Raymond W. Gibbs, Jr.

Are Creative and Routine Language Really that Different?

Abstract: There is a wide-spread belief that creative and routine language arise from different mental/linguistic processes and convey rather different types of linguistic meaning. This assumption may not accurately describe real, online language production and understanding processes. In most cases, creative language use is not that difficult or cognitively burdensome for speakers/writers. Creativity does not necessarily require people to be consciously aware of their production of innovative instances of language. At the same time, routine language is not interpreted automatically, but makes use of many of the same mental/linguistic routines employed in creative language use. A general theme of this chapter is that people rarely aim to be simply creative or routine when they speak or write as they typically have task-specific and context-specific goals that are interacting constraints in determining the language they use.

1 Introduction

Linguists and literary scholars take great pleasure in closely examining speech and writing for evidence of people's creativity. There is nothing better than coming across a new word or phrase, or some familiar expression that has been used in a novel manner. We ask "What does that mean?" and "How was that created?" We are interested in routine, familiar, sometime formulaic, language for the insights it provides on entrenched linguistic patterns and how such language communicates so effectively. But we also thoroughly enjoy contrasting creative and routine language, looking for systematic differences between these two types that may reveal something about the seemingly distinct ways people think and express themselves (e.g., creatively with deliberation or routinely with little forethought). One possibility is that creativity exists along a continuum, from widely creative to stubbornly routine. But the belief that creative and routine language are substantially different is a guiding assumption in much ongoing linguistic and psycholinguistic scholarship.

My goal in this chapter is to raise some complications regarding the possibility of drawing any simple division between creative and routine language. I am especially concerned with the tacit belief that creative language typically emerges from deliberate, conscious effort on the part of speakers and writers, while vari-

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ous forms of routine, formulaic language may be easily, automatically, produced and interpreted. These complications are most evident when we go beyond just examining individual examples of words or phrases and dig deeper into the complex realities of people's specific language tasks (i.e., the implicit or explicit pragmatic goals that people aim to achieve). A look at these larger, contextual considerations actually suggests that creative and routine language may not be all that different. My claim here is that our identifications of some language as being creative or routine does not entail that these reflect different underlying mental processes through which they are created and interpreted.

2 Is Creative Language Deliberate?

Our rough intuitive judgment that some word, or sequence of words, is creative may be associated with the impression that it is both original and effective (Runco and Jaeger 2012). Creative language use is typically seen as the product of individual minds who possess special talents for engaging in different forms of convergent and divergent thinking (Amabile and Pratt 2016; Benedek and Fink 2019). We presume that creative language production was not an accident, but specifically emerges from mostly deliberate attempts to say something that is both novel and useful within some discourse context.

But there are important questions that need to be addressed given this standard view of creativity. First, although originality is undoubtedly relevant to creativity, how does one define what is really original? The possible demonstration that some word or phrase has never been produced before suggests that it may be new. However, random combinations of morphemes or words may be entirely new without necessarily being viewed as creative. Most creative acts recombine, or expand upon, existing knowledge in some form or manner.

Second, there is a long historical trend in psychology to study creativity as primarily a matter of "idea generation". Although considered a central phase of creative thinking, idea generation requires a goal, such as a problem to be solved or an opportunity to be addressed. In fact, ideation not only requires the discovery of a problem or opportunity, but the problem or opportunity must also be clearly identified and defined to prepare for the subsequent generation of ideas and solutions (Runco and Chand 1995). Generating novelty requires having some sense of the problem or opportunity that needs to be addressed.

Let's examine these ideas about context-specific, task-oriented creativity given one instance of creative language production. Consider the word *"rackjack"* that I recently heard for the first time. *"Rackjack"* technically refers to a method

of loading crates onto trucks using wooden ramps, something that few people would likely know of or have used in their own speech. In recent years, though, *"rackjack"* has appeared in talk of when one man is flirting with a woman and then another man comes in and manages to steal the woman away through his own flirtatious behaviors (e.g., "I was talking to a girl last night before some loser rackjacked me and left with her"[1]).

When I first heard *"rackjacked"* in a casual conversation, I had an immediate impression of what it meant, partly given the information about a second man coming in and leaving with the woman originally speaking with the first man, and doing so at "night". The word *"rack"* is a slang expression for women's breasts, particularly larger or more notable breasts, and is presumed to come from the Middle Dutch word "recken" (meaning "stretch out"), which is connected to the Proto-Germanic term *"rakjanan"*, which has a similar meaning.[2] To "jack" something typically means, in American English, to "steal" something, which is a shortened use of the word "hijack" (e.g., *"The desperate man hijacked the plane on the way to Miami"*). *"Hijack"* is short for *"highway jacker"*, describing a person who robs or seizes vehicles and airplanes when they are in the middle of travel along highways or in the air. *"Rackjack"* is still an unusual term for most English speakers and is believed to have emerged around 2006 on an American TV series.

Would you consider *"rackjack"* to be a case of creative word production? Is it an original and effective term in context? The word itself is not completely novel given its prior use in the context of loading truck beds. But the use of *"rackjack"* in a situation referring to one man stealing away a woman who was just talking with a different man makes the term "novel" because its original, loading trucks, meaning makes little sense in the new context.

The interesting point, though, is that the use of *"rackjack"* in this new context is not a straight-forward metaphorical extension of the earlier use. Stealing a woman away from another man is not related in any obvious way to a method for loading trucks. *"Rackjack"* appears to be original in the way that it borrowed the slang term *"rack"* referring to women's breasts as a metonymy for the entire person (e.g., a part standing for a whole) and combining that with a more familiar term "jack" meaning to steal something.

We may believe that the use of *"rackjack"* in this situation is sexist by referring to a woman by her *"rack"* and making it seem as if she were some man's possession and then, suddenly, hanging out with a different man. *"Rackjack"* may also be viewed, by some observers, as humorous given its alliterative form and

1 https://neologisms.rice.edu/index.php?a=index&d=1.
2 https://neologisms.rice.edu/index.php?a=index&d=1.

playful way of speaking about a case of a man stealing another man's woman. The sound of the word *"rackjack"* feels slightly iconic given that the meanings of *"rack"* and *"jack"* are somewhat related to their sounds (i.e., to jack something suggests taking possession of something quickly and forcefully, which is enhanced by the pronunciation of *"jack"*). This added iconicity makes the word especially effective in getting its meaning across in an efficient manner, which is certainly a big part of its utility or effectiveness in communicating a specific, novel idea. *"Rackjack"* in this context may be both original and effective because it is novel and provides a very compact way of describing a complicated social interaction.

Linguists often assume that being creative is cognitively burdensome, and adds time to the online process of formulating one's thoughts and expressing them in language. But it is not clear that this was necessarily the case with *"rackjacked?"* (and many other innovative instances of word play). Part of this depends on how transparent the context is in highlighting the possible meaning of the new word *"rackjacked"*. Putting together *"rack"* (when referring to women's breasts) and *"jack"* (when referring to stealing) is primarily a matter of combining two relatively familiar words that may not be very difficult to do, as experimental studies have shown (Swinney et al. 2007).

Consider now a different example that comes from American English and refers to political campaigns. When someone says *"to astroturf"* something, they intend to communicate the idea that "to engineer a campaign that looks as if it is originating naturally from the general population, though actually it is instigated and organized by large corporations or political parties" (Dancygier and Sweetser 2014: 106). This novel verb phrase is based on the artificial turf known as *"astroturf"*, often found in both indoor and outdoor sports stadiums, where fake, plastic grass is used on the field instead of real grass. The phrase *"to astroturf"* uses *"astroturf"* to metonymically stand for the idea of something that is artificial. By extension, the phrase *"to astroturf"* implies in context the metaphorical idea that the political campaign did not arise organically from the general public, but was artificially manufactured to make it seem as if their ideas originated more genuinely, from everyday citizens.

Once again, there is something novel and effective in the expression *"to astroturf"*, but that general judgment is very much guided by our understanding of what we believe the larger context was for its use, including the presumed communicative goal which motivated its adoption. We may also chose using *"astroturf"* because of the additional meaning effects it may elicit in people. Readers may also possibly infer what *"to astroturf"* means through recognition that the phrase was deliberately created as a metaphor.

Language production is not completely automatic in which speakers talk with little awareness of what they are doing. People are believed, in many situations, to be quite thoughtful when speaking and even produce very specific linguistic expressions with conscious deliberation. One concrete example of this idea is the proposal on "deliberate metaphor theory", which assumes that only a small select group of words or utterances really conveys metaphorical messages, namely those that are composed and delivered with a deliberate aim to alert others to particular cross-domain mappings (e.g., Shakespeare's Sonnet 17 line *"How shall I compare thee to a summer's day"*) (Steen 2008). Most verbal metaphors, under this view, are routine phrases that do not really convey metaphorical messages in which people actively compare one domain to another. Only expressions that are explicitly marked as "deliberately metaphorical" are understood as metaphors.

One possibility is that speakers and writers often explicitly signal their deliberate intent to use metaphor through various pragmatic signals (Goatly 1997; Steen 2008). For example, speakers may signal that they are using metaphor by including different discourse markers (e.g., *"well"*), comparatives (e.g., *"like"*), intensifiers (e.g., *"actually"*, *"quite"*, or *"utterly"*), words that indicate specific kinds of meaning (e.g., *"literally"*, *"metaphorically"*), as well as phrases expressing metacomments on the speaker's communicative intentions (e.g., *"so to speak"*, *"one might say"*, *"a figure of speech"*). These various discourse devices may generally be understood as "pragmatic signals" that act to alert listeners and readers to the special, creative, metaphorical nature of what people say.

The immediate difficulty with the proposal that people sometimes use specific pragmatic signals to alert others to their use of metaphor is that these devices are not at all specific to metaphor (Gibbs 2011). Words and phrases such as *"well"*, *"like"*, and *"one might say"* are found throughout spoken discourse and not just restricted to use with metaphor. One study examined a large corpus of language for the presence of so-called "signals" or "tuning devices" for metaphor and found that these are employed with non-metaphorical language 60% of the time (Shutova and Teufel 2010). Corpus analyses also reveal many cases of novel metaphor that are not marked by pragmatic signals and many instances of conventional metaphor that are accompanied by pragmatic signals (Nacey 2013). These observations cast doubt on any one-to-one link between specific pragmatic signals and metaphorically used words or expressions.

Psychological studies are really required to assess whether people signal their attempt to use creative metaphor in discourse. One experiment tested this possibility by examining what people consciously understood when encountering a conventional metaphor with, and without, various pragmatic signals presumed to be markers of deliberate metaphor (Gibbs 2015). Participants read the conven-

tional metaphorical statement in which Mark stated, *"We really have come a long way since the wedding"* in different contexts that explicitly mentioned, or not, different markers of metaphor. They were then asked to give ratings about what they understood the speaker's statement as communicating.

Deliberate metaphor theory assumes that conventional metaphors do not evoke their original cross-domain mappings (e.g., ROMANTIC RELATIONSHIPS ARE PHYSICAL JOURNEYS), But encountering a conventional metaphor with a pragmatic signal should alert listeners to a speaker's deliberate attempt to call attention to some cross-domain mapping. This should, therefore, increase listeners' understanding that the statement *"We really have come a long way since the wedding"* (a) is related to the ROMANTIC RELATIONSHIPS ARE PHYSICAL JOURNEYS, conceptual metaphor, (b) is particularly poetic or creative, (c) expresses the speaker's certainty in what he wanted to say, and (d) is intended to get the listener to think about the topic in a different way.

One-half of the participants viewed discourse contexts ending with a speaker's non-metaphorical reply *"We really are doing much better since the wedding"*. This non-metaphorical condition was included to examine whether various pragmatic signals truly work to enhance deliberate metaphor understanding and not just any instance of language, metaphorical or otherwise. Participants were instructed to give their ratings of agreement on a 1–7 scale (1 indicating strong disagreement and 7 indicating strong agreement). The seven statements, presented below, were intended to elicit participants' interpretations of Mark's final utterance:

1. Mark was exactly sure what he wanted to say about his marriage.
2. Mark's statement implied that his marriage was now making more progress than earlier.
3. Mark's statement implied that his marriage was now built on a strong foundation.
4. Mark's statement was creative or poetic.
5. Mark's statement implied that he and his wife moved to a new home during their marriage.
6. Mark's statement was intended to compare his marriage to taking a physical journey.
7. Mark consciously wanted his listener, Larry, to think hard about the meaning of his final statement.

The data from this study did not confirm the main empirical predictions of the deliberate metaphor view, especially its claim that pragmatic signals enhance people's interpretation of cross-domain mappings underlying the meanings of conventional metaphors. Furthermore, there was no evidence to suggest that peo-

ple adopted an expectation to think differently or harder about a particular verbal metaphor given the presence of so-called pragmatic signals of deliberate metaphor. In many cases, people more readily drew cross-domain mappings as part of their understanding of a conventional metaphor alone than when it was accompanied by specific pragmatic signals. These results are consistent with the experimental literature demonstrating that people ordinarily recruit cross-domain mappings (i.e., conceptual metaphors) as part of their fast-acting understanding of metaphorical language, even when those metaphors are conventional (e.g., *"We have really come a long way since the wedding"*) (Gibbs 2017).

More generally, when people presume that they or others have performed some action with deliberative forethought or full awareness, they often mistakenly believe these behaviors are entirely the sole product of conscious mental processes. Experimental psychology has dozens of studies that drive home this important point (Gibbs 2011). We may view some instance of language as creative, and due to deliberate thought processes on the part of those who produced that language, but this assumption is clearly an inaccurate account of how much creative language is actually used and understood.

3 Creativity in Pragmatic Context

Many studies on linguistic creativity analyze words and phrases from various corpora without acknowledging their larger, pragmatic, communicative messages in context. This is readily seen in the use of creative metaphor. Consider what a speaker intends to communicate by the metaphor *"My marriage is an ice box"* in the following conversation:

Mary was talking to John about her husband.
"We exchanged marriage vows ten years ago."
"We have been married a long time."
Mary continued,
"We are still hanging in there."
Mary then said,
"My marriage is an ice box."
(metaphorical assertion)

Mary's final statement is a declarative assertion that compares her marriage to an icebox from which a listener presumably draws a variety of inferences, such as that Mary's marriage is unemotional, confining, and perhaps lacking in sex. One reason why metaphors are believed to be challenging to understand is because they typically communicate more varied messages (e.g., the marriage is

confining, unemotional, possibly sexless) than is the case with most literal equivalent expressions (e.g., *"My marriage is confining"*).

Now compare the meaning of *"My marriage is an ice box"* when it is used in a slightly different context:

Mary was talking to John about her husband.
"We exchanged marriage vows ten years ago."
"We have been married a long time."
John then asked,
"Are you happy in your marriage?"
Mary then said,
"My marriage is an icebox."
(metaphorical assertion + implicature)

In this situation, Mary's statement about her marriage not only conveys certain information about her marriage, but provides an answer to John's question about whether she is happy in her marriage (e.g., *"No, I am not happy in my marriage"*). Mary's final utterance conveys both a metaphorical assertion and a conversational implicature. Conversational implicatures are pragmatic inferences about what a statement contextually implies based on an initial assessment of what the statement literally said (Grice 1989). The meaning of *"My marriage is an icebox"* appears to convey *more* meanings in this second context (e.g., metaphorical assertion plus implicature) than in the first (e.g., metaphorical assertion) by virtue of the added conversational implicature in the second case, which was set up by John's question (e.g., *"Are you happy in your marriage?"*).

One may believe that people are likely to exert more effort, and more time, to comprehend the novel metaphorical utterance in the second context (metaphorical assertion plus implicature) than in the first (metaphorical assertion). In fact, the results of one study showed that this was not the case (Gibbs 2010). Readers took significantly less time to read *"My marriage is an icebox"*, and many similar metaphors, when they also conveyed a conversational implicature than when it only expressed a metaphorical assertion (Gibbs 2010). The take-home message here is that people do not necessarily create a "full" or "complete" understanding of each creative metaphor, such as *"My marriage is an icebox"*, where they infer all of its possible metaphorical meanings and only then derive pragmatic implications from this. Our understanding of creative meanings can be short-circuited because of expectations of optimal relevance in the specific pragmatic context at any one moment (Sperber and Wilson 2002). People may not automatically spend much effort to understand the potentially complex meanings of individual creative metaphors. They may only process, in this case, creative metaphorical utter-

ances in ways that are merely "good enough" for the present communicative purposes without deriving all of their possible meanings.

My point here is that a single linguistic expression may seem to be both creative and effective from a distant point of view, but the real cognitive effort needed to produce or understand the utterance differs in various pragmatic contexts. One cannot draw a direct association between what some language appears to be like (e.g., it is a creative metaphor) and the psychological effort needed to produce or interpret that language without consideration of the pragmatic context in which it appears.

A different demonstration of how pragmatic context affects cognitive processing of creative language is seen in a study of what metaphors imply in different discourse situations (Gibbs, Tendahl, and Okonski 2011). When people hear an expression such as *"Lawyers are also sharks"* in discourse, their aim is not to just understand the metaphoric meaning of this phrase, but to understand what pragmatic effect the speaker wishes to communicate by using this metaphor. For instance, in a conversation between two people, one may state a number of negative thoughts about lawyers with a second person supporting this argument by saying *"Lawyers are also sharks".* In this case, the metaphor simply strengthens the existing set of beliefs held by the conversational participants. But in a slightly different situation, one person may say various things about lawyers, to which the second speaker adds some completely new information by uttering *"Lawyers are also sharks".* Finally, in a third situation, one speaker may comment on many positive attributes of lawyers to which the second person responds *"Lawyers are also sharks"* in order to contradict the first speaker. Thus, the same metaphor can achieve, at least, three different pragmatic effects (i.e., strengthening an existing idea, adding new information, and contradicting an existing idea) depending on the context. Not surprisingly, people take more time to comprehend the metaphorical utterance *"Lawyers are also sharks"* in the contradictory situation than in the other two.

One implication of this work is that understanding what any creative word or phrase means is not simply a matter recovering a particular creative linguistic meaning per se, but it also involves understanding what a speaker pragmatically intends to achieve by the word or phrase in that specific discourse context. Most reading time (within psycholinguistics) or brain scanning studies (within cognitive neuroscience), fail to consider these pragmatic effects by focusing exclusively on crude, simple distinctions between "literal" and "figurative meanings" or between "routine" and "creative" language (Gibbs and Colston 2012). As a result, scholars sometimes incorrectly attribute variations in processing time or brain activity to constructions of those meanings as opposed to the different social and pragmatic effects that speakers' utterances often convey in real discourse. My

general argument is that understanding creativity demands more attention to people's pragmatic, context-dependent goals in the very moments when new language is produced (e.g., contradicting a previous speaker).

4 Task Defined Creativity

It would be quite nice to list all the personal/cognitive traits or characteristics that underlie creative thinking and language use. But it is difficult to clearly summarize the extant empirical findings on this relationship because they are inconsistent. This inconsistency in the results on creativity is likely due to the variety of tasks employed in these empirical studies and how creativity itself is assessed (Abraham 2018; Fink et al. 2014; Zhu et al. 2013). Different creative tasks may often lead to different conclusions about the nature of creativity.

For example, studies that examine the relationship between intelligence and creativity sometimes show positive effects, but sometimes do no (Abraham 2018). Studies on the relationship between creativity and metaphor production vary considerably depending on whether an individual is constrained in their linguistic choices when making a metaphor (e.g., being asked to craft a metaphor describing professors as smart), or whether they are relatively free to craft a metaphor of their choosing (Skalicky 2022). Participants with higher fluid intelligence scores, or who exhibited a greater desire to engage in cognitively difficult tasks, produced metaphors rated as more creative, but only when creating unconstrained, novel metaphors (Beaty and Silvia 2013). Moreover, people rate their own statements as being more creative than when others judge these same expressions (Skalicky 2022). Most creativity studies also ask participants to produce creative language in response to particular tasks (e.g., being asked to craft a metaphor describing professors as smart), but with no other social context, such as whom the addressees may be or what specific pragmatic messages about smart professors they wish to communicate.

These additional considerations are not simply factors that need to be included in future studies on creative language production. Instead, any theory of creative language use must always be tied to the specific tasks people are engaged in and who assesses the creativity in participants' verbal responses. More generally, it is difficult to create a specific list of personal characteristics that underlie all creative language use given that creativity is always tied to specific tasks. This last point is critically important. Judgments of creativity are always person and task-dependent. Speakers and listeners may judge the creativity of some new words in metaphor quite differently than external experts (e.g., linguists). We

must always ask ourselves "creativity for whom?" and "creativity in what task?" when determining whether some word or phrase is deemed as creative.

5 The Social Context for Creativity

Most creative language emerges in particular social contexts. For example, my recent research on metaphors for bodily experiences shows tremendous creativity in the ways people talk about their bodies (Gibbs, in press). In many instances, this creativity arises in competitive situations where individuals try to out-do other people. An extensive set of this type of examples comes from a website called "The Museum of Menstruation and Women's Health", which has collected many dozens of novel expressions for, and stories about, menstruation.[3] Among some of the creative expressions listed for menstruation include:

"Ax wound"
"Antietam" (bloodiest battle in the US Civil War)
"At high tide"
"Attracting the lesbian vampires"
"Having your pixies"
"The dam has burst"
"The devil's work"
"I'm crying me a bloody river"
"It's hunting season"
"Leak week"
"Monthly monster"
"Plum pudding"

Can you understand why these words and phrases refer to menstruation? Do they appear to be original and effective? Part of the focus on word play is solving the puzzle of why certain ideas or events (e.g., menstruation) are described in specific linguistic ways (e.g., *"The badger is angry"*). These different phrases for menstruation emerged from open, social understandings about what are otherwise private bodily experiences (e.g., the problem in dealing with menstruation and what that says about women's bodies). Once again, people contributing to this website are also engaged in a competition with others to come up with new and unusual expressions. In many cases, our impression that some phrase may be offensive also may affect people's judgments about the phrase's novelty and effectiveness. This implied competitive situation, and possible offensiveness of

3 http://www.mum.org/words.html.

the phrases, constitute specific tasks that surely affected the new phrases which were created and reported on the website.

The menstruation website also contains many examples of people describing the particular circumstances in which new phrases for menstruation were created. Consider several instances of these recollections.

> *"Antietam"*
> *"Hello, I don't know if you are still collecting these, but one I most often use is absent. It has been created by me, but is related to historical circumstances: Antietam: The Battle of Antietam during the Civil War is often considered the most costly single-day battle in terms of life loss on American soil. Whenever I refer to that time as 'Antietam' and somebody raises an eyebrow in confusion, I get that look on and say 'bloodiest battle of the war.'"*

> *"The Badger is Angry"*
> *"This euphemism arises from when I was studying Greek medical thought in regards to female anatomy. Plato is quoted as remarking: 'In the middle of the flanks of women lies the womb, a female viscus, closely resembling an animal . . .' and goes on to talk about how they would burn incense under a woman's parts or have the woman inhale smelling salts to get the internal creature to move this way or that. A diagram of these thoughts that I once saw looked like a badger, and I am also unfortunate to get very bad cramps, so sometimes I say that the badger is very angry."*

> *"Blowing a fuse"*
> *"Blowing a fuse: a term I made up, meaning leaking from a tampon. The string on the tampon reminds me of a fuse, and blowing reminds me of a blow-out on a car with all the air leaked out."*

> *"Expelling my hysteria"*
> *"I like to tell my husband that I am 'expelling my hysteria.' First, because of the etymology of the word hysteria (in relation to the [ancient Greek word for] womb), and also as a reassurance that in a week, after it's over, my moods will be normal again."*

> *"I can't churn the butter today"*
> *"I recently started using, 'I can't churn the butter today' because I found a line from one of my niece's books that had a list of things girls couldn't do when they had their 'time of the month' and one of them was, 'I am not allowed to churn the butter/cream.' My mother and I read this and found it funny, because it was one of a long list of things a girl wasn't allowed to do. I am in my teens. Oddly enough I started my period the day of my sister's wedding, and didn't have the nerve to ask my sister what was happening to me; it took me two days to find out."*

I present these examples to make several points about creative language production. First, many of the metaphors for menstruation, including the most creative ones, seem to have developed to enable people to talk indirectly about a topic that is normally taboo. Being euphemistic is an important social skill when talk-

ing about private body parts and bodily functions that serve as one of many context-specific problems for creative language use.

Second, these excerpts from the menstruation website are full of very idiosyncratic motivations for the novel metaphors submitted to the site (mostly by women). In many cases, the idiosyncratic background knowledge about Antietam, Plato, and Greek words, for example, are shared with others co-present at the time when these metaphors were created. The presence of a specific problem to be dealt with, namely finding alternative ways of speaking about one's menstruation, sets the stage for the recruitment of this somewhat obscure knowledge to be able to find novel ways of speaking about a taboo topic.

Some of the terms of menstruation may seem offensive. But as the above examples demonstrate, the actual contexts from which these novel phrases came into being do not appear to be ones in which speakers specifically aimed to be offensive.

Finally, our judgments as to the creativity of these novel expressions for menstruation are not applied to just single linguistic expressions (e.g., *"The badger is angry"* or *"I can't churn the butter today"*). We also consider the explanations offered for why a particular word or phrase may seem creative, novel, or apt for those individuals involved in creating and using these metaphors. Creativity does not arise from some special, modular part of our inner cognition, but emerges in the service of particular social situations where individuals are attempting to solve some task or problem (e.g., talking about very private bodily functions, yet doing so in a unique, understandable manner).

Consider a final example of the social context for creative word production in a study of word play that occurred in the house of Dr. Samuel Johnson, now a museum in London, dedicated to the man who compiled the first *Dictionary of the English Language.* There was a three-month exhibition entitled "The House of Words", which encouraged visitors to engage in activities that reflected the themes of the museum, namely the creation of a contemporary English dictionary (Patel et al. 2016). Visitors approached a substantial desk in the museum that had a book in which they could write a word, an accompanying definition, and, if they wished, a drawing that illustrated the word.

The visitors produced several hundred entries, many of which may be described as "creative" to one degree or another. Consider several examples. In some cases, visitors transformed a person's name to refer to personal characteristics associated with some person with that name. For instance, the name *"Edgar"* was defined as "a helpful fellow", while *"Ameerah"* was defined as "the correct definition of princess". In another case, the name of British tennis player *"Tim Henman"* was written down and defined as a verb meaning "to fail at the last stage of any endeavour", which was pertinent given that Henman repeatedly

failed to win the Wimbledon tennis championship. A different technique used by visitors was to redefine the meaning of extant words, to attribute new meaning to long-standing and familiar nouns. For instance, *"broccoli"* was defined as "a disgusting abuse of the taste buds".

Many entries played on the situation, or task, in which the visitors found themselves. For example, one word written down was *"Johnsonate"*, which added the suffix *"ate"* to the word *"Johnson"*, which turned the name of Dr. Johnson into a verb meaning "to invent a new word". It is a word that may only be familiar to those who know of Dr. Johnson, or those who have visited the exhibition. The word *"Jonesonian"* was put down to allude to the idiom *"keeping up with the Joneses"*. There were also instances in which a suffix was added to the name of a person to produce a meaning that was associated with that individual's activities. Thus, one visitor added *"Abramofy"*, a play on the name of the Russian entrepreneur, Roman Abramovich, who owns the Chelsea Football Club. *"Abramofy"* was defined as "to buy an English football team and make it universally hated by all true born Englishmen". The creation of these new words partly assumed that others may possess relevant knowledge of the people being referred to in the new words.

Aside from adding suffixes to existing words, visitors produced new words from combinations, in some cases highly idiosyncratic combinations, of distinct words. For instance, *"HappyFoodDance"* was defined as "how your upper body and/or butt wiggle when you eat something incredibly delicious". *"MuffinBrain"* was defined as "to be stupid – a muffin instead of a brain". Finally, the expression *"Lapoftheroom"* was defined as "an excuse for not completing this form", which the writer then used in context (e.g., *"I will just do a lap of the room while I think then never return"*).

Finally, visitors made small changes to individual words to create new and distinctive definitions. For example, a *"cycloptimist"* is "one who rides around on a bicycle thinking they will never have an accident" (i.e., a combination of combining *"cyclist"* and *"optimist"*). A *"horrorscope"*, which combined *"horror"* and *"scope"*, was defined as "reading your astrological forecast in the newspaper, and then having a sense of fear and foreboding at the predicted day ahead".

This in-vitro study of novel word play exposed a variety of different means by which people create new words. Some of these are surely employed by ordinary speakers in everyday conversation. But the participants' task here was unusual in that they were to "create new words for a dictionary", a challenge that many of them likely had not experienced before. Nonetheless, the participants offered their suggestions, as well as different definitions for their new words, given the larger context of engaging in an activity within the home/museum of the fa-

mous Dr. Samuel Johnson. The new words produced were creatively made in the specific context of this environment.

6 Are Routine/Formulaic Sequences Fixed or Frozen?

Linguists often compare creative language with what is routine or formulaic. Formulaic language, for example, is widely defined as, "a sequence, continuous or discontinuous, of words or other meaning elements, which is, or appears to be prefabricated: that is, stored and retrieved whole from memory at the time of use, rather than being subject to generation or analysis by the language grammar" (Wray and Perkins 2000) (e.g., idioms, binomials, compounds). Using formulaic language contrasts with creative productivity, the ability to use the structural system of language (syntax, semantics, morphology, and phonology) in a combinatory way to create and understand novel utterances.

Common sequences of words are often more predictable and presumably easier to produce and interpret than creative phrases. Many psycholinguistic studies indeed show that familiar, routine language can often be understood quite quickly (Carrol and Conklin 2014; Gibbs and Colston 2012). Metaphorical language that is routine, such as idiomatic phrases, are typically processed faster than corresponding literal discourse (e.g., the idiom *"John blew his stack"* is processed faster than the literal paraphrase *"John got very angry"*) (Gibbs 1992). Faster processing of formulaic language may be explained probabilistically given speakers' knowledge about word co-occurrences.

But understanding routine language is more complicated than typically portrayed. To give one example, Siyanova-Chanturia, Conklin, and Schmitt (2011) conducted an eye-movement study with native and nonnative participants comparing reading of idioms (e.g., *"left a bad taste in my mouth"*) and matched control phrases (e.g. *"the bad taste left in his mouth"*) embedded in discourse passages. The eye-movement analyses of first-pass reading time, total reading time, and number of fixations showed that the native-speaking participants processed the idioms significantly faster than the nonformulaic controls. For the nonnative participants, there was no evidence that the idioms were processed any faster than the matched controls. Contrary to the general prediction, the figurative readings seemed to be read more slowly than literal readings. In this way, native and nonnative individuals approach routine language somewhat differently, and it is not the case that people interpret all idioms, for example, in the same manner.

Similar variations are seen in other studies on routine language use. Schmitt, Grandage, and Adolphs (2004) identified a number of different types of formulaic sequences from corpus evidence and embedded them in a spoken dictation task with native and nonnative English speakers. Each burst of dictation was longer than short-term memory could hold (i.e., 20–24 words), so the respondents were not able to repeat a burst from rote memory. This meant they were forced to reconstruct what they just heard. An analysis of people's repetitions showed that many formulaic sequences were reproduced intact with no hesitation pauses or transformations. But this was not the case for all of the sequences, as some formulas were recalled incorrectly and there were important variations among participants in their abilities to recall speech formulas without errors. This set of findings suggested that even if some word sequence is deemed formulaic, this does not directly imply that it is represented holistically in our minds, and retrieved as a frozen chunk, contrary to popular belief. I see this as one of the enduring myths about formulaic or routine language use (i.e., phrasal meanings are directly retrieved as a whole from some phrasal lexicon without the need to do any sort of compositional analysis).

Many idioms, in fact, are, to varying degrees, analyzable and understood through compositional processes, exactly as one would typically predict for creative language use. Participants in one series of studies named targets that were syntactically appropriate or inappropriate completions of semantically unrelated sentence contexts (Peterson et al. 2001). Sentences ended with incomplete idioms (e.g., *"kick the"*) and were biased for either literal (e.g., *"ball"*) or idiomatic (e.g., *"bucket"*) completions. People gave faster responses to syntactically appropriate targets than to inappropriate ones. This finding suggests that people engaged in normal syntactic processing during online idiom processing even for many less analyzable idioms. Various other works demonstrate that idiom understanding depends on some compositional analysis that triggers a figurative interpretation when a specific key word is encountered (Tabossi, Fanari, and Wolf 2009). These data also do not support the claim that idioms are necessarily understood in a holistic manner as long words.

The analyzability of an idiom is really a matter of degree depending on the salience of its individual parts. For instance, many English speakers view the phrase *"fall off the wagon"* (meaning "to start drinking alcohol again") as being less decomposable than *"pop the question"* (meaning "to propose marriage"), because the meaning that *"fall"* contributes to *"fall off the wagon"* is not as salient as the meaning that *"pop*" contributes to *"pop the question"*. When speakers judge that the idiom *"let off steam"* (meaning "to release inner anger") is analyzable or decomposable, they are essentially finding some relationship between the components *"let off*" and *"steam"* with their figurative referents *"release"* and *"anger"*

(Gibbs and Nayak 1989; Moon 1998). It is not surprising that speakers find some relationship between the noun *"steam"* and the concept of anger, because anger is metaphorically understood in terms of heat and internal pressure.

But even nonanalyzable idioms still retain some degree of compositionality. For example, people judge the classic, presumably frozen, phrase *"kick the bucket"* to be more appropriate in a pragmatic context where the person died quickly, as opposed to dying in a longer, protracted manner (Hamblin and Gibbs 1999). This intuition is motivated by people's understanding of the separate semantics for *"kick",* which alludes to a fast, sudden action. Furthermore, the parts of some idioms are more understandable than others and so their metaphoricity is not evenly spread across an entire phrase (Gibbs 1994; Moon 1998). *"Rock the boat"* is a transparent metaphor, but *"rock"* has an analogous metaphorical meaning, "upset", that is seen apart from idiomatic phrases. Verbs such as *"move, agitate, shake",* and *"stir"* systematically have meanings to do with physical movement and metaphorical meanings to do with emotional disturbance. Similarly, the metaphor of *"spilling"* in *"spill the beans"* is simpler than that of *"beans".* It is easier to draw an analogy between the action of spilling something physically and that of revealing a secret (compare *"let slip"* or *"drop"* as in *"drop something into a conversation"* and *"spill one's guts"*) than it is to draw an analogy between *"beans"* and *"secret". "Beans",* referring to individual pieces of knowledge, seems more metaphorical than *"spill"* and thus the idiom is asymmetrically metaphorical (Nayak and Gibbs 1990).

The different meanings of an idiom's parts may also be shaped by the overall figurative meaning of that phrase. For instance, the word *"spill"* now conventionally means "reveal" from its participation in the idiom phrase *"spill the beans"* (meaning "to reveal a secret"). Many dictionaries now see *"reveal"* as one of the primary senses of *"spill".* Linguistic interpretation does not always operate in a strict bottom-up manner (going from literal to figurative meaning), but involves top-down processes as well (where figurative meanings shape literal ones) (Geeraerts 1995). This possibility shows how idiom analyzability is not strictly grounded in lexical meaning apart from how words are pragmatically used in idioms. Most importantly, the analyzability of an idiom does not depend on that word string being literally well-formed (Gibbs and Nayak 1989). For instance, *"pop the question"* is literally anomalous but semantically decomposable. All that matters for an idiom to be viewed as decomposable is for its parts to have meanings, either literal or figurative, that contribute independently to the phrase's overall figurative interpretation.

These various linguistic observations and behavioral data on the analyzability of idioms raise questions about whether formulaic expressions are readily stored in a fixed manner in a special phrasal lexicon. Many speech formulas actu-

ally exhibit great syntactic and lexical flexibility, something which is typically associated with productive or creative language use (Parizoska 2022). Consider the following exchange (Gibbs and Colston 2012):

Two friends, Maria and Sven, who have not spoken in a few weeks are having a conversation. The last time they had spoken, Maria learned that Sven's very old pet dog was in poor health. During the present conversation, Maria asks Sven about his dog and Sven replies, "The bucket was kicked".

This short scenario demonstrates that the seemingly fixed idiomatic phrase, *"kick the bucket",* used commonly to mean "die", is in fact a decomposable expression in that one needn't preserve a certain specific linguistic form to be effective in communication. Indeed, one can sometimes replace the entire original form and still effectively use that expression to convey idiomatic meaning. Consider, *"She's going to punt that pail one of these days".* We might consider the fixed expression *"kick the bucket"* is, in fact, merely one pointer to a conceptual structure that can be invoked by a most likely finite, but nevertheless highly variable, number of surface forms. Although *"kick the bucket"* is the most prototypical pointer, it is unclear as to what must be preserved in order to keep this "fixed" form intact.

People also possess tacit knowledge about the underlying embodied, conceptual motivations for many routine phrases. This knowledge is closely tied to the ways people produce and interpret many idioms. For example, people tacitly understand that conventional phrases with roughly similar figurative meanings, such as *"blow your top"* and *"jump down one's throat",* can be motivated by different conceptual metaphors. Nayak and Gibbs (1990) examined this question in a series of studies on people's intuitions about idioms and their relations to conceptual metaphors and their context-sensitive interpretations of idioms. Participants in a first study were quite good at linking idioms (e.g., *"blow your stack"*) with their underlying conceptual metaphors (e.g., ANGER IS HEATED FLUID IN THE BODILY CONTAINER), suggesting that they have tacit beliefs of conceptual metaphors that motivated their understanding of some idioms.

A later study asked people to read short scenarios that were constructed to prime different metaphorical mappings (e.g., ANGER IS HEAT IN A PRESSURIZED CONTAINER or ANGRY BEHAVIOR IS AGGRESSIVE ANIMAL BEHAVIOR). Participants were asked to rate the appropriateness of each idiom for the given scenario. If people access the metaphoric mappings underlying an idiom, they should choose one idiom as more appropriate given their metaphorical understanding of the story context. This is exactly what was found. These findings showed that idioms are not "dead metaphors" as traditionally assumed, because people recruit information about the conceptual metaphors underlying idiomatic phrases to make sense of why these routine expressions convey specific metaphorical mean-

ings. Many routine, formulaic expressions are used and understood via compositional analyses that access conceptual information, an idea that is much more closely associated with creative language (Nayak and Gibbs 1990).

Another reason for thinking about routine speech as being more similar to creative language is seen in the ways idioms are understood in different pragmatic contexts. In one set of studies, people read stories ending with either idiomatic phrases (e.g., *"John blew his stack"*) or literal paraphrases for these statements (e.g., *"John got very angry"*) (Gibbs 1992). But the story contexts differed across experimental conditions. Some explicitly referred to the entailments of the underlying conceptual metaphors for the idioms. For example, the idiom *"John blew his stack"* is motivated by the metaphor ANGER IS HEATED FLUID IN THE BODILY CONTAINER, which expresses several entailments regarding the causation of the anger (internal pressure), the intentionality of the action (unintentional), and the manner in which it is expressed (violently). In contexts which accurately expressed all three of these entailments, people read the idiom *"John blew his stack"* more quickly than when a context violated one of the entailments (e.g., the cause of the anger was not internal pressure). The same set of contexts had no effect on the time it took people to read the literal paraphrases (e.g., *"John got very angry"*), probably because the paraphrases were far more vague in their meaning than are the detailed idiomatic phrases. Idioms, metaphors, and other forms of figurative language often immediately elicit embodied simulation processes as they are being processed (Gibbs 2006). These simulation processes enable speakers to demonstrate, and not just describe, what they are thinking in some specific moment (e.g., I think of John's anger as it exploding under pressure out of his bodily container and so state *"John blew his stack"* rather than *"John got very angry"*) (Gibbs 2023).

These findings suggest that verbal metaphors, even highly familiar routine ones, may be understood with different effort depending on how the pragmatics of the discourse context matched, or mismatched, the complex conceptual meanings of these conventional expressions. Similarly to creative language, people's use and understanding of routine sequences is very much dependent in the specific ways they are pragmatically used in discourse.

Speakers can, at times, consciously create novel versions of familiar, formulas, usually with specific tasks in mind. For example, consider the following proverbs that have been specifically twisted to represent unusual (e.g., ironic, satirical, absurdist) perspectives on life's enduring themes, called "Proverbs from Purgatory" (Schwartz 1995; itself an allusion to Blake's "Proverbs from Hell"):

A bird in the hand makes waste.
It's like killing one bird with two stones.
Two heads are better than none.
A friend in need is worth two in the bush.
A stitch in time is only skin deep.
Too many cooks spoil the child.
I'll have him eating out of my lap.
Let's burn that bridge when we get to it.
A friend in need opens a can of worms.
Don't cross your chickens before they hatch.
He's just a chip of the old tooth.

These twisted proverbs blend together parts of familiar metaphorical expressions to creatively convey new insights on old "pearls of wisdom". Each phrase expresses a satirical view, or the dark side, of common metaphorical themes that play such an important role in shaping people's beliefs and actions. Thus, *"A stitch in time is only skin deep"* provides a rather profound alternative view of the worthy reminder that *"A stitch in time saves nine"* (i.e., even our most conservative actions taken to protect us from future harm may not guarantee that we always remain safe). Notice here, once more, that the new spin on old expressions was done with a very specific creative task in mind: turning proverbs from hell to proverbs in purgatory. However, we don't know exactly when, how, or necessarily if, people may realize that some new expression is a creative instantiation of something quite familiar. Some of these associations may arise after, but not before, people have already understood the creative expression.

7 Conclusions

Creative and routine language may be far more alike than commonly believed. Simply judging some words or multi-word units as being "creative" or "routine/formulaic" does not imply that they are produced and interpreted according to different psychological processes. It is very tempting to assume that novel language emerges from conscious, deliberate attempts to be creative, just as it is appealing to believe that routine language is typically used and understood automatically, and perhaps holistically.

A closer look at the contexts in which people use both creative and routine speech suggests, nonetheless, that there are many complex factors that determine what words are produced and what they mean in context. All language use is tied to specific tasks that people are engaged in, and these pragmatic contexts must be at the forefront of research on creative and routine language use.

Linguists and psychologists face a difficult challenge when analyzing different linguistic forms. We need to not automatically assume simple connections between words and multi-word sequences with different mental processes. The difficulty here is that when people seem to easily produce or understand routine language, for example, without much deliberate thought, it appears as if these processes are not shaped by many interacting personal, interpersonal, and environmental constraints. To give an analogy, skilled drivers move around in their cars with little conscious thought, unless some problem is encountered. Yet this so-called automatic behavior is really organized by a complex set of cognitive, perceptual, and motor skills, all of which operate again without much conscious awareness (Gibbs 2018). For similar reasons, our intuitions that people mostly produce language in one of two modes, creative and routine, is far too simplistic and fails to acknowledge the dynamic reality of how people really work, including when they speak or write. It is important, if not essential, that we go beyond the study of single words and phrases and dig more into the background contexts that drive both creative and routine language use. This message may seem disappointing to scholars who maintain that creative and routine language reflect very different styles of thought, and are produced and understood by rather different mental processes. The methodological imperative is to look closer at the specific personal and social tasks people engage in when speaking creatively or routinely. When we do this, it becomes clearer that creative and routine language may be far more related than is often believed to be the case.

References

Abraham, Anna. 2018. *The Neuroscience of Creativity*. Cambridge: Cambridge University Press.

Amabile, Teresa & Michael Pratt. 2016. The dynamic componential model of creativity and innovation in organizations: Making progress, making meaning. *Research in Organizational Behavior* 36. 157–183.

Beaty, Roger & Paul Silvia. 2013. Metaphorically speaking: Cognitive abilities and the production of figurative language. *Memory & Cognition* 41. 255–267.

Benedek, Mathias & Anna Fink. 2019. Toward a neurocognitive framework of creative cognition: The role of memory, attention, and cognitive control. *Current Opinion in Behavioral Sciences* 27. 116–122.

Carrol, Gareth & Kathy Conklin. 2014. Getting your wires crossed: Evidence for fast processing of L1 idioms in an L2. *Bilingualism: Language and Cognition* 17. 784–797.

Dancygier, Barbara & Eve Sweetser. 2014. *Figurative Language*. New York: Cambridge University Press.

Fink, Andreas, Bernhard Weber, Karl Koschutnig, Mathias Benedek, Gernot Reishofer, Franz Ebner, Ilona Papousek & Elisabeth M. Weiss. 2014. Creativity and schizotypy from the neuroscience perspective. *Cognitive, Affective, and Behavioral Neuroscience* 14. 378–387.

Geeraerts, Dirk. 1995. Specialization and reinterpretation in idioms. In Martin Everaert, E-J. van der Linden, Andre Schenk & Rob Schreuder (eds.), *Idioms: Structural and Psychological Perspectives*, 57–74. Hillsdale NJ: Erlbaum.

Gibbs, Raymond. 1992. What do idioms really mean? *Journal of Memory and Language* 31. 485–506.

Gibbs, Raymond. 1994. *The Poetics of Mind: Figurative Thought, Language, and Understanding*. Cambridge: Cambridge University Press.

Gibbs, Raymond. 2006. *Embodiment and Cognitive Science*. New York: Cambridge University Press.

Gibbs, Raymond. 2010. The wonderful, chaotic, creative, heroic, challenging world of researching and applying metaphor: A celebration of the past and some peeks into the future. In Lynne Cameron (ed.), *Metaphor in the Real World*, 125–153. Amsterdam: Benjamins.

Gibbs, Raymond. 2011. Advancing the debate on deliberate metaphor. *Metaphor and the Social World* 1. 67–69.

Gibbs, Raymond. 2015. Do pragmatic signals affect conventional metaphor understanding? A failed test of deliberate metaphor theory. *Journal of Pragmatics* 90. 77–87.

Gibbs, Raymond. 2017. *Metaphor Wars: Conceptual Metaphor in Human Life*. New York: Cambridge University Press.

Gibbs, Raymond. 2018. Words making love together: Dynamics of metaphoric creativity. In Esme Winter-Froemel & Verena Thaler (eds.), *Cultures and Traditions of Wordplay and Wordplay Research*, 23–46. Berlin: De Gruyter.

Gibbs, Raymond. 2023. What's figurative about figurative language? *Lingua* 287, 103520.

Gibbs, Raymond. In press. *Our Metaphorical Bodies: Why Metaphor May Be Everywhere*. New York: Cambridge University Press.

Gibbs, Raymond & Herbert Colston. 2012. *Interpreting Figurative Meaning*. Cambridge: Cambridge University Press.

Gibbs, Raymond & Nandini Nayak. 1989. Psycholinguistic studies on the syntactic behavior of idioms. *Cognitive Psychology* 21. 100–138.

Gibbs, Raymond, Markus Tendahl & Lacey Okonski. 2011. Inferring pragmatic messages from metaphor. *Lodz Papers in Pragmatics* 7. 3–28.

Goatly, Andrew. 1997. *The Language of Metaphors*. New York: Routledge.

Grice, Paul. 1989. *Studies in the Ways of Words*. Cambridge, MA: Harvard University Press.

Hamblin, Jennifer & Raymond Gibbs. 1999. Why you can't kick the bucket as you slowly die: Verbs in idiom understanding. *Journal of Psycholinguistic Research* 39. 25–39.

Moon, Rosamund. 1998. *Fixed Expressions and Idioms in English: A Corpus-based Approach*. Oxford: Oxford University Press.

Nacey, Susan. 2013. *Metaphors in Learner English.* Amsterdam: John Benjamins.

Nayak, Nandini & Raymond Gibbs. 1990. Conceptual knowledge in the interpretation of idioms. *Journal of Experimental Psychology: General* 119. 315–330.

Parizoska, Jelena. 2022. Idiom modifications: What grammar reveals about conceptual structure. *Lexis: Journal in English Lexicography* 19. https://journals.openedition.org/lexis/6293#entries.

Patel, Menisha, Christian Heath, Paul Luff, Dirk von Lehn & Jason Cleverly. 2016. Playing with words: Creativity and interaction in museums and galleries. *Museum Management and Curatorship* 31. 69–86.

Peterson, Robert, Curt Burgess, Gary Dell & Kathleen Eberhard. 2001. Dissociation between syntactic and semantic processing during idiom comprehension. *Journal of Experimental Psychology: Learning, Memory, and Cognition* 27. 1223–1237.

Runco, Mark & Garrett Jaeger. 2012. The standard definition of creativity. *Creativity Research Journal* 24. 92–96.

Runco, Mark & Ivonne Chand. 1995. Cognition and creativity. *Educational Psychology Review* 7. 243–267.

Schmitt, Norbert, Sarah Grandage & Svenja Adolphs. 2004. Are corpus derived recurrent clusters psychologically valid? In Norbert Schmitt (ed.), *Formulaic Sequences: Acquisition, Processing and Use*, 127–151. Amsterdam: Benjamins.

Schwartz, Lloyd. 1995. Proverbs from Purgatory. *Paris Review* 13. 25–26.

Shutova, Ekaterina & Simone Teufel. 2010. Metaphor corpus annotated for source – target domain mappings. In *Proceedings of the Seventh International Conference on Language Resources and Evaluation (LREC 2010)*, 3255–3261. Valletta, Malta: European Language Resources Association (ELRA).

Siyanova-Chanturia, Anna, Kathy Conklin & Norbert Schmitt. 2011. Adding more fuel to the fire: An eye-tracking study of idiom processing by native and non-native speakers. *Second Language Research* 27. 1–22.

Skalicky, Stephen. 2022. Liquid gold down the drain: Measuring perceptions of creativity associated with figurative language and play. *Cognitive Semantics* 8. 79–108.

Sperber, Dan & Deirdre Wilson. 2002. Truthfulness and relevance. *Mind* 111. 583–632.

Steen, Gerard. 2008. The paradox of metaphor: Why we need a three-dimensional model for metaphor. *Metaphor & Symbol* 23. 213–241.

Swinney, David, Tracy Love, Matthew Walenski & Edward Smith. 2007. Conceptual combination during sentence comprehension: Evidence for compositional processes. *Psychological Science* 18. 397–400.

Tabossi, Patrizia, Rachele Fanari & Kinou Wolf. 2009. Why are idioms recognized fast? *Memory & Cognition* 37. 529–540.

Wray, Allison & Michael Perkins. 2000. The functions of formulaic language: An integrated model. *Language and Communication* 20. 1–28.

Zhu, Feifei, Zhang, Qinglin & Qiu, Jiang. 2013. Relating inter-individual differences in verbal creative thinking to cerebral structures: An optimal voxel-based morphometry study. *PLoS One* 8:e79272. doi: 10.1371/journal.pone.0079272.