

Conceptual Blending and Compound Figures of Speech

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Abstract

Compound figures of speech, such as hyperbolic metaphors, ironic metaphors and ironic hyperboles, have been investigated from several points of view, but the complexity of the phenomena is such that a thorough explanation is still lacking. This contribution will be focused on ironic metaphors. It will be suggested that a plausible explanation of their process of interpretation can be found within the framework of Conceptual Integration Networks. Specifically, two alternative proposals are discussed. The first one is in line with two-stage theories of figurative language comprehension, as it describes the interpretation of the compound as a blending of a blending. The second one analyses emergent meanings on a probabilistic base, as in constraint-satisfaction models of irony, which are consistent with one-stage theories. Finally, an interpretation of the empirical results obtained in previous studies is provided.

Keywords: metaphor, irony, compound figures of speech, conceptual blending, constraint-satisfaction models

1. Introduction

Compound figures of speech (Stern, 2000; Bezuidenhout, 2001; Popa-Wyatt, 2010, 2017, 2019; Barnden, 2020; Bertuccelli Papi & Aru, 2020; Aru, 2023) are complex non-literal expressions formed by the interaction of two or more tropes (e.g., ironic metaphor, ironic hyperbole, hyperbolic metaphor, etc.). The present contribution examines whether the theory of cognition of Conceptual Integration Networks (Turner & Fauconnier, 1998, 2002) can provide the theoretical basis to analyse the interactions within the ironic metaphor compound.

In Conceptual Blending, blends often serve as inputs for further blending and reblending (Fauconnier & Turner, 2002). The working hypothesis of this study is that one could first solve the metaphorical blending and then further blend its emergent structure with the ironic attitude conveyed by the utterance.

More specifically, the two figures might be found in a co-composition relationship involving setting up elements from separate inputs (metaphorical and ironic, for instance). The conflict between the metaphor's emergent structure and the presence of irony causes an incompatibility of the input elements (as in ironic utterances interpretation in Coulson's Space Structuring model, 2001). The incompatibility results in a clash projected into the new blended space and gives rise to the ironic shift of meaning, simultaneously expressing the speaker's attitude.

It is possible, however, that the interpretation of these two figures runs in parallel. In other words, our mind might process the utterance in a probabilistic way, as in constraint-satisfaction models of irony (Gibbs, 2005; Ivanko & Pexman, 2003). Thus, the utterance activates multiple cues which provide support for different possible interpretations (ironic and non-ironic interpretation, for instance). If the cues point to the ironic alternative, the ironic meaning will be adopted.

The article is structured as follows. The first section provides a theoretical background on Conceptual Blending. Section 2 describes the most influential research on compound figures, in particular, regarding ironic metaphor. Finally, the two alternatives are analysed together in Section 3.

2. Conceptual Blending

Conceptual Integration or *Conceptual Blending Theory* (Turner & Fauconnier, 1998) stems from two key traditions in cognitive linguistics: *Conceptual Metaphor Theory* and *Mental Spaces Theory* (Note 1). The *dynamic* aspect that characterises Blending Theory is derived from the latter. Unlike Conceptual Metaphor Theory, which focuses solely on metaphors, Blending Theory is a comprehensive theory of cognition developed to account for a range of phenomena, including if-clauses and counterfactuals.

The core idea of Blending Theory is that meaning construction involves the integration of different structures, allowing a new, *emergent* (Note 2) meaning to arise. This new emergent meaning is more than the linear sum of the parts that constitute it.

2.1 Metaphor

Turner and Fauconnier employ a commonly known example to elucidate a fascinating mechanism and illustrate that Conceptual Metaphor Theory fails to explicate its significance.

(1) That surgeon is a butcher

In Lakoff and Johnson’s framework, the meaning of an expression originates from understanding the target domain, i.e. the SURGEON (with their tools, patients, etc.), in terms of the source domain, such as a BUTCHER (operating with a cleaver on an animal’s carcass, etc.). The sentence conveys a negative assessment of the surgeon by comparing them to a butcher, thereby emphasising their incompetence. However, according to Turner and Fauconnier, this negative assessment does not originate from the source domain BUTCHER, as butchers are generally skilled professionals with knowledge of animal anatomy and expertise in using sharp instruments. Thus, Conceptual Metaphor Theory alone cannot account for this interpretation, as the negative evaluation appears to be absent from both input domains of the metaphor. In other words, “simple” conceptual projection processes cannot fully account for meaning construction. Blending Theory posits that meaning construction involves emergent structures, meaning that the resultant meaning is more than the sum of its parts. This emergent meaning is modelled by an *integration network*, a mechanism consisting of inputs with mappings that link elements in each input.

While Blending Theory shares similarities with Conceptual Metaphor Theory, notable differences exist. First, Turner and Fauconnier argue that the conceptual units in the integration networks are *mental spaces* (Note 3) rather than domains of knowledge (Note 4). Furthermore, integration networks in Blending Theory are not limited to two-space entities; instead, they connect two or more *input spaces* through a *generic space* that contains common information. Additionally, Blending Theory introduces a fourth space, known as the *blended space* or *blend*. This blend comprises a new, emergent structure containing information not present in either input (Fauconnier & Turner, 1998).

The integration network can be applied to example (1), involving the words SURGEON and BUTCHER. Separate input spaces exist for each term. The generic space contains information common to both inputs, such as the fact that both professionals are highly skilled, work with instruments, follow specific procedures, and have designated workspaces. The generic space offers a schematic representation that serves as a template for identifying shared structures between the input spaces. This facilitates the projection of these structures into the blend.

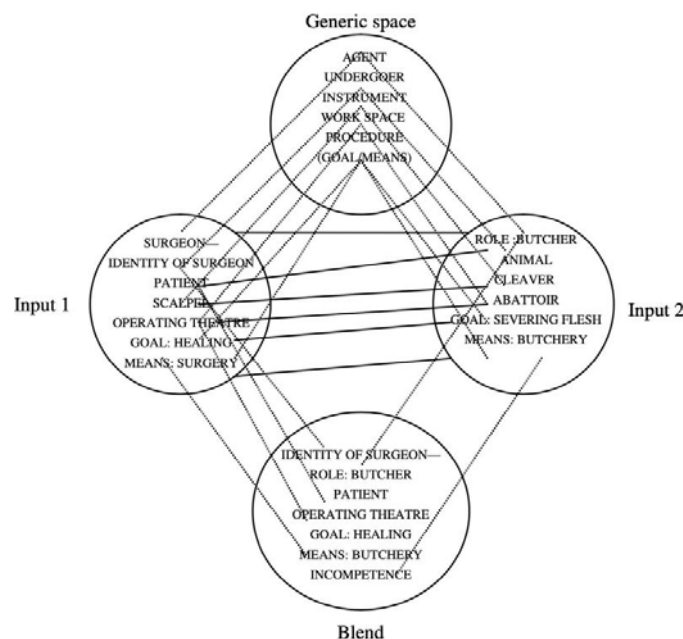


Figure 1. Mechanism of Conceptual Blending (Evans & Green, 2006)

In integration network diagrams (Figure 1), the generic space establishes counterpart connectors (represented with bold lines) between the input spaces. These connectors are created by identifying the conceptual operation responsible for recognising cross-space counterparts in the input spaces. Once matched, connectors are established between the corresponding elements, forming a conceptual projection (Note 5).

However, as mentioned, the blend contains an additional structure not present in the other spaces. A BUTCHER has expertise in dissecting a dead animal and making various cuts of meat. However, these skills are inappropriate for performing surgery and “repairing” (healing) human patients. A crucial element is the contrast between the goal (healing) of the surgeon and the activity (butchery) of the butcher, which exists only in the blend. In the blend, assessing a surgeon as a butcher highlights the inappropriateness of the butcher’s skills for “repairing” human beings. Consequently, the evaluation of the surgeon as incompetent emerges in the blend, representing the additional structure created by the blend itself.

Not all input structure is projected into the blend; only the information required for understanding the sentence (*matched information*) is selected. This selection is facilitated by an important property of input spaces: *selective projection*. In other words, irrelevant information is not projected into the blend. According to Turner and Fauconnier, selective projection is one reason for different interpretations of the same sentence by different language users, or even by users of the same language.

Blending Theory postulates that emergent structures are formed through three component processes: *composition*, *completion*, and *elaboration*. Composition involves combining elements from different inputs. For example, the SURGEON AS BUTCHER blend integrates elements from both the SURGEON input and the BUTCHER input. Completion involves the unconscious and effortless recruitment of background frames (Note 6), also known as schema induction. Elaboration is the online processing that generates unique structures for the blend, sometimes referred to as *running the blend*.

This overview does not fully capture the complexity of conceptual integration, as there are additional operations and governing principles that cannot be detailed here. Conceptual integration is not merely a theory of metaphor but a comprehensive theory of cognition. In their 2002 book, *The Way We Think*, Fauconnier and Turner argue that conceptual integration is a key mechanism facilitating not only language comprehension but also influencing human behaviour and cognition.

2.2 Irony

Several studies claim that Conceptual Blending can also explain how we process discourse irony. The *Space Structuring Model* (Coulson, 2000), for instance, suggests that Conceptual Blending is a variation of *Pretense Theory* (Note 7, Clark & Gerrig, 1984; Kumon-Nakamura et al., 1995). The Space Structuring Model includes representations of both the “real” world and a “pretend” one, as well as the possibility of intermediate layers (Note 8). Interestingly, the layers of Pretense Theory (Clark, 1996) are similar to mental spaces (Fauconnier, 1994), which are a key aspect of the Space Structuring Model.

Within this framework, when trying to understand a single event, people often need to create multiple mental models of the same object in different contexts. In a case of shared pretense, we might use one mental space to represent the way things really are (analogous to Clark’s Layer 1), and another to represent the way A and B pretend things are (analogous to Clark’s Layer 2). Consider the case where A tells B that he (B) is a “good friend” for sleeping with his (A’s) wife. In Figure 2, mappings or correspondences between counterparts are indicated by appearing on the same horizontal line. However, the last relation in the Pretense space has no counterpart in the Reality space because A does not actually tell B that he is a good friend.

<u>Reality</u>	<u>Pretense</u>
A	Ai
B	Bi
W	Wi
Wife-of(W,A)	Wife-of(Wi,Ai)
Affair-with(B,W)	Affair-with(Bi,Wi)
	Tells(Ai,Bi, “You’re a good friend.”)

Figure 2. Correspondences of the counterparts in the “good friend” example (Coulson, 2005, p. 6)

As seen with metaphor processing, Conceptual Blending theory posits a specific type of mental space called blended space, where speakers explicitly combine incompatible information to generate inferences that can be projected to other spaces.

Coulson (2005) applied her Space Structuring Model to sarcastic language. The use of sarcasm requires the listener to unpack the blend into two input spaces: an expected reaction space and a counterfactual trigger space. The expected reaction is the typical response to the situation, often involving becoming upset in the case of sarcasm. The counterfactual response reflects the way the speaker wishes the situation had been instead. The sarcastic utterance aligns with the counterfactual trigger in a situation where the listener anticipated a response appropriate to the expected reaction. For example, in Figure 3, a driver saying “I love people who signal” after being cut off in traffic involves a blend between the expected reaction and the speech act in the counterfactual trigger space.

<u>Expected Reaction</u>	<u>Blended Space</u>	<u>Counterfactual Trigger</u>
<i>Cuts-off(A,B)</i>	<i>Cuts-off(A',B')</i>	Switches-lanes(A'',B'')
<i>C: ~Signal(A,B)</i>	<i>C': ~Signal(A',B')</i>	C'': Signals(A'',B'')
Chastises(B,A,C)	Compliments(B',A',C)	Compliments(B'',A'',C'')

Figure 3. Blending in the “I love people who signal” example. Italics and bold print indicate the structure in the blended space that corresponds to the Expected Reaction space and the Counterfactual Trigger space, respectively (Coulson, 2005, p. 8).

Regarding Coulson’s example, Pálinkás (2014) argues that “chastisement” should be in the Blended space:

[...] if the Expected Reaction Space is seen as what we would normally call ‘reality’ (actual course of events), in my view, ‘chastisement’ cannot be considered an inherent part of that space. Rather, resentment at the misbehaving driver emerges from blending the conceptual content which is evoked by the current flow of events with the conceptual picture which is inspired by the speaker’s words (Pálinkás, 2014, pp. 621–622).

The representation in Figure 4 involves three input spaces. The Reality Space, illustrates a scenario where a driver changes lanes without signalling, depicting irresponsible driving behaviour. Conversely, the Expectation Space portrays the ideal scenario where drivers signal before changing lanes, reflecting responsible driving conduct. Lastly, the Compliment Space encompasses information about socially accepted norms and standards for praise.

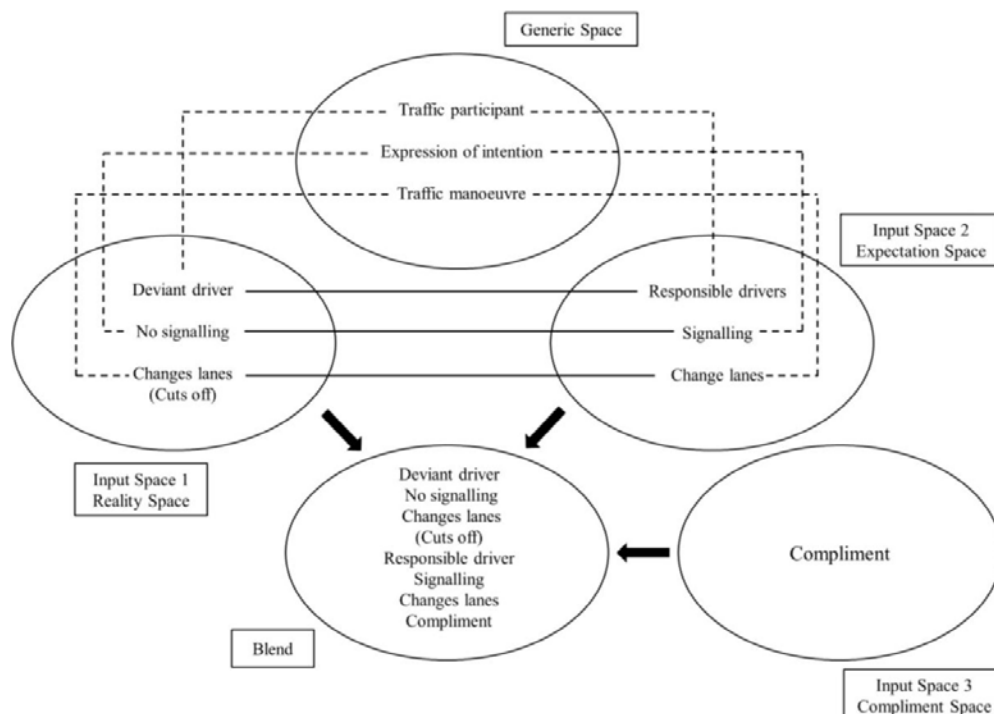


Figure 4. The conceptual integration network of the ironic “I love people who signal” (Pálinkás, 2014, p. 622).

Within the Generic Space, abstract connections exist between the inputs. For example, both drivers can be categorised as “traffic participants,” while signalling (or lack thereof) can be conceptualised as an “expression of intention.” Similarly, changing lanes can be understood as a “traffic maneuver.”

The Blend combines information from the three different sources, resulting in conflicting details. One source depicts a driver who cuts off others without signalling, while another portrays a responsible driver who adheres to traffic laws and signals before changing lanes. Consequently, the responsible driver is commended for their good behaviour.

In this scenario, there is a conflict where the driver who broke the rules is being praised as a responsible driver for a manoeuvre he/she did not actually signal. The speaker is pretending that the driver signalled when he/she actually did not. The listener recognises this conflict because he/she knows that the driver is actually not law-abiding (but deviant). Therefore, the compliment is not justified in the actual situation and instead implies that the speaker is irritated by the driver’s (mis)behaviour (Pálinkás, 2014, p. 622).

This model is particularly relevant to my argumentation, as it explains how an ironic interpretation can emerge from a contrast between different input spaces. However, it must be underlined that a conflict between expectations and reality is not the only trigger to an ironic interpretation. A closed list of factors is at odds with the complex dynamic nature of irony (Bertuccelli Papi & Aru, 2020).

3. Compound Figures of Speech

3.1 Definition and Examples

In the literature, complex expressions that serve more than one purpose are referred to as compound figures (or figurative compounds). A figurative compound is the result of the interaction of two or more figures, and its meaning cannot be reduced to one of the individual tropes that make it up, as in

(2) What a delicate lacework [uttered about a messy piece of handwriting] (Stern, 2000)

This utterance combines metaphor and irony. The metaphor describes the domain of writing through the domain of sewing. Given the context outlined in (2), we can understand that the speaker is mocking the addressee for their poor handwriting.

If we interpreted the utterance as expressing the meaning carried by only one of the two figures involved, we would not grasp its actual meaning. If we only recognised the metaphor correctly, we would interpret (2) as a compliment toward that person’s handwriting; an appreciation delivered through the expression of a positive judgement using a metaphor that enhances the precision, care and delicacy of that person’s handwriting. On the other hand, if the hearer correctly interpreted the utterance as ironic without recognising the metaphor in it, he/she would not understand (in the lack of any context) that we are not talking about sewing but calligraphy. Thus, the utterance would be interpreted as a mocking toward an ugly lace made by someone.

The figure resulting from the combination of metaphor and irony is called ironic metaphor (Popa Wyatt, 2017; Aru, 2023). In Aru (2023), it is called ironic metaphor because metaphor is the element to which the ironic attitude is applied. As a consequence, irony modifies the metaphorical meaning within the proposition. It is a head-modifier relationship, where metaphor constitutes the core meaning of the compound. Given that English is a head-final language, metaphor is placed as the last element.

We can have a complex figure of speech resulting from the interaction of irony and hyperbole, as in

(3) Mark [who has a negative opinion about Johnny]: «Johnny is an absolute genius, another Einstein» (Walton, 2017)

Compared to the intended meaning, the literal meaning of hyperbole is exaggerated. Mark says that Johnny is extremely brilliant, but we know from the context that Mark is ironic and does not think Johnny is clever at all. Again, if we did not grasp Mark’s ironic intention, we would interpret this utterance as an endorsement of Johnny’s intelligence. On the other hand, we would only fully understand Mark’s communicative intention if we grasped the blatant exaggeration. As a consequence, the ironic purpose of the utterance would be less evident.

Figurative compounds resulting from the interaction between metaphor and hyperbole present their own characteristic features: we can find an example of their combination in

(4) That child is the devil incarnate (Carston & Wearing, 2015)

Here, the metaphor is used to describe a particularly vivacious child, and the presence of the hyperbole increases the gap between how things are described and how they actually are.

As mentioned above, complex figures of speech are particularly frequent in everyday speech. We can find several

instances of them, such as:

(5) He's as charismatic as a traffic cone (Carston and Wearing, 2015) - simile and irony

Or

(6) Her anger radiated like a nuclear explosion (Carston and Wearing, 2015) - simile and hyperbole

3.2 Theoretical Background on Compound Figures

A thorough analysis of the literature on figurative compounds can be found in Aru (2023). The studies that have dealt with this phenomenon have focused on two fundamental points. The first concerns the logical priority within the compound expression, i.e., whether the interpretation of one of the two figures is conditioned by the other (Stern, 2000; Bezuidenhout, 2001; Popa Wyatt, 2017; Dynel, 2016; Barden, 2020). As regards metaphor and irony, all research works agree that metaphor has logical priority over irony.

The second main issue analysed in figurative compounds is psychological priority, that is, which figure is interpreted first and which cognitive mechanisms are involved during this process. Moreover, few experimental studies explored another aspect: whether interpreting a figurative compound is more cognitively demanding than a simple figure. For instance, Colston and Gibbs (2002) compared simple ironies and ironic metaphors. Their results showed that the figurative compound required longer processing time.

In Aru (2023), compound figures, in general, recorded longer response times. However, data analysis showed that recorded results were not necessarily determined by the presence of a compound or a simple figure. There were other parameters, such as complexity of the stimulus, number of words, stylistic register, etc., which influenced participants' interpretation.

Based on Bertuccelli Papi's (2018) conception of irony as a complex attitude, Aru (2023) considers irony as a phenomenon capable of subtly modulating propositional meaning. In this perspective, it can be seen as a component external to the proposition, which can take as object the whole proposition or units inside the proposition.

This is why an ironic attitude can be expressed on a syntagm (such as in cases of phrasal irony; see Partington, 2006); on a single word; on the whole proposition; on a figure of speech; or even on a compound figure such as hyperbolic metaphor (see Aru, 2023).

Therefore, the interpretation of metaphor has a logical priority over irony: before identifying the attitudes conveyed by the utterance, the hearer has to solve the metaphor by interpreting, for instance, in the case of example (2), the domain of WRITING in terms of the domain of SEWING. The ironic meaning can be fully grasped only after this comprehension stage is completed.

However, taking an actual communication situation, it would be difficult to establish which figure is interpreted first. A person might already expect an ironic utterance from the interlocutor, because several elements often act as metalinguistic clues which alert the reader that an utterance might be ironic (Attardo, 2000; Bertuccelli Papi & Aru, 2020; Aru, 2023). As a consequence, it may happen that the ironic interpretation would already be triggered by the situational context or other features, such as tone of voice, background knowledge, etc.

The theoretical assumption is, therefore, that individual tropes are not represented in the mind as rigid categories but rather as multidimensional spaces, acting as attractors, including flexible sets of factors, that may group together differently on different occasions to let one or the other interpretation emerge as the outcome of complex inferential processes under the action of a set of factors that act as attractors.

In this perspective, compounds are conceived of as complex systems emerging from the non-linear sum of elements of other complex subsystems (themselves emerging from the interaction of several intrinsic factors) influenced by each other and by the linguistic and extralinguistic context.

As regards the process of interpretation, we start from the assumption that we have a system (the compound) that follows a specific path in a three-dimensional space, where all the possible states of the system are represented. An area in this space that the system occupies or approaches more frequently than others is called an attractor. An attractor is a group of states toward which a system will naturally gravitate and continue cycling unless perturbed. For example, most psychological models suggest that attractors are formed by repeated experiences of a particular state, causing the state to become engraved in the person's psychological system (Gibbs & Colston, 2012, p. 122). The attractor has a pulling effect on the system, preventing it from descending into chaos.

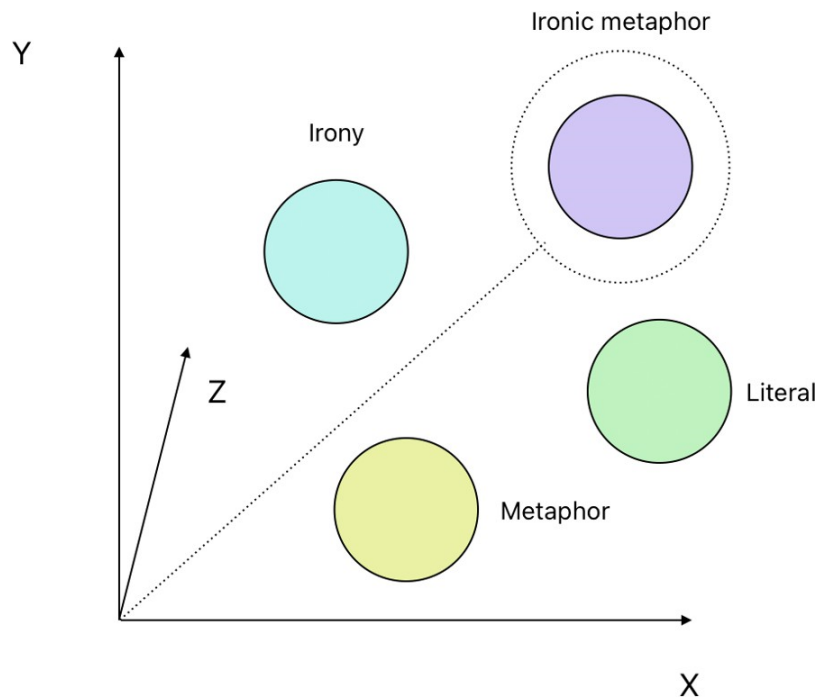


Figure 5. The process of interpretation of an ironic metaphor from a Complex Adaptive Systems' perspective

In the case of an ironic metaphor, for instance, we can have a literal interpretation of the expression if none of the attractors prevails; the recognition of metaphorical meaning alone, if the metaphor features prevail over the ironic ones; the recognition of ironic meaning alone, if the ironic attitudes prevail over the metaphor factors; a range of incorrect interpretations determined by partially grasping (or not grasping at all) the information conveyed in the utterance; finally, the correct interpretation of the expression as resulting from the interaction of the two figures in question.

4. An Alternative Perspective on Ironic Metaphor Interpretation

Section 1 showed that Conceptual Blending can account for the interpretation of metaphor and irony. In this section, the mechanisms of Conceptual Integration Networks will be applied to the combination of the two figures, which, in Section 2, have been explained from a Complex Systems perspective. In fact, Conceptual Blending shares several features with Complex Adaptive Systems Theory (or Dynamic Systems Theory or Chaos Theory). For instance, in both theories, “the aggregate activity of the entities undergoes processes of non-linear change, that is, changes that often give rise to emergent features that cannot be derived from the summations of the interactive behaviour of the entities nor predicted beforehand on the basis of assumable causes nor described through one level only of explanation” (Baicchi, 2015, p. 10). Therefore, it would be interesting to see if the process of interpretation of figurative compounds can be explained within the framework of Blending Theory.

It is commonly assumed that integration networks consist of four spaces: a generic space, two input spaces, and the blend. However, in practice, blends often serve as inputs for further blending and reblending. A pertinent example of this phenomenon is the GRIM REAPER blend, as discussed by Fauconnier and Turner (2002).

The concept of DEATH personified as the GRIM REAPER is a culturally ingrained blend. This blend originates from an integration network comprising three inputs, one of which is itself a blend of two prior inputs. Since medieval times, the Grim Reaper has been depicted as a hooded skeleton wielding a scythe. In analyzing the GRIM REAPER blend, it is crucial to consider its three distinct AGENTS.

The first agent is the REAPER, who uses a scythe to cut down plants. The second is the KILLER, who murders a victim. The third is DEATH, responsible for the demise of individuals. Notably, DEATH is a non-human entity. The concept of DEATH-AS-AGENT is a metaphorical blend of DEATH and AGENCY, resulting in the personification of death. The GRIM REAPER blend features DEATH as an agent causing death through KILLING, using a scythe to REAP life. The reaper is GRIM because his reaping results in death (Evans & Green, 2006, pp. 431–432). This intricate blend is illustrated below (see Figure 6).

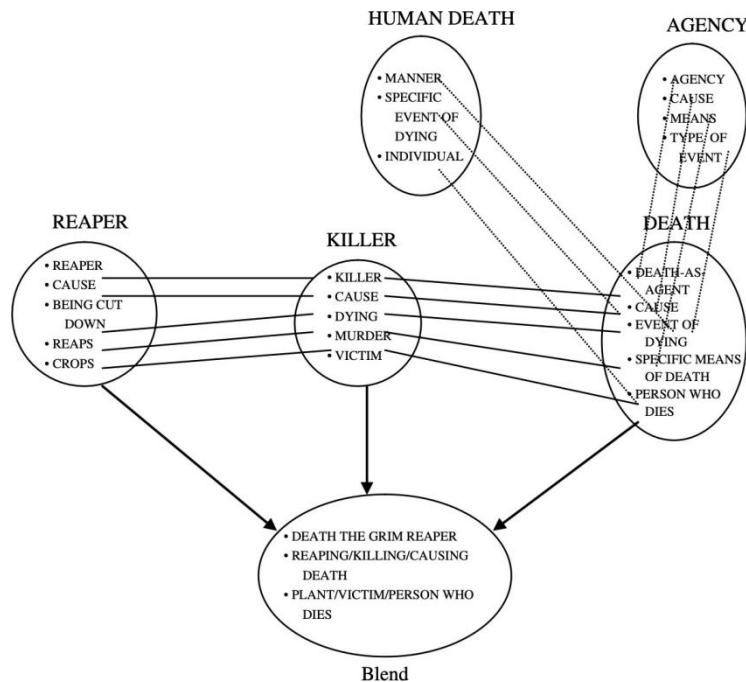


Figure 6. Conceptual Blending of Death the Grim Reaper (Evans & Green, 2006, p. 432).

Given that multiple blending is possible with metaphors, in this contribution, I hypothesise that it is also possible to blend the emerging structure of a metaphor with the ironic attitude conveyed in the utterance. This process of integration would yield the correct interpretation of the utterance.

Take example (2): What a delicate lacework [uttered about a messy piece of handwriting] (Stern, 2000). Following Metaphor-Priority Thesis (MPT; Popa Wyatt, 2017), metaphor is interpreted before irony. In this Conceptual Integration Network, several input spaces are involved in the process of interpretation.

Two inputs contain information regarding the domain of WRITING and the domain of SEWING. More schematic information about these two inputs is found in the Generic Space. It is possible to notice that the concept of “beauty” is not typically associated with writing or sewing. However, in the Blended Space, a compliment about someone’s handwriting may arise. In other words, relevant information from the two input spaces is selectively projected into the blend, thus letting the concept of beauty emerge.

Once the emergent structure of the metaphor is processed, it clashes with another input space: the speaker’s attitude, who, in this case, is being ironic. In fact, it is this contrast that lets the true meaning of the compound expression emerge. The metaphor’s emergent structure is incompatible with the actual attitude of the speaker, who does not appreciate the addressee’s handwriting. The interaction with the ironic input is therefore able to modify the emergent structure of the metaphor. In this case, the meaning of the metaphor is reversed. From a compliment concerning someone’s handwriting it becomes a criticism, expressed in the subtle and gentle way which is characteristic of irony. As a consequence, the intended meaning of “messy handwriting” emerges in a new Blended Space (see Figure 7).

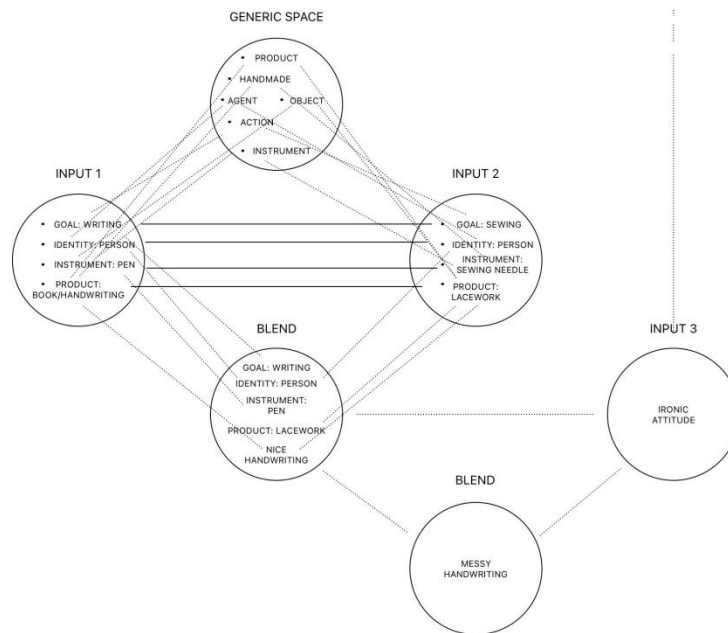


Figure 7. Conceptual Integration Network of “What a delicate lacework”

This two-stages model may be able to explain the longer processing times for ironic metaphors recorded in Colston and Gibbs (2002) and, in part, in Aru (2023). It is a blending of a blending, where the two figures are in a co-composition relationship, involving setting up elements from separate inputs (i.e., the metaphorical one and the ironic one). The inputs are, then, completed and elaborated separately. The necessary condition to notice the contrast with the actual opinion of the speaker is to process the metaphorical meaning first. Only after this comprehension stage is completed can the ironic attitude emerge.

In line with other research works on logical priority in figurative compounds, metaphor has a logical priority over irony: the metaphor has to be processed before the irony can take it as object and reverse its emergent structure.

4.1 Constraint-Satisfaction Models of Irony

Another possibility analysed in this contribution involves the so-called *constraint-satisfaction models* of irony (Gibbs, 2005; Ivanko & Pexman, 2003; Katz, 2005; Katz, Blasko, & Kamzerski, 2004; Martin, 2006; Pexman, 2008; Pexman, Ferretti, & Katz, 2000). In this framework, the emergent meaning is analysed on a probabilistic base.

According to Katz and Ferretti (2001), “constraints interact to provide probabilistic evidence in support of the various alternatives with competition ending when one alternative ‘wins’” (p. 215). The constraints are all the sources of information that the comprehender can draw on in deriving their interpretation (Pexman, 2003, p. 272). As reported in Pálincás (2014, pp. 81–82):

In constraint-satisfaction models of irony, an utterance activates multiple cues (or constraints), which are then considered in parallel to provide probabilistic support for different possible interpretations of that utterance. If the constraints point in the same direction, competition among various alternatives is resolved quite rapidly: an ironic meaning is adopted while other (literal, metaphoric, and so on) interpretive possibilities will be rejected.

Constraint satisfaction models explain how different sources of information integrate by proposing that alternative possibilities—such as syntactic, lexical, and conceptual options—compete for activation in parallel over time. These constraints interact to provide probabilistic evidence supporting various alternatives until one emerges as the “winner.” The duration of this competition is determined by the relative strengths of the alternatives. When the constraints strongly favour one alternative, the competition is resolved quickly. However, when support for the alternatives is more evenly balanced, the resolution is delayed.

Earlier models (Grice, 1989; Giora, 2003; Attardo, 2000) propose that irony can only be detected after the literal meaning has been processed and rejected. Several studies support this view, suggesting that understanding irony

is more time-consuming and thus more complex than understanding literal statements (Dews & Winner, 1999; Giora, 2003; Giora et al., 1998; Giora & Fein, 1999).

In contrast, one-stage theories like the Echoing Theory (Sperber & Wilson, 1995) argue that literal meaning does not have a privileged status in understanding figurative language. According to this view, interpretation is context-dependent and does not require a special mechanism for processing non-literal utterances. This position is backed by empirical studies indicating that irony comprehension does not take more time than the interpretation of literal utterances (Colston, 2002; Colston & O'Brien, 2000; Gibbs, 1986; Ivanko & Pexman, 2003).

Constraint-satisfaction models (e.g., McRae, Spivey-Knowlton, & Tanenhaus, 1998) align with the view that irony comprehension does not require more time than literal understanding. In these models, cues are processed rapidly and in parallel, and an ironic interpretation is considered as soon as sufficient evidence supports it. Parallel constraint satisfaction can be implemented in a connectionist neural network, where interconnected units represent possible solutions to the comprehension problem. During processing, the activations of units are adjusted by a relaxation mechanism until the network reaches a stable state. When this stable state of activation is achieved, comprehension occurs. The final state of the system represents the best solution to the comprehension problem based on the input and the knowledge embedded in the connections between units.

In irony comprehension, the message is processed alongside multiple contextual cues, and through constraint satisfaction, the system arrives at a coherent interpretation of the utterance (Pexman, 2008, p. 287).

As regards the lacework example, cues (such as context of utterance, the word “delicate”, an ironic tone of voice, etc.) are processed in parallel to support the eventual ironic interpretation. At the same time, the input spaces involved in the Conceptual Integration Network of the metaphor are processed simultaneously. This operation provides probabilistic support to the metaphorical or ironic alternatives. This competition resembles the one between the attractors described in section 2. Their contesting ends when one of the two alternatives “wins”. In this case, the correct interpretation is the ironic one, which is able to reverse the metaphorical meaning, thus letting the ironic criticism emerge in the blended space.

In this model, the presence of two tropes might not require additional processing time as they are computed along with the other alternatives during the sentence comprehension (see Figure 8). In other words, the interpretation of this compound figure could require the same processing time as a simple figure like metaphor. This may explain why, in Aru (2023), multiple regression analyses taking Simple/Compound parameter as independent variables were able to explain only a small part of the recorded response times variation. This may be due to the fact that the competition between the alternatives was more balanced and not necessarily to the presence of a compound rather than a simple figure of speech.

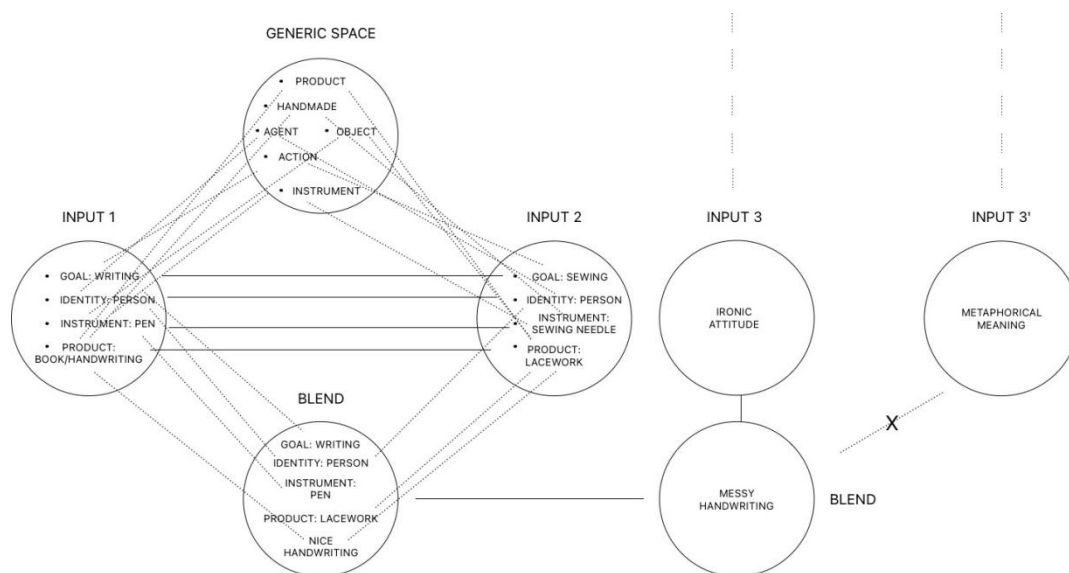


Figure 8. The parallel processing of the conceptual integration network and the ironic alternative in the lacework example

5. Conclusions

Constraint-satisfaction models of irony have the potential to explain the process of ironic metaphor comprehension, but they require further detailing and empirical support (Pexman, 2008).

As discussed in Section 1, Conceptual Blending is a theory about cognition rather than specifically about metaphor. It accounts for a wide range of linguistic phenomena, particularly those involving the emergence of linguistic meaning. Both Conceptual Blending and constraint-satisfaction models offer broadly generalizable tools that provide valuable perspectives on cognitive operations.

Experimental data, such as that analyzed in Aru (2023), can provide evidence supporting these models. When examining figurative compounds like ironic metaphors, both models can explain the longer processing times observed for specific stimuli. The findings from Aru's study offer valuable insights into the cognitive processes involved in understanding figurative language. Blending and constraint-satisfaction models can elucidate the mechanisms underlying the interpretation of complex linguistic expressions, enhancing our comprehension of figurative language processing.

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Notes

Note 1. Developed by Fauconnier (1985, 1994, 1997). The theory claims that language guides meaning construction directly in context and is subject to situation-specific information. Sentences can not be analysed in isolation from ongoing speech. Meaning construction relies on conceptual projection, similar to Conceptual Metaphor Theory.

Note 2. A property of a system is said to be emergent if it is a new outcome of some other properties of the system and their interaction, while it is different from them.

Note 3. The concept of mental spaces derives from Fauconnier's (1985, 1994, 1997) Mental Spaces Theory and accounts for local and dynamic aspects of meaning construction.

Note 4. The difference between the two is that domains of knowledge are relatively stable pre-existing knowledge structures, while mental spaces are temporary structures created during the online process of meaning construction (Evans & Green, 2006, p. 403).

Note 5. In Mental Space Theory's terms (Fauconnier, 1985, 1994, 1997).

Note 6. As exemplified in Fillmore's *Frame Semantics* (1982).

Note 7. Clark and Gerrig (1984) proposed that verbal irony is an instance of role playing that must be recognised as such for correct comprehension. They present their theory as a direct descendant of Grice's view of irony, because Grice had already observed that to be ironic is also to pretend. They acknowledged the influence of Fowler's idea of a double audience listening to the ironic statement: "Irony is a form of utterance that postulates a double audience, consisting of one party that hearing shall hear and shall not understand, and another party that, when more is meant than meets the ear, is aware both of that more and of the outsiders' incomprehension" (Fowler, 1965, pp. 305–306, quoted in Clark and Gerrig, 1984, pp. 121–122). They argue that a speaker using verbal irony is "pretending to be an injudicious person speaking to an uninitiated audience; the speaker intends the addressees of the irony to discover the pretense and thereby see his or her attitude toward the speaker, the audience, and the comment" (Clark & Gerrig, 1984, p. 121).

Note 8. In Pretense Theory, utterances involve two layers of interpretation, with participants A and B at layer 1, and their pretend counterparts Ai and Bi in layer 2.

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