Language, creativity, and cognition

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Introduction: Approaching the language–creativity–cognition nexus

The creative potential of human minds is directly reflected in language structure and use. However, any serious answer to the question, ‘What is the relationship between language, creativity, and cognition?’, will have to start with the disclaimer, ‘Well, it depends.’ More specifically, any cognitive model of language-based creativity fundamentally depends on (a) the place and status attributed to language within the cognitive architecture, (b) the linguistic phenomena that are regarded as being creative, and (c) how the working principles of the human mind are theorised. Indeed, for all three components of the language–creativity–cognition nexus, alternative approaches with corresponding objects of analysis, theories, and research methods can be found. Hence, to organise this overview of the relationship between language, creativity, and cognition, this chapter first addresses the cognitive character of creativity and illustrates the diverse nature of linguistic creativity on the basis of one example of creative ‘language’ use: an advertising poster by the charity Crossroads. This piece of data will then serve as a case study to illustrate how different cognitive approaches to language-based creativity would approach it.

For this discussion, the development of cognitive science from the 1960s until the present – with corresponding approaches to language – is taken as a baseline. On the basis of a general definition of cognition, three central theoretical paradigms in cognitive science are introduced. Starting from the paradigm of cognitivism, the chapter then discusses the computational views of linguistic creativity (see also Veale, Chapter 22) proposed by generativism and relevance theory. This will be followed by the cognitive-linguistic frameworks of conceptual metaphor and metonymy, as well as blending theory (see also Hidalgo-Downing, Chapter 6), which both embrace the framework of embodied cognition. Finally, current approaches to linguistic creativity will be discussed in order to show how they may include broader multimodal perspectives, as well as enactive and more socially distributed and mediated views of cognition (see also Jones, Chapter 3; Sawyer, Chapter 4). To complete this survey, the chapter will finally address some recommendations for practice and future research.

Linguistic creativity illustrated

Creative products mirror playful human intelligence. The concept of creativity therefore triggers fundamental associations with cognition. It points to the intelligent cognitive
capacities that make it possible for human beings to shape new, original, unprecedented, or unconventional products that depart from familiar, established, predefined, and fully predictable outcomes. In accordance with this definition, one can propose two complementary ways in which creative cognition can be linked to language. First, the notion of linguistic creativity can be related to the original linguistic patterns that emerge when human creativity is applied to linguistic structures as such. Thus, in a broad sense, the fundamental human capacity to create regular, but new, linguistic patterns, such as new words, sentences, or texts, can be regarded as reflecting language-based creativity. Secondly, linguistic creativity can also be associated with more unconventional communicative products that are creatively produced through language. In line with these complementary perspectives, linguistic creativity includes a wide range of phenomena. Beyond the general productivity of language, it involves figurative language (metaphor, metonymy, etc.), literary genres (for example poetry, narrative, and drama), puns, wordplay, and verbal humour (including irony and sarcasm), and the creative interaction of language with other communicative modes, such as gesture or imagery (as in advertising, comics, film, and theatre).

To illustrate the linguistic products of creative cognition, we can turn to an advertising poster (see Figure 2.1), which stems from a campaign intended to help the homeless in New York City. It was commissioned by Crossroads Community Services – an organisation that provides meals, safe shelter, and groceries to people in need (http://www.crossroadsnyc.org/).

![Figure 2.1 ‘Eating on the Street Isn’t Pretty’](image-url)
The poster contains two central linguistic elements: the statement EATING ON THE STREET ISN’T PRETTY and the appeal HELP US ERASE HUNGER IN NYC. The first expression is written in chalk and integrated into a piece of street art: the chalk drawing of a person’s face. The face contains some features stereotypically associated with homeless people, such as long hair, bags beneath the eyes, wrinkled skin, and a weary gaze. The image itself is drawn around a big hole in the pavement, which contains an ugly puddle of dirty water. Within the depiction of the face, the puddle constitutes the wide open mouth of the homeless person. The slogan EATING ON THE STREET ISN’T PRETTY is written right next to this feature, which creates the impression that the words are emerging from the protagonist’s mouth. The appeal HELP US ERASE HUNGER IN NYC is written at the bottom of the poster and is accompanied by the charity’s web address.

This poster is remarkably creative in several ways. First, the central slogan constitutes an original and unique linguistic contribution that reflects the productivity of language. When subjecting the whole string to a search engine, the retrieved links point directly to this special advertising campaign; hence the sentence is ‘novel’ and ‘unique’ (see Coulthard, 2004: 441). But beyond this basic level of productivity, the slogan also constitutes an interesting pun that exploits the inherent polysemy of the prepositional phrase ON THE STREET. The first level of linguistic creativity involved here thus reflects punning on the basis of lexical ambiguity. The first and ‘salient reading’ (Giora, 1997) takes STREET as a general location, with EATING ON THE STREET relating to the ‘conceptual frame’ of STREET FOOD. The second reading, however, treats STREET only as the concrete surface on which we walk. In line with this reading, EATING ON THE STREET implies the image of eating food that was thrown on, or can be found in, the street. Obviously, this second reading establishes an allusion to the fate of the homeless and forces the recipient to shift to this contrary conceptual frame (Coulson, 2000).

The slogan can be further interpreted as a meta-communicative comment on the depicted piece of street art itself: ‘What you see here is not pretty!’ Indeed, the direct physical association of a person’s mouth (and its contents) with the stench of the gutter and dirty water is highly unappetising. The same can be said for the rather ‘unpretty’ drawing in general, which is roughly sketched on the asphalt to illustrate the used and rugged face of a person who suffers from existing on the street. In line with this link between the slogan and the image, the entire depiction can be read as a complex figurative implementation of the slogan, which binds the meaning of the message to the aesthetics of its form. Along these lines, the slogan and the image constitute a thought-provoking counter-position to the fashionable trend towards eating street food, which mirrors a young, free, and independent lifestyle, or the scenario of professionals eating out in the street for lunch. This apparent attractiveness of street food is countered by the much less luxurious lifestyle of the homeless, who are literally forced to eat on the street, rather than only in the street.

The actual message of the poster HELP US ERASE HUNGER IN NYC → IN ORDER TO RELIEVE THE HOMELESS FROM THEIR INHUMANE CONDITIONS OF LIFE is also triggered in highly creative ways. Since the image is drawn in chalk, it can be washed away easily or cleaned by a gush of rain or clean water. By analogy, supportive action taken by the target audience would help to erase the dismal living conditions and the unhealthy eating practices of the homeless. Like the lines of chalk washed away from the pavement, a donation to the charity would metaphorically wash away the extent of poverty from the street. At the same time, it would also cleanse the dirty puddle – that is, the contents in the mouths of the homeless. In terms of figurative analogy, support would thus guarantee a more hygienic, and consequently healthier, diet. With regard to the depicted enunciation, it would also make it unnecessary for the homeless to utter their outcry EATING ON THE STREET ISN’T PRETTY. The metaphorical
‘rain of the donation’ would wash away the statement written in chalk. This multimodal creativity of the poster points to a further level of linguistic creativity: the creative interaction of language with other communicative modes.

As this preliminary analysis of the Crossroads advertising poster illustrates, creative patterns of language and creativity that are managed through language use can manifest themselves in a variety of different ways. Both the production and comprehension of the poster depend on creative and highly intelligent cognitive capacities. The following sections will outline how the most important cognitive models of linguistic creativity, as they emerge in the central paradigms of cognitive science, would conceive of the cognitive capacities underlying the poster.

**What is cognition? Alternative approaches to theorising the mind**

For centuries, philosophers and psychologists, and – more recently – linguists, computational scientists, and neuroscientists, have proposed alternative models of what the mind is and how it works (Waskan, 2006: ch. 1). As a result, alternative theories of the human mental capacity and its relationship to the human world of experience exist. In general, theories of cognition attempt to articulate the nature, as well as the connections between the systemic components, of the mind, as illustrated in Figure 2.2.

The mind (1) is part of an individual cogniser, who interacts with the world of experience by means of his or her bodily capacities (2). The world of experience involves both the physical properties of the world (3) and the cogniser’s social environment (4). The connection between mind and body (A) works as a minimal interface between the world and the mind; the human cogniser needs perceptual and sensory abilities (vision, hearing, smell, taste, and touch) to connect to the world, as well as motor skills (hand and body movements, and articulation) to act upon it. The link between the world of experience and the cognising individual (B) is thus defined by the stimuli that provide the input to human perception, on the one hand, and by the human cogniser’s manipulation of the physical and social worlds through his or her actions, on the other.

![Figure 2.2 The mind and its relationships with the body and the world of experience](image-url)
Along this minimal system of components and connections, one can define ‘cognition’ as subsuming the mental representations and cognitive processes that allow humans (and some other animals) to perceive the world, learn about it, memorise experiences, and think and speak about those experiences in order to solve problems and to act upon their physical and social environments in an effective and efficient fashion. In the history of cognitive science, alternative theories for accounting for these capacities have been proposed (see, for example, Bechtel, Abrahamsen, & Graham, 1998; Friedenberg & Silverman, 2011), at which we will look now.

**Cognitivism**

Emerging in the 1960s and inspired by the rise of computers, *cognitivism* conceptualises cognition in computational terms. Following the *mind is a computer* metaphor (Newell & Simon, 1976; Pylyshyn, 1984), this approach conceives knowledge as the symbolic representation of the world of experience in terms of a language of thought, or ‘mentalese’ (Fodor, 1975). Mentalese can be regarded as the programming language of the human mind. It ‘consists of a system of syntactically structured symbols-in-the-head (mind/brain) which undergo processing that is sensitive to that structure’ (Bechtel, Abrahamsen, & Graham, 1998: 64). In line with this language-of-thought hypothesis, cognitive processing (thinking, planning, memorising, etc.) is also modelled in highly computational terms: mental algorithms are run over symbolic representations in order to produce new syntactic relationships between the symbolically represented concepts (see, for example, Marr, 1982). Through such computation, it becomes possible for a human cogniser to think about the world and to solve complex problems mentally rather than physically – that is, by computing mental representations of the world of experience, rather than by manipulating the world in itself.

A second important idea underlying cognitivism is the ‘modularity-of-mind’ hypothesis (Fodor, 1983). Again, following the *mind is a computer* metaphor, the architecture of cognition is constituted by specialised modules, with each serving different cognitive functions (such as vision, language, encyclopaedic knowledge, motor skills, etc.). Similar to the different programs that are run on a computer, each of these modules is seen to work in relative autonomy from the others. Together with the language-of-thought conception, this has important consequences for the cognitivist view of the mind. First (with reference to Figure 2.2), the relationships between the mind and the body (A), and the mind and the world of experience (B), are highly restricted. The world (3 and 4) functions only as a source of input that is necessary for establishing symbolic representations. And the body (2) – like the mouse, keyboard, and monitor of a computer – works only as an input–output device. The body serves to transfer the perceptual input to the cognitive modules and to implement the results of thought processes in the form of motor actions. Cognitivism thus places its central focus on modelling the autonomous, encapsulated character of the mind (1), whereas the body (2), the physical world (3), and the social world (4), as well as the relationship between the mind and the body (A) and the relationship between the self and the world (B), are given a marginal status.

**Embodied cognition**

As its name indicates, *embodied cognition* stresses the relationship between the mind and the body (A) when accounting for cognitive capacities. Unlike cognitivism, from which
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it emancipates itself (see Varela, Thompson, & Rosch, 1991), this approach attributes to human bodily interactions with the world of experience (B) a central role for the constitution of mental representations and processes. Inspired by Jean Piaget’s (1954) foundational idea of the ‘sensorimotor stage’ in cognitive development, embodied cognition assumes that – in the form of mental schemata – conceptual representations and categories are fundamentally shaped by, and derived from, our bodily experiences with the physical properties of the world (Gibbs, 2006). For instance, humans can derive a complex, yet fundamental, ‘container’ schema by repeated interactions with a variety of concrete container-like objects encountered in the physical world (Johnson, 1987). Thus, rather than working as a mere input device, the body works as an active shaper of ideas itself. In line with the idea of constructivism (von Glasersfeld, 1984), the world of experience emerges in the form of a cogniser’s active and creative constructive efforts when engaging with it. As a result, the world of experience is not attributed an objective reality to be represented mentally in a symbolic format, but its structure, as perceived and understood by the cogniser, is the emergent outcome of the system of reciprocal codetermination between the world and the human’s bodily and mental apparatus (Varela, Thompson, & Rosch, 1991: 150). Similarly, advocates of situated cognition claim mental representations to be fundamentally rooted in sensory and motor abilities, and to be fundamentally grounded in situated interactions with the world of experience (Barsalou, 2003, 2005).

In recent frameworks of embodied cognition – subsumed under the notion of enactivism – the body is also attributed a vital role in cognitive processes such as problem solving or vision (Clark, 1997, 2008; Noë, 2004). For example, seeing implies moving the body towards an object, as well as grasping and turning it in support of the internal dimension of visual perception (Noë, 2009: ch. 6). The cognitive agent enacts the process of seeing by extending it into the domain of bodily action. Vision thus results as a form of ‘extended cognition’ (Clark, 2008: ch. 1) that transcends the mind and body boundary. In short, and with reference to Figure 2.2, the embodied view of cognition comprises a number of cognate approaches within cognitive science that highlight the role of the body (2) for the mind (1), and which advocate a highly dynamic and reciprocal view of the relationships between the mind and the body (A) and between the self and the world (B).

Starting from the early 1980s, these approaches have developed holistic conceptions of cognition that conceive cognitive abilities as being fundamentally rooted in general perceptual and sensorimotor capacities. Radically embodied views of cognition also provide the conceptual foundations for contemporary robotics (Pfeifer & Bongard, 2007). But while bringing the body and the environment back into cognitive theory, the social world of experience is still strikingly absent in this paradigm.

**Social constructivism, and socially distributed and mediated cognition**

Social constructivism is compatible, and overlaps, with a number of ideas advocated by embodied cognition. However, unlike the latter, it attributes to the social environment (4) a highly important role in the construction of mental representations and cognitive processing. In his social theory of learning, Lev Vygotsky proposed that caretakers and instructors often create a learning environment that is adapted to the child’s level of cognitive abilities and which ‘scaffolds’ their learning processes (Vygotsky & Cole, 1978). These ideas on the socially mediated nature of cognition have also become prominent in more recent Western approaches to ‘socially distributed’ and ‘mediated’ cognition (Hutchins, 1995). According
to this conception, modern human agents are often embedded in highly complex, and socio-
culturally and technically constructed, worlds of experience when working and acting in their
everyday professional and private lives. In these contexts, they can use cognitive tools and
media, such as books, calculators, screens, computers, etc., to manipulate a problem domain.
And when searching for a problem solution, human cognisers can substantially lower their
processing load by relying on the positive interdependence with a cooperative partner:

What is of particular interest about this new line of research is that cognitive func-
tions, previously conceived as formal or technical functions of abstract but machinelike
individual minds, were reconceptualised as ‘inter-mental’ functions, that is, as socially
shared, tool-saturated practices, which are only secondarily interiorized by individuals,
within contexts of interactional participation.

(Streeck & Mehus, 2005: 389)

The human ability to connect to and incorporate the social environment into thinking and
socially distributed problem-solving processes has inspired researchers of human social and
cultural cognition to locate the specifically human cognitive capacities within their cultural
intelligence of coordinating mental states with others (Tomasello, 1999, 2014).

In summary, and with reference to Figure 2.2, the social-constructivist views place a
very strong emphasis on the social world (4). They are interested in how the social envi-
ronment channels the relationship between the self and the world (B), and how it helps
an individual to reduce the processing load in the mind (1). The body (2) is important
as well, but rather than seeing cognitive structures as being the result of embodied inter-
action, the human agent is literally embodied in his or her socioculturally constructed
worlds of experience.

The subsequent sections scrutinise how these alternative models of cognition are allied
with the different views of language and how this affects the analysis of linguistic creativity.

Computing creative linguistic outcomes: Generative linguistics and relevance theory

Generativism and the creative power of the linguistic mind

From the late 1950s to the present, generative linguistics has advocated a fundamentally
cognitivist view of language. It is well known that Noam Chomsky’s (1959) devastating
critique of Skinner’s Verbal Behavior (1957) constitutes the intellectual landmark for an
incisive turn in cognitive science: the transition from behaviourism to cognitivism (Bechtel,
Abrahamsen, & Graham, 1998: 41). This transition also constitutes a decisive step for
the cognitive perspective on linguistic creativity. Centrally, Chomsky (1975: 61) showed
that behaviourism cannot explain why and how the finite cognitive systems of humans –
especially those of language-learning children – can produce novel, previously unheard
utterances without merely imitating the input that they receive from others. Chomsky’s
own answer to this explanatory challenge is inspired by Cartesian rationalist philosophy.
According to Descartes (1960 [1637]: 47), the creative intellectual capacities of (linguistic)
cognisers are not grounded in their experience, but rooted in the internal mechanics of
rational reasoning and the autonomy of their minds, which make it possible for them to
‘operate in all sorts of situations’. By analogy, Chomsky claimed that any theory of the
linguistic capacities that make it possible for us to learn a language and use it productively
must also model the internal mechanics of ‘linguistic reasoning’. In simple terms, Descartes’ (1960 [1637]: 32) ‘I think, therefore I am’ (cogito, ergo sum) translates into a Chomskyan, ‘I possess grammar, therefore I am a linguistic being.’ Generative theory therefore places linguistic creativity on centre stage: ‘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: 6). Our sheer ability to produce a virtually infinite number of linguistic patterns by means of finite cognitive capacities forces us to investigate the ‘creative and coherent ordinary use of language’ as a ‘central problem of Cartesian science’ (Chomsky, 2005).

The combination of cognitivist and Cartesian foundations in Chomsky’s theory leads to the characteristic assumptions of generative linguistics. First, in line with Descartes’ introspective reduction of human existence to the indubitable and innate presence of reason, Chomsky postulates the innateness of the human ‘language faculty’ in the narrow sense (Fitch, Hauser, & Chomsky, 2005). Moreover, by analogy with Descartes’ deductive approach to reasoning in logical terms, the aim of Chomskyan linguistics is to explain the working principles of grammar as a theory of the ‘mathematics of language’, possessed by an idealised speaker/hearer (Chomsky, 1965, 1999). To model the computational capacity underlying grammar, Chomsky further adopts a strictly modular conception of the mind that is in line with the cognitivist view of mental architecture. The language faculty is an independent module of the mind that functions according to isolated cognitive principles, which are not shared by other modules such as vision, motor skills, or encyclopaedic and pragmatic knowledge, etc. Grammar itself is also modular, consisting of syntax (that is, the set of grammatical operations) and the lexicon (that is, the idiosyncratic content over which syntactic rules can make linguistic computations).

The assumptions of cognitive modularity and the isolated exclusiveness of linguistic computations have a direct effect on the view of linguistic creativity in this cognitivist framework. On the one hand, as we have seen, Chomsky assumes language to be an inherently and fundamentally creative cognitive capacity. On the other hand, the conceptual isolation of grammar as a mental module, with its exclusive working principles, prevents generative theory from including any other phenomena of creative language use that go beyond the creativity of the ‘coherent ordinary use of language’. This said, it is important to emphasise that Chomsky (2007) does not ignore other aspects of language-based creativity (D’Agostino, 1984); he simply does not treat them as belonging to the language faculty in the narrow sense. With regard to the Crossroads advertising poster (see Figure 2.1), generative linguists would therefore not be interested in its creative content beyond the attested productivity and originality of the sentences EATING ON THE STREET ISN’T PRETTY and HELP US ERASE HUNGER IN NYC.

**Applications of generative theory**

It is not surprising that generative theory has not been broadly applied to the treatment of linguistic creativity beyond the study of linguistic productivity. Interestingly, however, the generative notion of competence has been applied to the creative linguistic phenomenon of humour. To develop their general theory of verbal humour, Attardo and Raskin (1991), and Attardo (1994), argue for a generative account of humour competence that enables language users to tell jokes from non-jokes. Similar to making grammaticality judgements, this competence is conceived as a set of humour-related knowledge resources that language users have to apply in order to recognise jokes.
Relevance theory and the computation of poetic effects

The cognitivist epistemology is also embraced by relevance theory, as proposed by Sperber and Wilson (1995). As a cognitive-pragmatic approach to meaning-construction, relevance theory is centrally interested in modelling the hearers’ ‘metapsychological abilities’ that allow them to infer the informative intentions underlying acts of communication, including creative forms of communication, such as the Crossroads advertising poster (Sperber & Wilson, 2002: 3). In line with the spirit of cognitivism, the theory assumes two cognitive modules to contribute to utterance comprehension (Sperber & Wilson, 2002; Wilson & Sperber, 2004). The first module is responsible for purely linguistic decoding processes and corresponds to the semantic component in generative theory. The basic semantic meaning, or ‘logical form’, of a sentence is computed compositionally (Chomsky, 1995: 222; Sperber & Wilson, 1995: 9–10). But this language module is not sufficient to derive the context-specific communicative meaning of an utterance. This meaning is therefore inferred through computation in a distinct cognitive module: a mind-reading module that works as an utterance comprehension submodule (Sperber & Wilson, 2002: 5) and is driven by the cognitive principle of relevance.

The cognitive principle of relevance is a measure of cognitive economy, which entails that cognisers always attempt to optimise the amount of information pressed out of a stimulus. An input is optimally relevant if a maximum of cognitive effects can be generated by means of the least cognitive processing effort possible (Sperber & Wilson, 1995: 132–41). To increase these potential cognitive effects for a stimulus, the interpreting cogniser must actively search his or her encyclopaedic knowledge of his or her momentary perceptual representations for mental contexts against which the input becomes optimally relevant. Driven by the cognitive principle of relevance, the mind-reading module automatically causes the interpreter to activate only those contexts that allow him or her to maximise the potential insights into the intended message. With regard to interpreting the Crossroads poster, one can thus assume that receivers actively recruit knowledge about homeless people, their conditions of living, and their stereotypical eating habits, etc., as well as a perceptual representation of the chalk drawing, to work as mental contexts against which they interpret the expression EATING ON THE STREET ISN’T PRETTY. On the basis of evoking these chunks of knowledge, they can make inferences about the poster producers’ informative intentions, such as those outlined earlier, when we analysed the poster.

The idea of active inferencing based on the cognitive principle of relevance does not explain the poster’s communicative creativity from the perspective of the message producers. To deal with this aspect, relevance theory regards communication as an ostensive act of choosing communicative stimuli in order to manipulate the cognitive representations – the cognitive environment – activated by the interpreting receiver (Sperber & Wilson, 1995: 39). The ostensive act follows a communicative principle of relevance, according to which the speakers choose the most relevant communicative stimuli to implement their communicative intentions (Sperber & Wilson, 1995: 46–64); these stimuli are those most relevant to the hearer’s processing efforts needed to generate the intended communicative effects. Accordingly, the creative achievement by the designers of the Crossroads poster was to arrange the ostensive stimuli (the drawing, the puddle, the slogan, and the appeal) in such a way as to cause the recipients to activate those chunks of encyclopaedic knowledge that bring the dismal situation of the homeless and the suggested solution to their problems to the front of attention.

The combination of the speaker’s ostension with the recipients’ inference results in the model of ostensive-inferential communication (Sperber & Wilson, 1995: 50). The producers’
creative ostensive acts have to strike an optimal balance between rendering parts of the message explicit in order to guarantee the recipients’ comprehension and, at the same time, stimulating those relevance-based inferential processes that allow the recipients to compute the poster’s novel implicit message against the background of the semantic inputs given by the slogan, the appeal, and the image. With regard to linguistic creativity, the distinction between ‘strong’ and ‘weak’ communication is of central importance:

A speaker who constrains the interpretation of his [or her] utterance so that the hearer takes very little responsibility in the choice of . . . effects is said . . . to be engaging in strong communication. The greater the responsibility the hearer has in the selection of contextual assumptions and effects, the weaker the communication. (Blakemore, 1992: 157, emphasis original)

Creative products such as the Crossroads advertising poster primarily constitute cases of weak communication, because the actual message is not stated, but has to be actively computed by the receiver. Shifting activity on the side of the receivers is a powerful advertising strategy, because it forces the readership to engage actively with the poster on a cognitive level. This is the basis for stimulating cognitive, as well as affective, processes that convince the recipient to donate to the charity.

Applications and criticism of relevance theory

Unlike generativism, relevance theory has been applied to a great number of phenomena of linguistic creativity – most importantly, metaphor and irony (see, for example, Vega Moreno, 2007; Wilson & Carston, 2006; Wilson & Sperber, 2012: chs 5 and 6). The computational process of generating the meaning of a creative message follows a complex multistep incremental procedure: first, the recipient has to derive the propositional content in the linguistic module; the output of this semantic process then has to be further processed in the inferential module in order to generate a more contextually embedded utterance meaning, its explicature, and to derive its implicatures (Carston, 2002: ch. 2). With regard to the Crossroads poster, linguistic creativity also works on these two levels. First, as we have seen, the polysemy of the phrase eating on the street can be disambiguated in two ways. The poster thus instigates two explicatures for the slogan: ‘consuming street food’ vs ‘eating from the street’. This double-take allows the street food interpretation to be ironically echoed in the eating from the street reading (Wilson, 2006: 1724). Following the distinction between strong and weak communication, this creative act of double communication further generates poetic effects (Pilkington, 2000). Poetic effects are weakly implicated cognitive effects that create an affective bond between the producer and the receiver (Sperber & Wilson, 1995: 224). With regard to deriving the implicatures for the figurativity of the Crossroads poster, the feeling of disgust that we experience when identifying the face’s mouth with a dirty puddle, as well as the implied meaning of washing away this misfortune by donating money to the charity, constitute such poetic effects that carry the message of the advertisement. The extra processing cost that the recipients have to invest into deriving the advertising message is thus rewarded by the great amount of insights that can be gained from it: ‘. . . the wider the range of potential implicatures and the greater the hearer’s responsibility for constructing them, the more poetic the effect, the more creative the metaphor’ (Sperber & Wilson, 1995: 236). Along these lines, relevance theory explains why and how a cogniser can appreciate the discovery of weakly implicated messages in creative linguistic products, as opposed to the explicit statement of meanings in less creative forms of communication.
A critical alternative to the relevance theoretical model of creativity has been proposed by Giora (2003: 176) in terms of her psycholinguistic ‘optimal innovation’ hypothesis. Accordingly, an optimally creative stimulus evokes a novel response, while still allowing for the activation of the more salient, conventional reading. Following this psycholinguistic account, the Crossroads poster is optimally innovative, because it allows the recipient to activate both the novel homeless-related and the more salient street-food-related meanings of eating on the street in combination with the image. The receivers’ ability to see the difference between the salient and the new meaning then unfolds the advertising poster’s creative potential.

**Figurative concepts, blended conceptualisations, and the creative power of embodied cognition**

At the beginning of the 1980s the generative programme and the cognitivist epistemology became challenged from within cognitive science by an alternative theory of language that is today known as cognitive linguistics. Emancipating themselves from the modularity-of-mind, as well as the autonomy-of-language, hypotheses, cognitive linguists have embraced the central tenets of embodied cognition, and regard language as being grounded in general cognitive capacities such as perception, conceptualisation, and categorisation (see, for example, Croft & Cruse, 2004; Evans & Green, 2006; Geeraerts & Cuykens, 2007). This is of particular importance with regard to linguistic creativity.

**Conceptual metaphor and metonymy**

Rather than conceiving cognisers as passive representers of the external world of experience, cognitive linguists claim that they possess highly creative minds that actively construct conceptualisations of the world of experience. Most centrally, this insight has been driven by conceptual metaphor and conceptual metonymy theory (Lakoff & Johnson, 1980; see also Dancygier & Sweetser, 2014; Hidalgo-Downing, Chapter 6). Analysing expressions such as ‘He tries hard to defend his argument, nevertheless he can be attacked fairly easily’, ‘Don’t give in to this criticism’, or ‘I have to surrender to her overwhelming evidence’, Lakoff and Johnson (1980) discovered that conceptual structures can be fundamentally figurative. For instance, all the former expressions incorporate the conceptual metaphor argument is war, with notions from the concrete conceptual source domain of war being mapped onto the more abstract target domain of argument. Conceptual metaphor theory thus established a new perspective on metaphor, which attributes to it the status of a central cognitive mechanism for conceptualisation and categorisation, rather than merely seeing it as literary or rhetorical decorum (Lakoff, 1987; Lakoff & Turner, 1989). In the light of conceptual metaphor, human cognition is revealed as being fundamentally creative, because much of the representation of the world of experience works through metaphorical concepts (Gibbs, 1994; Lakoff & Johnson, 1999). Many basic conceptual metaphors are directly connected to the sensorimotor interactions of an embodied cogniser within his or her physical world of experience. For instance, the metaphors good is up and bad is down are linked to various embodied experiences such as body posture, facial expressions (laughing vs sad mouth), or social hierarchies (Lakoff & Johnson, 1980: 14).

Apart from conceptual metaphors, conceptual metonymies have also attracted a great deal of cognitive linguistic attention. Unlike the former, conceptual metonymies are based on conceptual contiguity relationships, such as part–whole structures, within the same
domain of encyclopaedic knowledge (Lakoff & Johnson, 1980: 35–9; see also Barcelona, 2000). For instance, in the conceptual metonymy container for content, as reflected in ‘He drank five bottles’, the container concept is used as a reference point to provide conceptual access to the actual liquid that was drunk (Langacker, 1993: 29–35). Conceptual metonymies are often combined with conceptual metaphors to yield highly creative and complex patterns of conceptual figuration (Goossens, 1990).

To illustrate the strengths of this cognitive-linguistic framework with regard to explaining linguistic creativity, the Crossroads advertising poster can again serve as a playground. According to conceptual metaphor and metonymy theory, cognisers can appreciate the creative communicative impact of the poster because they are able to activate the pre-established figurative concepts in their minds that they have obtained from their embodied interaction with the world of experience. First, the phrase EATING ON THE STREET is likely to activate the conceptual metaphor BAD IS DOWN. This figurative concept has the power of guiding the cogniser towards the negative implications of the slogan. The social-critical dimension of this metaphorical concept is engendered by the cunning perspective from which the photograph is taken. The shot forces onlookers to gaze down on the drawing on the street and causes them to enact through their perceptual stance the low social status that is generally attributed to the homeless. To creatively conceptualise the unacceptable living conditions of the homeless, this metaphor is combined with the metonymies form for content and picture for depicted. These figurative concepts allow the readers to establish a connection between the phrase IS NOT PRETTY and the crude aesthetic of the piece of street art, on the one hand, and between the drawing and the poor living conditions of homeless people, on the other. The central metonymy for the poster, PART FOR WHOLE, is encapsulated in the ingenious use of the hole in the street and the puddle of dirty water. The puddle not only stands out as the most salient part in the whole face of the homeless person, but it also constitutes the central part that the campaign is all about. The mouth metonymically stands for the whole aspect of eating. Moreover, the dirty content of the puddle is the part of the homeless person’s eating habits that stands for the whole problem of unhealthy food that they may find on the street.

The appeal HELP US ERASE HUNGER IN NYC can also be connected to the conceptual metaphors PROBLEMS ARE UNPLEASANT FORCES and GETTING RID OF PROBLEMS IS OPPOSING THOSE FORCES (Langlotz, 2006: 158). These metaphors are creatively combined with the concept of money is a liquid (O’Connor, 1998), which is implied in economic terms such as ‘cash flow’, ‘liquidity’, or ‘dried-out markets’. Relative to these patterns, erasing the social problem of hunger can be conceptualised in terms of the ‘gush of donation’, which is figuratively poured over the image to wash away the homeless person’s bad condition. Again, the figurative ‘logic’ of the implied metaphorical and metonymic patterns allows the receiver to conceptualise the appeal’s implied message. By washing away the ugly drawing, the financial support will also wash clean the content of the puddle – the content of the homeless person’s mouth, metonymically speaking. Thus the water of donation will improve the diet of the victims and make their lives cleaner.

Applications and criticism of conceptual metaphor and conceptual metonymy theory

This reading of the Crossroads poster in terms of conceptual metaphor and conceptual metonymy theory provides only one of the great many different phenomena of linguistic creativity to which these frameworks have been applied. Among other issues, researchers
have analysed creative compounding (Benczes, 2006), phraseology and idiomatic creativity (for example Gibbs & O’Brien, 1990; Langlotz, 2006), metaphorical creativity in discourse (for example Semino, 2008), advertising (for example Lundmark, 2005), and humour (for example Veale, Feyaerts, & Brône, 2006).

Despite its wide application, the conceptual metaphor approach to figurative creativity has been controversial. For instance, the psycholinguist Glucksberg and his colleagues (see Glucksberg, 2008; Glucksberg & McGlone, 1999) have questioned the retrieval of stable metaphorical mappings from the conceptual system and instead propose flexible processes of attributive categorisation in figurative-language comprehension (Glucksberg, 2001). According to this model, a cogniser would have to actively and unconventionally attribute the presented face and the slogan EATING ON THE STREET to a superordinate category, for example EATING LIKE THE HOMELESS. This creative attribution of a category departs from the more normal attribution to the category STREET FOOD. In this way, the receiver could handle the double reference of the expression (Glucksberg, 2001: 46).

**Blending theory**

Within the field of cognitive linguistics, blending, or conceptual integration, theory emerged in the 1990s as a general cognitive theory of creativity (Fauconnier, 1997; Fauconnier & Turner, 1998). Blending theory is also rooted within the general epistemological postulates of embodied cognition. However, unlike conceptual metaphor theory, which is interested in stable patterns of conceptual figurativity, blending theory models the situated conceptualisation processes that human cognisers perform in creative mental processing. This approach to online meaning generation is thus also compatible with the framework of situated cognition (Coulson, 2000).

To analyse the complex mental processes that are involved in producing and comprehending creative conceptualisations and linguistic outcomes, blending theory makes use of the central notion of ‘mental space’ (Fauconnier, 1997: 11). Mental spaces are defined as momentary conceptual packages that are evoked in short-term memory within situated conceptualisation processes (Fauconnier, 1994: ch. 1). Conceptual integration and blending processes always consist in the activation of a minimum of four mental spaces: two input spaces, a generic space, and a blended space, or ‘blend’ (Fauconnier & Turner, 2002: 46). Importantly, the association between the four mental spaces is dynamic, rather than static. Central to the evocation of new creative insights through blending processes is the interaction between chunks of information that are selected from the two input spaces and selectively mapped into the blend. Through this interaction, novel and unprecedented mental structures can be creatively constructed.

The creative arrangement of the Crossroads poster also forces the interpreter to integrate conceptual implications from various sources. Most centrally, the face of the homeless protagonist constitutes a blend: the recipient has to integrate the hole plus dirty puddle with the chalk drawing in order to see the complete depiction of the face. First, the generic space with the schematic representation of round form allows the cogniser to associate the puddle with the mouth. On the basis of this association, the blend can then inherit its basic facial structure from the drawing (input 1), while the physical properties of the mouth and its contents stem from the puddle hole (input 2) (see Fauconnier & Turner, 2002: 131). Through this integration, a new conceptual structure emerges. In the blended space of the integrated face, the cogniser can actively exploit the creative potential of the links between inputs 1 and 2 through the conceptualisation process of ‘running the blend’ (Fauconnier & Turner, 2002: 48). The
mentally blended conceptualisation of a mouth full of stale and stinking water is immediately unappealing and highly unappetising. Along these lines, the poster’s creative arrangement forces the cogniser to mentally integrate two concepts that are not conventionally categorised as belonging together. Interestingly, the implied message of the appeal help us erase hunger also applies directly to the components of this blended conceptualisation. More specifically, the appeal invites one to overcome the conceptual implications of the blend by symbolically erasing the two input spaces. As a result, the idea of erasing hunger becomes associated with erasing the dismal vision that is carried by the blended conceptualisation. Thus, by cleansing the dirty puddle in input 2, the conceptual impact of unhealthy (street) food is erased from the blended conceptualisation. Moreover, by mentally erasing the chalk drawing (input 1), the fate of homeless people in being bound to their existence on the street is effaced from the blended integration network that is evoke by the poster. Having deleted both input 1 and input 2 from the conceptual network, the emergent meaning in the blend – the unacceptable living conditions of the homeless – can be erased as well.

Applications and criticism of blending theory

The creative linguistic phenomena covered by blending theory are vast, and range from semantic composition and lexical compounding, to the highly complex sense-making processes involved in analogical reasoning (Fauconnier & Turner, 2002; Turner, 2014), humour (Coulson, 2000, 2005), or literature (Dancygier, 2012; Oakley, 1998; Turner, 1996). Blending theory has also been applied well beyond language to cover different forms of art and music (see Sambre, 2013; Turner, 2006). A great many other publications can be found on the Blending and Conceptual Integration website (http://markturner.org/blending.html).

Despite its wide-ranging success and broad application to a welter of creative phenomena, blending theory does have its critics (see, for example, Gibbs, 2000). The central problems and some counter-arguments are addressed in Coulson and Oakley (2000). Most importantly, the descriptive power of blending theory is bound to the risk of accounting for too much and explaining too little. Moreover, since blending theory is not based on strict theoretical premises and criteria, it is hardly testable and falsifiable. And, finally, blending analyses tend to provide post hoc interpretations of singular creative phenomena, rather than systemic analyses of coherently collected corpora of data.

Expanding the creative mind: Cognitive poetics, and multimodal, enacted, and socially distributed creativity

While the early cognitivist approach to creativity provided by generativism was based on a highly reductionist and completely internalised view of the human mind, current approaches are characterised by expansion of the presented frameworks into literary analysis, into communicative modes other than language, and into enactionist views of embodied creativity, as well as socially distributed accounts of joint creative achievement.

Cognitive poetics

The first notable expansion within the analysis of linguistic creativity and cognition emerged in the late 1990s with the advent of cognitive poetics (see Stockwell, Chapter 13). This approach has its origins within cognitive linguistics as a subfield specialising in applying
relevant heuristics – including metaphor, metonymy, and blending – to literary criticism (see, for example, Freeman, 2013; Stockwell, 2002; Tsur, 2008). Some cognitive-linguistic roots for cognitive poetics can already be found in Lakoff and Turner’s (1989) approach to poetic metaphors. Recently, however, the application of the whole range of cognitive-linguistic research tools has been expanded to phenomena such as literary stylistics and genres (Semino & Culpeper, 2002), rhetorical figures, tropes, and imagery (Brandt, 2004), reader reception (Stockwell, 2009), and narrative organisation (Dancygier, 2012). A recent overview and critical account of this field is offered by Brône and Vandaele (2009).

Multimodal creativity

Since it regards language as being structured by general conceptual mechanisms, cognitive linguistics has always been theoretically open to integrating linguistic analyses with other semiotic modalities (see, for example, Langacker, 2008). Indeed, the very fact that metaphor, metonymy, and blending are usually modified by the adjective ‘conceptual’ highlights that they are conceived of as general creative mechanisms, which transcend linguistic patterns of creativity. Nevertheless, cognitive-linguistic explorations into creativity were predominantly focused on language for a long time. Gesture research was one of the first areas to extend metaphor theory into the domain of non-verbal communication. In this strand of cognitive linguistics, it is shown that gestures frequently enact conceptual metaphors (Cienki & Müller, 2008). Moreover, gestures can also be produced creatively – that is, through formal aspects such as greater dynamicity, the use of a more extensive gesture space, or in creative combination with body posture or facial expressions (Cienki & Mittelberg, 2013: 234–41).

Compatible with gesture research is the analysis of conceptual metaphor and metonymy in pictorial representations (Forceville, 1996, 2012) and multimodal forms of communication, such as comic strips (Forceville & Urios-Aparisi, 2009). Like gesture research, this field of cognitive linguistics has shown that the central cognitive-linguistic mechanisms of meaning construal apply across different communicative modes. For instance, this is demonstrated in Eerden’s (2009) analysis of the consistent use of anger metaphors in Asterix comics and animated films. It is revealed that while the metaphorical concepts are relatively stable, their implementation may vary in accordance with the specific affordances of the communicative modes.

Pictorial metaphor and multimodal creativity are also of great relevance for the analysis of the Crossroads advertising poster (Figure 2.1). As has been shown earlier, the chalk drawing of the weary face, in combination with the puddle hole, carry central parts of the poster’s figurative meaning. Moreover, the slogan eating in the street isn’t pretty not only constitutes an element of linguistic creativity, but also, like a speech bubble in a comic strip (see Forceville, 2013), is visually integrated into the depiction of the homeless person and thus achieves the more dynamic reading of constituting an outcry. The multimodal arrangement of the poster is fully compatible with the epistemological stance of mediated cognition, according to which cognitive processes cannot be conceived as purely internalised mental achievements – as claimed in the traditional view advocated in cognitivism and still predominant in early cognitive linguistics. Instead, creative processes become distributed over alternative media that represent and scaffold the creative process outside, rather than inside, the mind (Williams, 2008, 2013). In this vein, the poster can be said to visually represent the input spaces (drawing and puddle hole) and the blended space...
(face with puddle mouth) of the creative blending process, rather than to treat them as internalised mental structures. This externalisation of the creative process works similarly with gestures, which externalise metaphorical conceptualisations to make them directly accessible to the embodied mind of the creative cogniser.

**Enacted creativity**

Gesture research and multimodal cognitive linguistics stress the importance of media other than language for creative conceptualisation. For human cognisers, the body is the central medium for interacting with the world of experience. Very recent research into embodied cognition from an enactionist perspective reveals that ‘the body is an ever-present part of the context in which we use our minds, and therefore has pervasive influences on the neurocognitive activity that constitutes our thoughts’ (Casasanto, 2014: 115). The same must be true for processes of creative achievement. What is striking about the Crossroads advertising poster in this respect is that the call for action in the appeal HELP US ERASE HUNGER IN NYC contains a hidden request for enacting the literal action of erasing hunger via figuratively erasing the chalk drawing of the homeless person’s weary face. The poster thus invites the target audience to perform a mental simulation (Barsalou, 2005) of the bodily action of effacing the image as a symbolic stand-in for the concept of ERASING HUNGER. The poster ingeniously activates the enactive engine of a fully embodied cogniser. Similar facets of enacted creativity are implied in the perspective from which the chalk drawing is photographed: this perspective enacts the conceptual metaphor BAD IS DOWN through the visual stance that the recipient is forced to take. This reading of the poster is fully compatible with recent research by Sweetser (2014), who shows how viewpoint connects language and gestures with the bodily enaction of creative processes.

**Socially distributed creativity**

While the Crossroads advertising poster has proven to be useful for illustrating a number of cognitive approaches to linguistic creativity, it seems inadequate with regard to social constructivist models of cognition. Apart from the physical world depicted on the poster, the social world of the producer and the receiver is strikingly absent. However, although the social agents are not part of the poster’s stimulus world, the cunning arrangement of the verbal and pictorial modes in the poster instigates a socially distributed process of joint creative achievement. In Vygotskian terms, the poster works as a scaffolding that mediates the creative process shared by the designers and the recipients. Put simply, the producer provides the chalk drawing and the puddle as central stimuli, while the recipient is invited to erase them through the mental simulation of the physical action of effacing the drawing. This joint responsibility for the derivation of the advertising message and the implied problem solution carries further creative potential on the communicative meta-level: it makes clear that the situation of the homeless can be improved only through joint efforts. In Clark’s (1996) terms, the poster therefore implements a form of joint activity in which both the producer and the receiver share the task of developing and realising the creative message. This stance is compatible with very recent research in cognitive linguistics, which has highlighted the social-cognitive dimensions of linguistic creativity by expanding cognitive-linguistic concepts into the domains of discourse analysis and interactional sociolinguistics (Jones, Chapter 3; Langlotz, 2010, 2013; Zima, 2013).
Recommendations for practice and possible directions for future research

This chapter has taken one product of creative cognition as an illustrative basis on which to present historical landmarks in modelling linguistic creativity from a cognitive perspective. While the organisation of the chapter suggests scientific progression from the early 1960s to the present, I have avoided postulating the superiority of one approach over the other. Instead, it should have become evident from the discussion of the Crossroads advertising poster (Figure 2.1) through the lens of the different frameworks that each of them starts from its own specific view of cognition and corresponding research interests. Consequentially, each theory scrutinises linguistic creativity in its own specific ways. As Gibbs and Colston (2012) have shown in their recent work, it seems rather unlikely that a unitary approach can handle the complexities underlying figurative language. The same is certainly true for linguistic creativity in general. Given the multitude of phenomena that are subsumed under the notion of linguistic creativity and given the sheer complexity of creativity in its own right, it is therefore vital for practitioners to define their objects of analysis very clearly and to embark on an approach that is compatible with the chosen research focus. With regard to future research on language, creativity, and cognition, it seems evident that despite the existence of the different models presented in this chapter, the mysteries of linguistic creativity remain far from being fully uncovered. Future research should therefore continue with the trends of expansion addressed in the previous section. Moreover, it should attempt more decidedly to explore potential convergences and points of compatibility between the presented frameworks. This desideratum should not only apply to different research strands within cognitive linguists, for which many synergies have been addressed already, but also invite more exchange between cognitive linguistics, relevance theory, and generative frameworks of linguistic creativity and productivity (see, for example, Wilson, 2011).

Related topics
cognitive stylistics; computational approaches to language and creativity; lexical creativity; metaphor and metonomy; multilingual creative cognition

Further reading
This is a good overview of the history and the different subfields of cognitive science through to the end of the twentieth century.

The papers in this collection consider a number of issues relevant to language, creativity, and cognition, including the interplay of language and other communicative modes.

The work offers an up-to-date introduction to figurativity from a cognitive-linguistic perspective.

This collection focuses on the different cognitive processes of producers and consumers of creativity from a multidisciplinary perspective.

The book presents a recent introduction to relevance theory and its view of linguistic creativity.

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