyce's *Finnegan's Wake*, and parts of Lewis Caroll's *Alice in Wonderland* may also be said to feature instances of E-creativity:

1 Cummings biographer, Richard S. Kennedy calls the poem "the most delicately beautiful literary construct that Cummings ever created" (1980, p. 463).

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An example of verbal E-creativity

Bergs (2019) concludes that E- and F-creativity should be better perceived as a cline rather than a dichotomy. Hence, Bergs' answer to the above question (i.e., can we language outside the box?) seems to be partially yes, albeit rarely. Germane to the aim and scope of this article, he adds "[a]s speakers love to play with language every now and then… these creative innovations [that is, instances of E-creativity] do occur" (p. 180). It seems language play, as creative languaging, might be the right notion to be employed to explore the spectrum of creative language use from F-creativity to E-creativity. Two pieces of evidence can further substantiate this proposition: Firstly, as reasoned earlier, language play also seems to fall within a continuum from language play for practice to language play for fun; or from attempting to master the forms of language to trying new forms of language. Secondly, as Bergs (2019) finds, such creative instances (e.g., snow clones, malaphors) are, more often than not, used by speakers to be *witty and funny*. Hence, they seem to serve the same purpose as humorous language play. It also implies that verbal humor can be explored within the purview of creativity research (see e.g., Proyer et al., 2019).

A Socio-Pragmatic Perspective

From a product-oriented perspective, 'literature' has traditionally been regarded as the highest manifestation of linguistic creativity (Maley & Kiss, 2018). Relevant scholarship, however, indicates the same ubiquity and level of sophistication in everyday, conversational language use (or languaging). Carter (2016) sets many examples of creative language use such as irony, repetition, pun, alliteration, etc. He contends, perhaps contrary to common sense, that "ordinary language, in so far as it exists, is the exception rather than the rule" (p. 81). Hence, linguistic creativity should be viewed as a basic human characteristic, not a gift heavenly bestowed on certain individuals. As Carter (2016) masterfully puts "linguistic creativity is not a property of exceptional people but an exceptional property of all people" (p. 13).

Discussing creativity in language, Clark (2006) highlights the ubiquitous, endless phenomenon of 'semantic extension' and 'coinage' in language, where new words and/or meanings are created within (i.e., F-creativity) or even beyond the linguistic constraints. She provides the example, 'to farmer' meaning 'to act like a farmer' or 'pretend to be a farmer' as a new verb in English.

Notably, Clark (2006) asserts that "[c]reativity in language—stretching meanings and coining words—is also a form of play, one delighted in by many writers who have stretched their language to new limits" (p. 272). It is worth mentioning that such language play is not confined to important figures of literature or even adult language users. In fact, relevant studies indicate that children, from as young as two years old, coin words such as 'climber' (for ladder) or 'untight' (for to loosen). Perhaps more interestingly, this creative practice seems to be continued (or rather be flourished) even when children have acquired the established, adult versions of these coinages (see Heidari-Shahreza, 2018b; Holmes et al., 2019). My corpus of Persian language play (as L1) includes Avina, a four-year-old girl, who playfully coined Liz-lizak (roughly, slip-slipie) for banana, noting that one might slip on its peel.

This, in turn, substantiates Ludwig Wittgenstein's ([1953] 1999) notion of 'language games' (or '*Sprachspiele*'). That is, language users, including children, aim for diverse communicative acts and intentions *via* the affordances language makes possible. Getting engaged in such activities (or language games) also lends a hand in enhancing speakers' linguistic competence and spoken artistry (see also Vygotsky, 2004). Language games, in essence, point to language play and its sociolinguistic functions (Swann & Deumert, 2018). Through language play (or games), one may hone their language skills to communicate more effectively. This can potentially give further credits to Cook's (2000) recommendation of using language play as a 'test of proficiency.' It also puts emphasis on Roman Jakobson's 'poetic function' of language as a window to better understand linguistic creativity (see e.g., Jakobson, 1960). As mentioned earlier, Chomsky (1965, 2003) principally views language as infinitely creative but also strictly rule-bound (Bergs, 2019; Swann & Deumert, 2018). Hence, his highly-cited sentence, "colorless green ideas sleep furiously" is rendered as grammatical but nonsensical and meaningless. For Jakobson and other like-minded linguists, however, this example can indeed make sense, considering the figurative power of language.

More importantly, it seems meaningfulness (even in the metaphorical sense) should not necessarily be a component of linguistic creativity. Contrary to the basic definition of creativity as something being novel and meaningful, language play makes possible for even 'noise' to be creative (Swann & Deumert, 2018). In this respect, Storch (2018) reports on Jukun communities in northeast Nigeria, where women's performed narratives contain a certain type of nonsensical unintelligible self-talk, reflecting their feelings of 'otherness' and being not understood/supported within their societal context. This 'noise language' is, in essence, an innovative communicative strategy for the women to express effectively what might not be said otherwise (see also Heidari-Shahreza, 2023a). Storch concludes that linguistic creativity may be realized, albeit unconventionally, through such "artful unmaking of words and meaning" (p. 48). It can be construed as a certain type of language play which is more of 'doing things with sound' rather than conventional 'doing things with words' or speech acts in Austin's theory (Swann & Deumert, 2018; see also Austin, 1962/1975). Linguistic creativity, under such purview, is not creation *ex nihilo*. Rather, it is a *performance* being 'resemiotized' within its meta-discourse (see also Bauman, 1986; Heidari-Shahreza, 2017).

A counterargument on the nonsensical dimension of this peculiar type of linguistic creativity can yet be put forth. It can arguably be assumed that the aforementioned noise is, in fact, *contextu-*

ally meaningful. In other words, the absence of meaning can be as meaningful (and creative) as the presence of meaning. One may better grasp this proposition considering 'absurdism' as in theater and literature (see Bennett, 2015), or 'meta-humor' in humorous discourse (see Heidari-Shahreza, 2017) or the example set earlier, that is, John Cage's *4:33 seconds of silence* (as a piece of music). Additionally, it is worth mentioning that perhaps the same fuzziness inherent in the notion of creativity has served as an incentive for some scholars to define and delimit creativity in recent years within a *certain context*, not in absolute terms (see Alves-Oliveira et al., 2021; Helfand et al., 2016).

Either side of the contention we endorse, language play as creative languaging may speak of two forces of language. As Tarone (2000) points out, language play can be viewed from the perspective of Bakhtinian "centripetal (or centralizing, normalizing) … [and] centrifugal forces of individual creativity, which introduce innovation and diversity" (p. 34). From this standpoint, language play may mainly be perceived as an outlet for the latter forces that function at micro (e.g., phonological) and macro (e.g., discursive) levels of linguistic system. Put differently, within the purview of Bakhtinian dialogism, language play points to 'symbolic freedom' or the ability to creatively go beyond the norms and centripetal forces of language (Bakhtin, 1935/1981; Heidari-Shahreza, 2018a, b).

In this respect, two types of linguistic creativity can also be identified: 'Rule-bound creativity' and 'rule-breaking creativity.' The former works within the constraints of language as rule-governed system in the Chomskyan sense (see also Bergs, 2019). The latter, however, unearths the fundamentally unstable and transformative dimension of language. As Swann and Deumert (2018) emphasize, the 'plasticity' of language adds greatly to 'criticality of creativity' and is potentially able to a) *unmake language via* doing things to words and b) *unmake society* through doing things with words, asobserved in the case of Jukun women (see also Austin, 1962/1975; Heidari-Shahreza, 2023a). Similarly and from an educational perspective, language play can also be employed within the framework of critical pedagogy as a potent toolkit to communicate critical themes and concerns more effectively (see also Heidari-Shahreza, 2023b)

EXPANDING BORDERS OF CREATIVITY THROUGH LANGUAGE PLAY

Linguistic Creativity *vs*. Linguistic Formulaicity

The Bakhtinian forces of language and the rule-bound and rule-breaking creativity can also be inspected through the lens of formulaic language *vis-à-vis* language play. As Bell (2012) asserts, formulaic language can serve as "a point of reference against which other uses can be recognized as creative or playful" (p. 189). In other words, relevant literature indicates that formulaicity, more often than not, is a stepping stone for language users to be creative (see Clark, 2006; Crystal, 2008; Wray, 2008). Metaphorically, cracking the eggshell of a language system does not kill creativity. Rather, it gives life to another type of creativity, that is, rule-breaking or E-creativity (see also Bergs, 2019; Sampson, 2016). It is also insightful to note that the interplay between formulaicity and creativity

is potentially reciprocal. That is, as formulaic language yields the floor to language play, a creative instance of language can also become 'worn-out,' or non playful in the long-run. 'Dead metaphors' (e.g., hands of a clock) may partially exemplify this regression or normalization process. In this regard, Bell (2012) also mentions "to vote someone off the island" as an in-joke and creative language use, originally shared by only a few people; a case in point which has joined the formulaic language and may ultimately become "a common, non playful way of referring to instances in which a field is narrowed" (p. 191).

At theoretical, macro level, one may challenge this issue further with the 'chicken-or-egg' problem. That is, which comes first or, in retrospect, which one has given rise to the other, linguistic creativity or formulaicity? Have human beings originally played language into a system or out of a system? A thorough treatment of such questions certainly goes beyond this article (both in length and scope) and may never find fully convincing answers. Nevertheless, dealing with this chicken-or-egg situation can notably be facilitated if we resort, of course figuratively, to 'Heisenberg's Uncertainty Principle' and 'Schrödinger's cat' from quantum physics (see Pereyra, 2012 for further information). Tailored (and simplified) to fit the present discussion, the uncertainty principle states that it is impossible to determine with high precision and confidence the position and direction of a given instance of language within formulaicity and creativity continua. In other words, as Schrödinger's cat can theoretically be dead and alive at the same time, language (or any bit of it) can simultaneously be creative and formulaic (i.e., both the chicken and the egg). Within the purview of the 'complexity theory,' this 'chaotic' potential or 'messiness' of language (see Swann and Deumert, 2018, for the notion of language/creativity as messy) may constantly but temporarily find *order in disorder*.[2] Hence, both formulaic and creative language can be observed; likewise, language play can be born out of formulaicity and *vice versa* (see also Tin, 2011; Wray, 2008). This proposal makes sense more convincingly if the definition and the key characteristics of a 'complex system' (here language) are taken into account.

Several characteristics are inherent to complex systems. Firstly, they contain (and entail) numerous interacting elements. Secondly, such systems are nonlinear, dynamical, and self-organizing. Thus, they can be simultaneously adaptive and robust. Thirdly, complex systems are generally sensitive to initial conditions. That is, small changes can ultimately render mammoth outcomes (i.e., the 'butterfly effect'). Fourthly, they produce a collective behavior which may not be predictable based on the function or contribution of the constituents per se (see Thurner et al., 2018 for further information). In other words, in complex systems, the whole is exponentially greater than the sum of the parts. Major traits of complex systems can more tangibly be understood if one imagines some sand slipping through their fingers onto a table. As the pile slowly builds up, the angles of its slopes change accordingly. If the slope becomes too steep, avalanches make it flatter again and *vice versa*. That is, complex systems regulate themselves, modifying their conditions and interactions with the context (see Larsen-Freeman & Cameron, 2008). As Tarone (2000) contends,

2 As Thurner et al. (2018) point out, the chicken-egg problem is a characteristic of complex systems, resulting in a notably rich spectrum of behavior.

language play can be examined in light of "language as an exemplar of a dynamic complex non-linear system" (p. 33). She accounts for language play based on the unpredictability and dynamics of language as such a system.

A 'Complexity Theory' Framework of Linguistic Creativity

To harness complex systems, complexity theory (CT) has been developed. As a meta-theory, it has successfully been employed in diverse fields of study (e.g., meteorology, biology, astrology, quantum physics, sociology, economics, and psychology, to name a few) to probe into a wide array of phenomena from the whole cosmos to subatomic particles (Thurner et al., 2018). As Simon (2001) asserts, this theoretical framework is particularly apt for "the systems in which we human beings take part" (p. 79). Within (applied) linguistics, CT-thinking can probably be traced back to almost the turn of century, since the pioneering work of Larsen-Freeman (see Larsen-Freeman, 1997). Interestingly, it coincides with the turning point in the scholarship on language play, mentioned earlier (see Cook, 1997, 2000; Lantolf, 1997). The incentive behind a CT-based approach to linguistic creativity (including language play) can at least be twofold.

First, it can cater for the evolving, multifarious, and context-dependent nature of language (creativity) probably better than its simplistic rivals (e.g., 'structuralism'). Breaking down a phenomenon into its comprising elements may seem tempting at the first glance. Such 'reductionist,' bottom-up modus operandi, however, cannot account for the emergent, self-driving nature of linguistic creativity (see Larsen-Freeman & Cameron, 2008; Tin, 2011; Wray, 2008). Metaphorically, dissecting language kills its living creativity. A CT-informed analysis, in contrast, makes prediction based on comprehensive, non-deterministic data (Simon, 2001). In a sense, it *complexifies to simplify* language play by taking into account the gestalt of language and creativity. It should also be noted that other linguistic or cognitive theories of language, by nature, may not be able to encompass all dimensions of linguistic creativity.

A second reason to embrace a CT-informed inquiry into linguistic creativity has roots in the uncertainty and potentiality of language. As Halliday (1994) contends "language is a resource for making, an indefinitely expandable source of meaning potential" (p. 16). That is, the language system or more accurately the options in the 'lexicogrammar' can potentially create infinite linguistic meanings (and functions). Besides the notion of 'language as meaning potential,' there is also possible uncertainty, at least at the theoretical, abstract level, in the momentum and direction of linguistic creativity (i.e., Uncertainty Principle). In other words, the complexity involved in creative languaging brings about unpredictability which, in turn, makes it unfeasible (if not impossible) to discern *what language is able to make* (in the Hallidayan sense of language as meaning potential) or *what language is able to unmake* (in the 'performative' sense, discussed earlier). Hence, the complexity theory may provide the sound basis for fully grasping the nature of linguistic creativity as it is, by definition, construed to explore 'unknown unknowns' (see also Larsen-Freeman & Cameron, 2008).

As further explanation, within probabilistic frameworks, appropriate for simple systems, the range of possibilities is predictable. The one being realized, however, is not certain. Thus, it is, in

essence, a matter of dealing with 'unknown knowns' (Thurner et al., 2018). Consider throwing a dice: There are six possibilities (i.e., the knowns). It is, nevertheless, unknown which side of the dice or which possibility actually takes place. In complex systems, detectable patterns (technically, 'attractors') naturally occur amidst infinite unpredictability. As Thiétart and Forgues (1995) exemplify, these patterns are, metaphorically, islands of stability in an ocean of chaos (i.e., order in disorder). Within the system of language, they could probably be where a linguist notices a new variant of linguistic creativity or when language 'playfully' departures from formulaicity. Albeit open to heated debate could it be, cases such as snow cloning, mentioned earlier, or ontologically, even grammars of languages may probably be attributed to these 'steady states.' A fundamental question here is how complexity theory, the science of the 21st century (in Stephen Hawking's words) can be operationalized for creativity research in linguistics? As Larsen-Freeman and Cameron (2008) underscore CT-talking and to a lesser extent, CT-thinking has been in the air for some years. Yet, CT-doing, that is doing CT-informed research on language (creativity and play), seems singularly overlooked or at least unfledged (see also Tin, 2011). The following section strives to put forth a possible answer.

Computational Modeling of Linguistic Creativity

While a thorough treatment of the aforementioned question goes beyond the aim and scope of this article, it seems 'soft computing' (SC) would lie at the heart of the answer(s). Briefly, soft computing is a group of computational techniques which principally hinges on 'fuzzy logic,' 'artificial neural networks,' 'evolutionary, genetic algorithms,' and of course complex systems (see Chakraverty et al., 2019 for further information). As a collection of robust methodologies, it employs artificial intelligence (AI) to deal with real-life, complex phenomena, efficiently tolerating uncertainty, situatedness, and dynamicity within a system. In other words, soft computing is principally designed to resemble human brain, can be fed with 'linguistic variables' (instead of numerical values), and is capable of 'approximate reasoning.' Such characteristics, among others, make soft computing much-needed for complex systems and are probably well-suited to investigate linguistic creativity.

This SC-based proposal can further be pursued within 'computational creativity.' As a burgeoning subfield of AI research, computational creativity looks into the development of creative systems which are able to generate creative output and potentially demonstrate creative, intelligent behavior, comparable to that of human beings (see Veale & Cardoso, 2019 for further information). Relevant scholarship already includes a number of attempts to evaluate 'linguistic computational creativity' (see e.g., Martins et al., 2019; Ritchie, 2007). To this aim, researchers have developed diverse programs to generate poems, metaphors, riddles, funny acronyms, storylines, slogans, etc. (see e.g., Alnajjar & Toivonen, 2021). These AI-based systems are generally designed and operated through the cutting-edge tools and techniques in corpus-based, computational linguistics such as 'sentiment analysis,' 'word embedding,' or 'dependency parsing' (see also Pellicer et al., 2023; Veale & Cardoso, 2019).

What seems to be the next milestone for such creative systems is to achieve the same *aesthetic quality and pragmatic effect* in the output as a human being is potentially able to produce (Gatti

et al., 2022). That is, natural language generation (NLG) systems are currently able to reach the baselines of human linguistic creativity, producing novel, acceptable stretches of language. The mammoth challenge is to generate the same level of verbal artistry and pragmatic awareness (or 'discourse competence'). In this respect, language play for fun can perhaps function as the new (or advanced version of) 'Turing test,' being employed to evaluate such a landmark. Turing test, after Alan Turing, the highly-influential figure in computer sciences, assesses a machine's communicative competence. The test is successfully passed if the machine-human conversational interaction is *indistinguishable* from that of human-human. As delineated in this paper, humorous language play encompasses creative manipulation of linguistic elements and features (i.e., the baseline for computational creativity). To be labeled as *humorous proper*, it also needs to be deeply rooted in the *discourse* as opposed to the 'text' (See Widdowson, 2000 for the distinction and relevant criticism of corpus linguistics). In other words, 'humorous effect,' as in language play for fun, can be an index of pragmatic awareness (besides 'grammatical competence') to assess computational linguistic creativity (see also Ritchie, 2001). This line of inquiry can also be further developed within computational/robotic humor and intelligent play (iplay) (see also Heidari-Shahreza, 2024).

In a relevant study, Gatti et al. (2022) attempted to address pragmatic evaluations of two creative systems, Heady-Lines and Mockingbird which could generate creative headlines and song parodies respectively. Reporting the relative success of these systems, they discuss the complexities and challenges involved in evaluating the pragmatic potential of AI-based creative programs. In particular, the researchers underline developing evaluation tools which can measure whether or not the pragmatic effect of the output is realized, pointing out that such "evaluations are currently extremely rare in computational creativity research" (p. 473). This is where the humorous effect, as mentioned above, may lend a hand. Language play for fun seems to be a more reliable criterion to assess computational linguistic creativity (above the baseline) which in turn can be a general touchstone for autonomous creative systems[3] (see also Ritchie, 2001, 2007; Veale & Cardoso, 2019). The next section concludes the article, touching upon the insights a SC-based approach to linguistic creativity can potentially offer within an 'integrated science' framework.

CONCLUSION

Construing language as a complex system and investing more in research through soft computing can open new windows on (computational) linguistic creativity. In prospect, one may envisage that linguistic creativity can holistically be traced back (and forward) as a language system (e.g., English) evolves. Likewise, languaging from its initial conception to its possible extinction can perhaps be delineated more reliably. With an eye to the latent potential in artificial (AI) intelligence, 'soft lin-

3 In *Interstellar* (2014), a top-rated science-fiction movie widely admired for its scientific accuracy as well as its cinematic effect, a team of astronomers try to find human race a new home after the Earth is no longer livable. On the mission, there is a highly advanced robot, called TARS, helping greatly the protagonist explorer, Cooper. Interestingly, the (technical) settings of TARS contain a *humor* option which Cooper sets at 75%.

guistics' as the scientific study of *AI natural languages* can also be perceivable. An artificial (intelligence) natural language is currently an oxymoron, an imaginary language, which theoretically may come true as a long-term (by-)product of AI 'deep learning' and evolutionary processes within an AI ecosystem (see also Gatti et al., 2022; Pelliceret al., 2023). In other words, in climbing up the Tower of Technology (figuratively, a modern Tower of Babel), we may witness how human languages will be engineered and how artificial languages may adopt natural attributes (as in human languages). This, in turn, can potentially result in 'soft languaging' and particularly *language play by machines*; a realm of possibilities where machines have self-nominated themselves as archrivals since 1997 when Deep Blue (the IBM supercomputer) defeated the world champion, Garry Kasparov, in a historic chess match[4].

It should also be said that (re)conceptualizing and expanding on the notion of linguistic creativity particularly in light of play could be well beyond the 'comfort zone' of some researchers. Multidisciplinarity and interdisciplinarity inherent to this approach can perhaps be an epistemological bottleneck for some 'armchair' scholars (so to speak); those who prefer musing on linguistic orthodoxies than, as mentioned earlier, thinking outside the box. Nevertheless, *integrated science*, thanks to its interdisciplinary and multidisciplinary nature, is gaining momentum across many disciplines (Rezaei, 2021). Hence, without getting overly excited, it seems beneficial to calibrate linguistic/creativity research efforts through the burgeoning zeitgeist of *science without borders*. This way forward, we may not be able to explain linguistic creativity 'too much too fast' as some 'reductionist' researchers may wish to (see Dennett, 1995 for the notion of 'greedy reductionism'). Nevertheless, slowly and steadily, we can amass a wealth of knowledge on linguistic creativity that is more insightful and more comprehensive. An integrated-science approach to language play can, for instance, cast further light on the creativity assessment and development of smart environments (including AI-based digital tools and social robots). Likewise, language play can inform and influence (foreign) language education as well as creative pedagogy. In this respect, metalinguistic awareness, translanguaging, creative and critical thinking skills may significantly be enhanced through language play.

In sum, this paper looked into linguistic creativity through an in-depth discussion of language play. It strived to provide readers with ideas which could serve as the stepping stone in dealing with linguistic creativity in more depth and, in some cases, in novel ways. Albert Einstein, defensibly one of the most creative scientists in human history, once said: "We cannot solve our problems with the same level of thinking that created them." *Play-based* inquiries into linguistic creativity can be the higher level of thinking we need to demystify linguistic creativity. This great potentiality awaits scholars who are "passionately curious" (in Einstein's words) about the integrated science of creativity.

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4 On a side note, imagine an apocalyptic future, when human beings speak languages of 'machine beings' (not the other way around); where they do not have the upper hand in creativity any longer. Engineered languages can be endangered languages!

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APPENDIX A

Transcription	*Conventions*
italics	semantic emphasis
CAPS	(much) louder
(text)	description of voice quality, non-verbal action, background information
(1)	Pause of 1 second or less
(5)	pause of this many seconds
HHH	laughing (while speaking)
☺speech☺	smiling (while speaking)
=	latching

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