

# **E Unis Pluribum: Using Mental Agility to Achieve Creative Duality in Word, Image and Sound**

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## **1. Agile Interpretation and Creative Duality**

The human brain does a remarkable job of automatically shielding us from the potential ambiguities of everyday situations. To appreciate just how good a job it does, try this simple experiment: open a dictionary on any page at random, and then scan around for a headword that is commonly used in everyday conversation. It might be “run”, or “set”, or “path” or even “home”. The only thing more surprising than the number of senses listed under these innocuous-seeming words is the realization that we are only ever conscious of one or two of them at a time in any given context.

To avoid being overwhelmed with choice, we often follow the guidance of context, and take the ambiguity-reducing categorizations of others at face value, especially if they appear to be offered in good faith. Thus, if a bookstore or a publisher tells us that a particular book is a work of autobiography, we tend to accept it as such. However, our words and categories are much more malleable than they appear, thanks for the most part to the automatic processes of disambiguation and experiential reasoning that shield us from their true richness and complexity. But these automatic processes are neither hard-wired nor absolute: we can, with some effort, de-automatize our processing of words and categories to exploit their full potential to convey meaning. Thus, if it suits our purposes, we can treat that work of autobiography as a work of fiction, and thereby imply that its author is not simply imaginative, but a liar.

Or consider another example from the introduction to this volume: George Bernard Shaw’s maxim that “the only golden rule is that there is no golden rule”. It seems clear that Shaw uses the word “golden” here to mean *of the highest value*, and “rule” to mean *that which guides or instructs*, so it would seemingly require an act of bad faith to interpret these words any differently. Yet, in an adversarial context, bad faith is licensed for creative purposes if the end result shows the apparent victim to be guilty of inconsistency, illogicality, or even hypocrisy (Veale, Feyaerts and Brône 2006). Thus, the bad faith required to move an autobiography from its

normal shelf to one for which it is officially unsuited is licensed by a belief in the hypocrisy of the author. In Shaw's case, one might use knowledge of Shaw's political leanings to motivate an agile interpretation of his innocuous-seeming maxim. G. K. Chesterton, for instance, retorted that "Mr. Bernard Shaw said that the only golden rule is that there is no golden rule. He prefers an iron rule; as in Russia." Chesterton here takes the word "rule" to mean *a strict governing constraint*, and "golden" to denote the *precious metal*, so that from "golden rule" (suggesting an ideal) he derives the corresponding "iron rule" (suggesting tyranny).

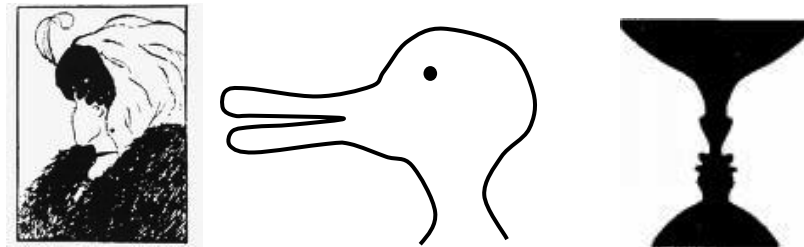
Note that Chesterton is not actually putting words (or senses) into Shaw's mouth. Rather, he simply uses Shaw's own words as a starting point for an agile exploration of the space of possible senses, interpretations and elaborations, with the end goal of exposing what he believes to be Shaw's political extremism. The result is a bisociation (in the sense of Koestler, 1964) between, on the one hand, a "golden rule" (a benign form of instruction) and, on the other, an "iron rule" (a malign form of government). What emerges from the bisociation is an apparent contradiction, which can be resolved by assuming that Shaw finds the totalitarian form of government to be a benign form of social order.

Conceptual agility of this kind requires nothing more than a willingness to look beyond the superficial categorizations and normative construals of our words and concepts. The agile thinker sees duality where others see unity, ambiguity where others see specificity, and freedom where others see constraint. As argued by De Mey (2003), the most creative individuals are masters of ambiguity, able to impose duality not just on their own outputs but on the outputs of others. This expanded vision comes at a cost, of course: the space of possibilities in which one must navigate becomes that much larger when we deliberately seek out additional choices and novel perspectives. In this chapter, we explore a variety of strategies for deriving duality from apparent unity, and of dealing with the potentially overwhelming rise in complexity that this can entail. Conceptual agility is not just the ability to create choices, but the ability to act upon them too.

## 2. Agile Imagery

Creative acts seem obvious after the fact only because they draw out what is hidden in plain sight. In images, the hidden becomes obvious through a restructuring of the visual field (or the visual gestalt), causing component

elements to shift between foreground and background or to coalesce into new logical sense-making groupings.



*Figure 1.* Classic examples of figure-ground reorganization or "gestalt-switching".

Figure-ground switches in images are a stereotypical example of this visual reorganization (e.g., the maid/crone, duck/rabbit and goblet/faces images of popular psychology, as in Figure 1). As we shall argue, figure-ground reversal can apply at different levels in an image *and* in a text, or in both together (as in comic strips).



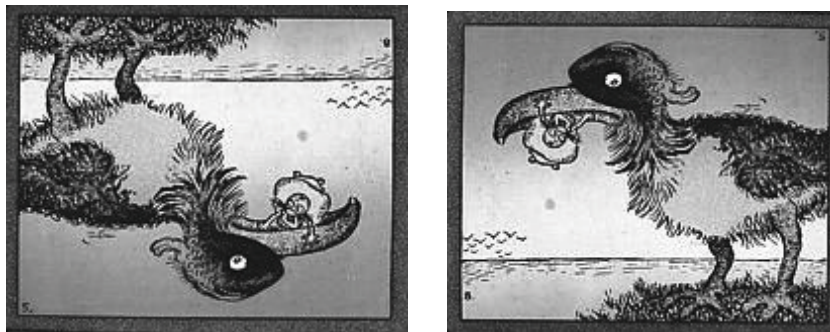
*Figure 2.* A humorous map that operates at two levels of visual description.

Consider the image of Figure 2, which exploits visual duality to create a "comic map of Europe". This particular image was constructed by the artist Paul Hadol circa 1870, and adheres to a pattern of representation that was

popular at the time (e.g., similar maps describe the militaristic state of European affairs just prior to World War I). At first glance we see a high-level map of Europe and its national boundaries. But on closer inspection, we see that each country is depicted by an image of the Person or Animal concept that most aptly captures its political station at the time (i.e., 1870). Thus, Ireland is depicted as a creature of Britain, straining on its leash, which reflects its subjugated status in the nineteenth century, while Germany is depicted as the fat Bismarck (complete with picklehaube helmet) crouching on the sleeping Austria, and Russia is depicted as an aged rag collector. The artist clearly faces a number of difficult constraints in his task, which adds to our appreciation of his creativity: each individual image must not just capture the cultural archetype *and* the current national mood of a given country, it must do so while preserving the geographic outline of each country. That Hadol satisfies all three of these constraints to achieve a visually pleasing whole marks him out as a master of duality.

### 2.1. Agile Visual Representations: Physical Transformation

The upside-downs of Gustave Verbeek are another, less commonly known case of how duality underpins the creative use of imagery. Verbeek's images (see Verbeek, 1963) are not obvious examples of figure-ground reversal, since one does not reorganize the visual field through a mental gestalt-switch, but by physically inverting the image, causing it to be interpreted with a very different meaning (see Figure 3).



*Figure 3.* A reversible panel by Gustave Verbeek; the panel image on the right is a 180° rotation of the image on the left.

Since vertical orientation is a basic dimension of gestalt perception, the act of physically inverting the image re-engages the construal mechanisms of vantage point and orientation (Langacker 1987: 487/8), allowing us to perceive the picture differently. Now, given the near-obsessive attention to detail that is needed to construct a dual image like that in Figure 3, it is natural to believe that such effects are very unlikely to arise by coincidence. Yet arise they do, as demonstrated in the logo of Figure 4(a).



Figure 4. (a) The logo for Britain's *Office of Government Commerce* (OGC); (b) the same logo, turned 90 degrees to the right.

In Figure 4(a) we see a rather innocuous-looking logo for the UK's *Office of Government Commerce* (or OGC). From the perspective of visual creativity, the logo has little to recommend it, and one wonders why, as Simpson (2008) reports, the UK government commissioned it at all, for the remarkable cost of £14,000. Nonetheless, soon after the logo was deployed, on coffee mugs, mouse mats and other OGC office paraphernalia, workers found a dual meaning hidden in its simplistic form. As shown in Figure 4(b), turning the logo 90 degrees to the right produces a surprisingly rude image in which the individual curves and strokes of the original letters take on all new meanings. This accidental image lacks the cleverness and charm of a Verbeek cartoon, yet has an immediacy and shock-value that is lacking even in the best of Verbeek's work.

Crucial to our present study is the insight that in all cases of

experienced creativity, the ‘ground of conceptualization’ (i.e., the utterance, the image, their component parts and their associated ideas) is partially brought onstage without necessarily being explicitly profiled (see Verhagen, 2005). This is very much what happens when we marvel at Verbeek’s ability to squeeze two different visual scenes into the same physical depiction, an ability which relies on the skillful reuse of visual components (such as trees, canoes, and smoke stacks) to compose different images when inverted (such as legs, beaks and hills). In this respect, Verbeek’s assemblage of reusable parts is reminiscent of the stock images that Hadol locally employs in Figure 2 to construct a global image of a map. But Verbeek chooses components that will be interpreted differently when inverted, and draws them in plain sight where their dual roles remain largely hidden by a human propensity to prefer images that are the right way up. Like many other examples of creative construal, Hadol’s map and Verbeek’s upside-downs illustrate the *inter-subjective* nature of meaning, constructed via a process of mutual coordination against what Clark (1996) defines as a *common ground* of shared knowledge, beliefs and attitudes.

## 2.2. Agile Visual Representations: Mental Transformation

Comic strips are a marriage of words and images, with well-established and well-studied norms for integrating these forms of communication. Of particular interest to us here are the various meta-level devices – such as speech balloons, thought balloons and other pictorial elements – that are used to achieve this intergation of words and images, and additionally augment the artistic depiction of a scene (Forceville 2005).

In the hands of an agile artist, these conventions can support various forms of creative duality. For the most part, this duality is low-key and does not draw attention to itself, since its main purpose is to enhance rather than hinder the narrative flow of the story. As shown in Figure 5, the form of a balloon may be subtly stretched in a different ways to convey additional information beyond its textual content (see Forceville, Veale and Feyaerts, 2010, as well as Forceville (this volume), for a more detailed analysis). Since balloons form part of the artwork, they can also be considered part of the physical world depicted by the artwork, so that they too might be acted upon directly by characters in this world. For instance, a character might “pop” an offensive speech balloon as though it were a real balloon. Thus, though they serve a supra-narrative function, these graphic elements lie in plain sight as potential elements of the world of the narrative itself.

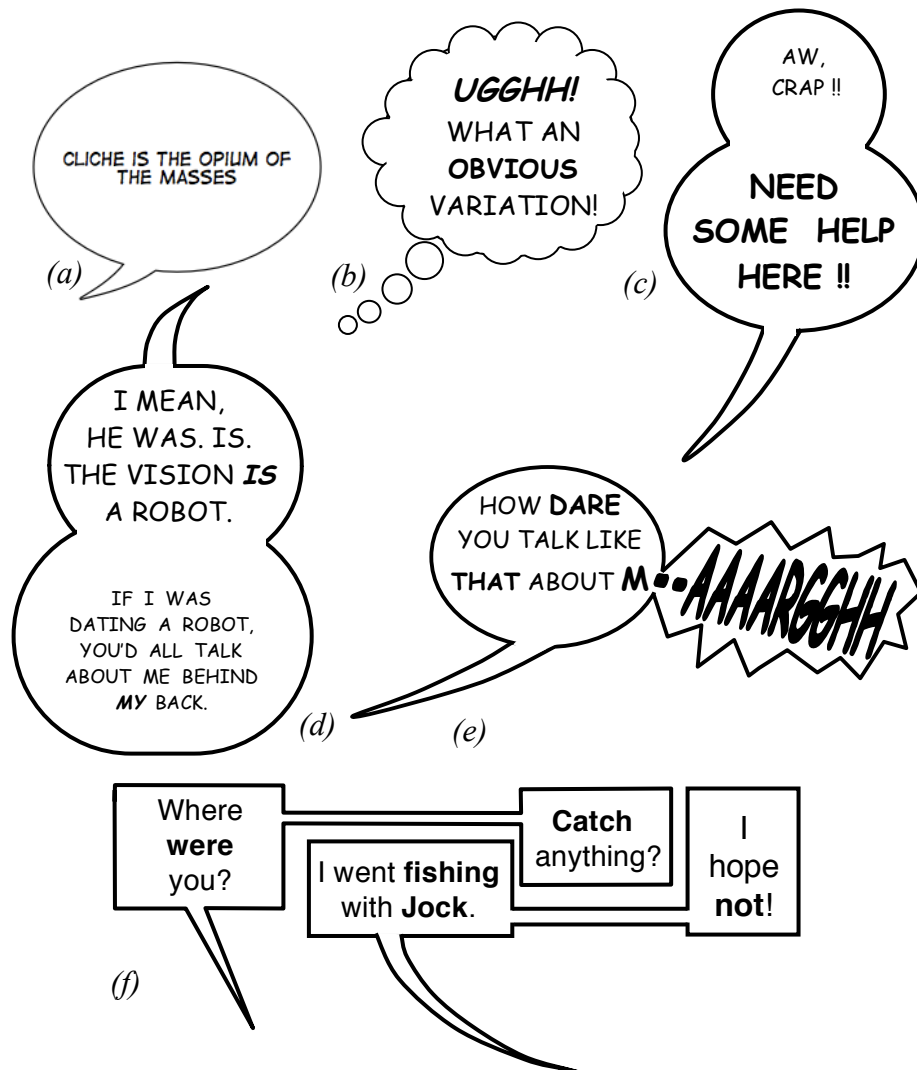


Figure 5. Speech balloons reconstructed from a variety of comic-strip sources. (a) and (b) are normative examples of “speech” and “thought” balloons respectively; (c) and (d) have unconventional shapes to accommodate the structure of their texts; (c), (d) and (e) use varying text sizes to convey changing volumes of speech; (e) shows a sudden transition between moods and balloon types; (f) shows the interlocking balloons of a dialogue, in which connections between balloons mirrors the turn-taking sequence of the speakers.

A key convention in comic strips concerns the visual connection of a speech or thought balloon – via an explicit “tail” (as shown in Figure 5(a) and (b)) – to the character who is currently speaking, as demonstrated in the left panel of Figure 6. Yet the convention can also be exploited to allow a character who is textually foregrounded for narrative reasons to be visually backgrounded for pictorial reasons, as in the right panel of Figure 6.



Figure 6. Despite the long-established convention of the genre, comic strip balloons do not always point to the speaker in a narrative.

As a consequence, the animal in the right panel of Figure 6 appears to be reproaching humanity for its poor treatment of nature. Notice how the speech balloon is actually emanating from the city structure on the bottom right of the panel, thereby establishing a metonymic relationship between the speaker and the speaker’s location. This kind of location-for-agent metonymy is commonplace in language, of course, but consider how a similar metonymy is used in Figure 7.



Figure 7. Speech balloons on the right come from different frames of reference.

In Figure 7 a speech balloon emanates from an airplane in the upper-right



background of the first panel, while another emanates from the foregrounded figure of the hero himself, *Mark Trail*. The effect is to combine two frames of reference (a fight scene on the ground and a scene of concern within the airplane) into a single frame of the comic strip. Common sense dictates that the airplane itself is not speaking, but a person on board the airplane, thereby resolving an ad-hoc metonymy between the vehicle and its occupants. Notice also that in Figure 6, this metonymy allows the script to be underspecified as to which character is actually speaking. Since both Mark Trail and the police officer can plausibly be the speaker in panel 2, we assume that the expressed sentiment is mutually felt. Likewise in Figure 7, we are allowed to understand the text associated with the airplane as a shared sentiment of all the airplane's occupants.

### 3. Agile Sounds

Music is a richly multidimensional phenomenon that affords its creators a great deal of scope for creative duality. Music is both representational and evocative, encompassing melody, mood, emotion, setting and even narrative. Likewise, music can exist on the page as an abstract recipe for sounds, and in the air as an actual performance of that recipe. So the creativity of a particular performance, say of a Bach partita, can be attributed both to the original composer and to the current performer, and to various other contributors in the chain, from conductors to arrangers to producers and sound engineers.

Different performers and performances can reveal different ways of interpreting an original composition. Some performances of a familiar musical creation can still take the audience by surprise, and seduce it into an appreciation of the performer's own creative vision. Consider the works of J. S. Bach, a feted creator of music whose compositions have been performed in public many thousands of times. Even in the 1950s, few musically-literate people would have been unfamiliar with the works of Bach, and few would have suspected that there was further creative potential to be gleaned from them. Nonetheless, Glenn Gould's performances are now widely regarded as bringing this additional layer of creativity to Bach's work. As in the case of Gould's Bach (a creative compression of performer and composer from different eras), it may take hundreds of years and one gifted performer to reveal brilliant aspects of a

composer's music that were never discovered before, hiding as they were within plain sight in the composer's notes.

Like a text, music can be interwoven with references and quotations to other creators and compositions, or to historical events (see Metzger, 2003). Tchaikovsky's *1812 Overture*, for instance, uses fragments of the French anthem *La Marseillaise* to represent Napoleon's army, and employs cannons as a percussion instrument to represent Russia's response to Napoleon. Even something as seemingly perfunctory as a film score for an action movie can be a rich collage of influences that operates at several different levels simultaneously. Consider the score for the 1987 movie *Die Hard*, something of a modern classic in the action movie genre. The score, composed by Michael Kamen for director John McTiernan, comprises an original main score and a subtle underscore of music motifs and other creative dualities. As in an opera, the underscore associates a different musical motif with each of the film's main characters, while other recurring musical quotations are used to introduce moments of action and suspense. Ironically, the upbeat (but very German) *Ode To Joy* is associated with the main villain, a German terrorist named Hans Gruber. Since the film is set at Christmas, a variety of Christmas songs are used throughout, but in a transformed fashion that allows them to act more as markers of foreboding and suspense than as holiday celebrations. As noted by Stilwell (1997), "The opening phrase of the seasonal favourite 'Winter wonderland' (by Felix Bernard and Dick Smith) appears in a minor-mode transformation as a brass fanfare that occurs during suspenseful situations; it is not associated with any particular character, but with the actions of the baddies".

*Winter Wonderland* thus creatively serves a dual purpose in *Die Hard*: as a subtle reminder that the film is set at Christmas, and as a signifier of celebration-turned-sour. The jolly melody of *Singin' in the Rain* (originally composed by Nacio Herb Brown) is similarly renovated by a succession of musical alterations (another minor mode transformation, with octave displacements), until it too becomes a symbol of aggression masquerading as joy. Moreover, the use of this melody in *Die Hard* can be seen as a musical reference to Stanley Kubrick's *A Clockwork Orange*, where the tune is used as an accompaniment to an ugly bout of "ultra-violence" (a violent rape, perpetrated by the main character, Alex).

Songs like *Singin' in the Rain* are an integration of words and music that also provide considerable scope for creative duality. When one listens to a modern pop song, one is aware of a harmonious coupling of lyrics and melody in which one supports the mood of the other. Thus, in AC/DC's

*Highway to hell*, the loud heavy metal music aptly matches the lyrics about a carefree and reckless way of life, and we perceive the song as a tightly-woven duality of strident words and thunderous music. In the same vein, highly danceable up-tempo songs tend to focus on different aspects of the idealized love relationship, and shift to a lower tempo to represent the lows of a troubled relationship. We may not always be aware of the interplay between these two levels until their relationship is exploited in a song whose lyrics and genre characteristics do not yield the expected match. Johnny Cash's *Folsom Prison Blues* uses a remarkably upbeat tempo to accompany the lament of man rotting behind bars, while The Boomtown Rats' *I Don't Like Mondays* is a catchy up-tempo song about a girl who goes on a real-life killing spree in San Diego. The creative reasons for pitting melody against lyrics go beyond the simple desire to surprise: in the first case, Cash actually wishes to bring cheer to the lamentable inmates of Folsom prison and similar institutions; in the second, the Rats try to capture the remorseless indifference of the shooter, Brenda Ann Spencer, for whom the killings were an attempt to liven up an otherwise boring Monday.

#### 4. Agile Words

As typically conceived, a narrative joke is compatible with two different scripts or frames: one such frame or script is dominant, but yields an incongruity if used to interpret the entire joke; the other is less favored, but is capable of capturing the logic of the whole. When the incongruity is encountered in the final stage of joke, called the punch line, the listener must switch from the favored but unsuitable script to the unfavored but ultimately successful alternative (see Attardo et al., 2002). Like a Verbeek cartoon strip, the text of a narrative joke yields two different stories at once. But unlike a Verbeek cartoon, one does not need to physically modify the text; rather, a perceived incongruity in the punch line prompts us to reinterpret what has gone before to achieve a very different conclusion. Nonetheless, creative duality is central to both kinds of endeavor, and the end effect is much the same. In each case, the elements of an alternative story line are hiding in plain sight, waiting for the opportunity to be re-framed by a viewer/reader willing to make the necessary upside-down or back-to-fore reversal.

This duality is also evident in other non-narrative forms of verbal humor. For instance, some very effective forms of humorous rebukes rely

on an insightful interlocutor pointing out what should be plainly obvious to a dispassionate observer. Consider this reported exchange between the boxer Muhammad Ali and a female flight attendant. Though physically mismatched, she easily proves his verbal equal:

- Flight attendant:** Buckle your seat belt for take-off, Mr. Ali.  
**Muhammad Ali:** Superman don't need no seat belt!  
**Flight attendant:** Superman don't need no airplane neither.

This exchange is an example of a humor-producing strategy that we have previously dubbed “trumping” (e.g., see Veale, Feyaerts and Brône 2006). Note how the stewardess does not actually disagree with Ali, but takes his assertion at face value and appears to accept it as true (as signaled by the dialectical use of “neither”). Rather than disagree with Ali’s comparison, she simply points out a very obvious element of the Superman mythos that becomes even more salient in the context of air-travel (Superman can fly through the air, and is often mistaken for an airplane himself). This obvious fact, though plainly relevant, remains hidden from Ali’s cognitive gaze because of his focus on that aspect of the Superman concept that yields the most flattering comparison (namely, his strength and resilience in the face of danger). Such rebukes effectively undermine or trump a speaker by showing that they are unable to recognize the most important and obvious elements of an argument, and as such, are unable to comment persuasively upon them. It is furthermore notable that the ironic effect is enhanced by a common process of opportunistic *alignment* (Pickering & Garrod 2006), in which a second speaker may parallel the utterance of a first speaker on any level of linguistic organization, fully or partially, explicitly or implicitly, to achieve a humorous resonance effect (see also Zima *et al.*, 2008). In the Ali example, the flight attendant chooses to echo her interlocutor’s Black-English dialect (which appears ungrammatical to a speaker of received English), enhancing the effect by using “neither” instead of “either”.

Duality arises because of the inherent ambiguity of the words and sentences of natural language. At a low level, words provide the raw material for puns and other simple word-games. We tend to be dismissive of this kind of child’s play, unless it is the product of a well-known artist. Gould (2000), for instance, invests considerable analysis in a throwaway word-blend by the artist Marcel Duchamp. This blend truly was a disposable effort: Duchamp had inscribed the word equation *A Guest + A Host = A Ghost* on candy wrappers at a party in 1953. Yet Gould

appreciates at least three different levels of creativity duality in this simple word-play, and even considers this pun and others like it as a “a vital and central place in the totality of his [Duchamp’s] life’s work”.

Simple wordplay becomes less childish when it is used to achieve real communicative goals, such as the reinforcement of social status. Consider the following exchange between two British commuters at a train station, resplendent in English bowler-hats and pin-stripe suits:

**Commuter #1:** My great grandfather died at Waterloo, you know.

**Commuter #2:** How tragic. Which platform?

Here the duality resides in the polysemy of “Waterloo”, which can denote both a historical battlefield (and a noble place for a British citizen to die) and a mundane railway-station (which, in turn, suggests an altogether more pathetic demise). But the creativity resides not in the simple exploitation of ambiguous words, but in the recognition that different readings can yield very different interpretations, one of which undermines and trumps the interpretation intended by the speaker. This again serves as a clear example of the status of meaning as a socially driven, inter-subjective process of meaning coordination. Leaving aside the possibility that in this example the second speaker may have genuinely misunderstood the previous speaker, it seems clear that this second speaker picks out a pretense-interpretation in order to achieve the communicative goal of establishing mental, intellectual, verbal or social superiority over his companion. Even when accompanied by a cartoon image that clearly situates the exchange in a train station, the train-station reading of “Waterloo” remains hidden in plain sight: though visually primed, it is overlooked in our pragmatic desire to understand the first speaker’s statement as a mark of superior social status.

## 5. CRIME: An Agile Framework for Producers *and* Consumers

To study creativity, as it is evident in both words and images (and combinations of both), we require a theoretical framework that will support path-finding and compression operations in a variety of modalities. At first glance, the Conceptual Integration or Blending framework of Gilles Fauconnier and Mark Turner (1998) seems ideal for this purpose: it is a framework that is general enough to discuss any composite or compressed conceptual structure, no matter the medium of its construction. Indeed,

blends can be understood in terms of the Source-Path-Goal schema (see Johnson, 1987; Forceville, 2006) by recognizing that a blend shortens the conceptual path between a source and goal concept so that these concepts become fused, perhaps to the extent that they are seen as different perspectives onto the same idea (see Veale and O'Donoghue, 2000). But although the blending framework has been used to analyze countless examples of human creativity, it would be a mistake to think of the framework as a model of creative thinking. We now explain why this is so, and discuss how we plan to address these short-comings with a new perspective on creative blending.

Conceptual Integration theory (Fauconnier and Turner, 1998;2002) views creative products as the integration or blending of different – perhaps even incongruous – input spaces, and describes a variety of optimality constraints that guide the selective projection of input elements into the resulting blend. Yet creativity does not reside in this projection and integration, but in the choices made in the population of the input spaces.

Consider a culinary analogy: a creative gastronomic combination such as duck with orange must be realized as an actual dish by applying the physical constraints of cooking (e.g., the duck must be heated, the oranges must be converted into a form, such as a sauce, whereby it can be applied to the duck, etc.). But the creativity of the combination is not explained by the mechanism of combination, but resides in the initial choice of ingredients, and the manner of their use, that occurs *prior* to combination. To invent a creative new duck dish then, an innovative chef has just one input space to work with (containing facts relevant to duck) and just a glimmer of what the final blend will look like (the blend must preserve the flavors of the ingredients and present a desired effect, conform to a specific cuisine type or achieve a desired goal). From these fragments of knowledge and intention, the chef must infer the contents of the second input space that will, when blended with those of the first, achieve the desired ends.

The mechanism by which the contents of a second input space are inferred to complement the contents of the first is the mechanism that will make blending theory a true theory of creativity. This will offer a producer-centric rather than a consumer-centric view of creativity that will be much more than a vocabulary for merely describing the products of creativity. We propose a blending-based framework (called CRIME, for Creative Integration MEchanism) as a means of exploring and hypothesizing about the properties of this mechanism for creatively populating input spaces. In essence, we will explore how conventional pathways between concepts can

be used to reach from one input space that is given to find another that is initially unstated. To produce a creative blend, these pathways should be compressible to yield a conceptual structure that exhibits a novel and useful duality of meaning.

### 5.1. Agile Words in CRIME: An Example

Suppose the first input space contains a description of the concept Pope, and the partial blend space contains the single element Crime: the goal then is to populate the second input space with those elements that, when selectively integrated with the elements of the first, yield a blended concept in the criminal domain (in other words, what creative interpretation can be placed on the concept of Pope to give it a criminal interpretation?). It follows that this second input space should be populated with a conceptual description that is clearly in this criminal domain. Since integration often relies on the process of recruitment, in which intermediate concepts are employed to bridge both input spaces, creative generation might anticipate which concepts might be recruited and, in doing so, anticipate what might be placed in the second input space. In the case of verbal creativity, recruitment might exploit the pre-existing duality of polysemous words, or the ability to deconstruct conventional idioms to obtain alternative literal meanings. For instance, the pope is also known as the “holy father”, since the word “father” can denote both a parent and a priest. Other kinds of non-prototypical fathers include “godfathers”, which can be deconstructed to match “holy father” (i.e., God→holy), but “godfather” has another less-than-holy meaning in the crime domain, that of the leader of a crime family.

Through the duality of polysemy, then, we can find paths from the given input space of Pope to the space of Criminal leaders, to suggest a blend in which the Pope is both literally and metaphorically a “godfather” (i.e., both the holy leader of a religious family and the unholy leader of a criminal organization). We note that criminal organizations are often called “crime families”, and this provides yet another pathway through which the space of papal affairs can be linked to a space of Crime. Once selected for integration, Pope and Godfather yield a provocative blend that can be richly elaborated. Popes and Godfathers are typically viewed as archetypes of Italian Catholicism; criminal godfathers exercise absolute authority over their families, and live in palatial grandeur while imposing strong ethical(-

like) rules on their followers; and both are associated with the same rites of respect, such as the kissing of rings that symbolize power.

## 5.2. Agile Images in CRIME: An Example

Consider the creative dilemma facing an advertising copywriter who is asked to design an advert that provokes an undesirable and “uncool” view of smoking. In the given input space we thus find the concepts Smoking and Cigarette, and in the partial blend space we find one or more of the concepts Unhealthy, Uncool and Undesirable. From a producer’s perspective this scenario is remarkably under-specified and thus poses a significant framing problem: what second input space will give rise to a blend that so effectively associates the concepts of Smoking and Uncool that a consumer will unfailingly accept the association as integral?

To begin with, the producer can explore a variety of pathways from the source concepts of Smoking and Cigarettes that lead to concepts with a strongly negative connotation such as Emphysema, Cancer, Heart-Disease and Impotence. Any of these end-points (or goals w.r.t. a Source-Path-Goal structuring; see Johnson, 1987) will evoke a deeply unpleasant association, but the producer must now find a way of compressing the path so that Smoking is integrally identified with this association. Of course, the producer can stop here, and simply produce a slogan that proclaims “Smoking causes X” (as is boldly printed on most cigarette packets), but few consumers would find such a message either compelling or creative. It lacks persuasive force because it has palpably failed as a message in the past; and it lacks creative force because, in its unambiguous directness, it lacks both originality and expressive duality. But let us consider here the specific pathway Smoking→Impotence and how it might be re-framed to achieve creative duality.

As shown in Figure 8, the producer can now go one step further, and frame this image within a larger visual context that is conventionally associated with a positive mirror of the desired message (i.e., that Smoking is Desirable, Healthy or Cool). For instance, the Marlboro company has traditionally employed the iconic image of a smoking cowboy to imply that smoking is a wholesome activity pursued by confident, authentic people that possess pioneering spirit, independence and grit (in other words, the kind of people who do not take kindly to being lectured about what they cannot or should not do). This image can be undercut for humorous effect if the limp cigarette is placed in the mouth of the “Marlboro man” or some



stock cowboy image that evokes this iconic figure. By extending the pathway to include an advertising icon, the scale of the compression is accentuated when the unified image is presented: one is now encouraged to believe that the Marlboro man suffers from ED, and that his plight is caused by smoking.



*Figure 8.* A subversive play on a popular advertising icon, creating a compressed pathway from Smoking to Impotence.

### 5.3. Agile Words *and* Images in CRIME: An Example

Consider the fragment of a Dutch advertisement in Figure 8, in which a creative producer draws our attention to the duality inherent in the target product, the Volkswagen Polo, as both a cool car and a clean economical car. Although this is a highly specific source concept with a clearly defined conceptual goal, the required message holds interchangeably for many other modern cars and may not have any special resonance for Volkswagen. The question, then, is how to convince potential customers to give special attention to this car. One way of doing so is to extend the conceptual path beyond the mere association with economical and ecological issues, to include also the protection of the environment and, by consequence, the protection of one's own health.

In considering these external effects, the producer pushes the conceptual pathway at least two steps beyond its initial goal. A car that produces less

polluting gases actively contributes to a cleaner environment, and hence, to a healthier lifestyle for those who live in it. In order to compress these conceptual goals into a single integrated scene, the producer has to come up with an extended visual-verbal frame that allows for a creative, layered interpretation. The goal of the advert then is two-fold: to highlight the rugged appeal of the new Polo, by using the cowboy icon in a wild-west setting, and to simultaneously highlight the ecological friendliness of the car, by communicating its small carbon footprint. Ruggedness and Eco-friendliness are pragmatically opposed notions, since tough and powerful vehicles like trucks, SUVs and hummers are widely perceived as fume-belching gas-guzzlers. Nonetheless, these two opposing viewpoints are successfully compressed by showing the cowboy leaning against the car in a relaxed pose. His posture suggests pride of ownership, and signifies the cowboy's acceptance of the car on his own terms. Like the Marlboro Man, the cowboy is a stock symbol of reliability and grit, so the close association projects these attributes onto the Polo as well.

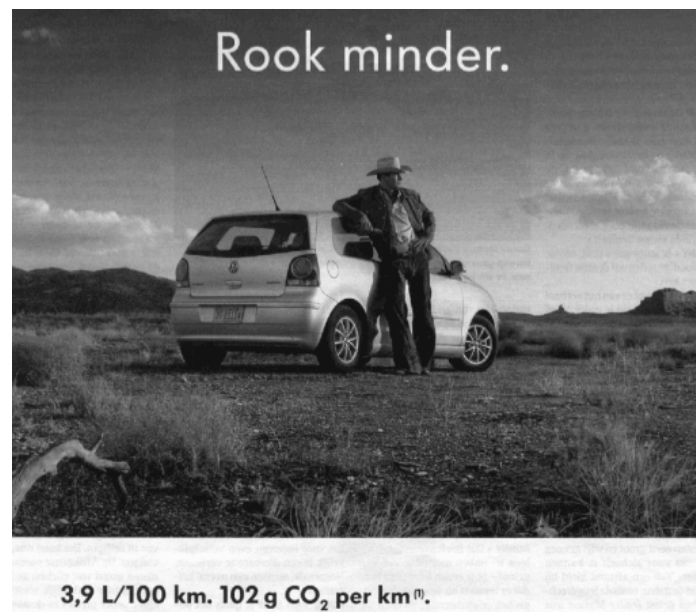


Figure 9. A *Smoke-Less* advert for the eco-friendly yet rugged Volkswagen Polo.

Now, the stock cowboy is stereotypically associated with horses, but in Figure 9 we see no horse at all. Since cowboys use horses as a mode of

transport, we are thus encouraged to see the Volkswagen Polo as a replacement for the cowboy's horse. This replacement, and the analogy it implies (i.e., car = horse), resonates on a number of levels. For one, cars have been historically viewed as replacements for horses, which is why we describe their performance in terms of *horse-power*. For another, the car in question is named after the equestrian sport of Polo, which lexically primes its relation to the concept of Horse. Furthermore, cars are often conceptualized as, and named after, animals, from the Pinto, Bronco, Charger and Mustang (all horses) to the Puma, Jaguar and Impala. For a variety of lexico-conceptual reasons then, the cowboy image works well in an advert for cars. Moreover, from the generation perspective of the producer, we can begin to see the lexico-conceptual pathways that guide the construction of the advert: starting from a single input space that contains the Volkswagen Polo, and a partial blend space that just contains the concepts Ruggedness and Eco-friendliness, there is a variety of ways in which one can reach the concept Cowboy and populate the second input space.

Finally, we should not overlook the vital contribution of caption in this advert, "Rook minder" (or "Smoke less"). Smoke is a concept that occupies the common ground between Cowboy and Car, but is one that has differing significance and affective polarity in each. The image of the Marlboro Man cements the view that, for cowboys, smoking is a pleasurable, authentic and sexy activity, while for cars, smoke is an unwanted by-product that not only causes pollution but which is symptomatic of a faulty engine. A car can smoke then to the extent that it exhales smoke, much like a human smoker. The caption "smoke-less" thus presents a dual signification: the car in question smokes less, and the cowboy, if viewed as a new version of the Marlboro Man, smokes less also. Nonetheless, the new Marlboro Man is shown to be as rugged and cool as ever, to suggest that his reduced level of smoking has not dented his appeal in the least. Furthermore, one may conclude that he smokes less because his car smokes less; in other words, he has reduced his carbon footprint. Likewise, his acceptance of the Polo suggests the new Volkswagen has also not lost its traditional appeal in the move to a smoke-less version. This suggestion is strengthened by the apparent analogy between the cowboy and the car: both are rugged, authentic and appealing; both smoke, but both smoke less than before.

#### 5.4. Toward A Model of the Producer's View of Creativity

Of course, in presenting the above re-creations of successful instances of creativity, we have recapitulated one of the most serious flaws in the practice of blending theory and conflated the role of producer and consumer. As Rohrer (2005) puts it:

“blending theorists have typically not differentiated the perspective of the reader from that of the author in their analyses. In giving their analyses, blending theorists often construe their interpretation of the blend to be identical to both other readers’ and the author’s perspective. (page 1687)”

This conflation has allowed us, unrealistically, to work backwards from an established creative product to produce an interesting *just-so* story about how this product was constructed. But what makes these products original is the very fact that so many other pathways could well have been followed instead (see Newell et al., 1963), to produce products of lesser value, or of no value at all. After all, these products are designed to be immediately understandable after the fact, and so it shows little insight for blending theory to provide an after the fact explanation. As such, the real question that blending theory fails to address adequately is: why and how did the producer decide to follow a path that has such obvious *a posteriori* merit, and not one of the many useless dead-ends that one is far more likely to encounter?

We obtained some insights into this problem in the Volkswagen example above. For instance, there are lexical resonances that at a suitably attuned producer can use to guide his/her search: the performance of a car is measured in “horse”-power, which suggests an analogy between cars and horses; “Polo” evokes a game played with horses; well-known car-brands are named after horses; both cars and people can meaningfully be described as rugged; and so on. If we accept that duality is key to creativity, we should expect a creative-minded search to prioritize those intermediate concepts that support multiple construals, so that the pathway as a whole can give rise to multiple construals. With regard to the Smoking example in Figure 8, we note that the concept of Impotence already exhibits an inherent duality, since Impotence is both defined in terms of Sex and is defined in opposition to Sex. This allows the concept to be exploited as a pivot on which a larger duality can be constructed. The advert of Figure 8 thus works on a creative level because it successfully compresses two contrary images to extend this underlying duality: the Marlboro man, an icon of the smoking lobby, is made impotent (and thus unsexy) by the very

product that makes him appear sexy. The advert of Figure 9 likewise extends the duality inherent in our conceptualization of cars: though man-made objects, we still find it convenient to reason about them as natural sources of “horse power”.

It follows that a creative producer, in seeking out intermediate concepts that already exhibit some degree of internal duality or tension, should be more likely to identify pathways that support a high-level duality of meaning. This might include concepts like *Godfather* and *Waterloo* that have established metaphorical or metonymic extensions in a strikingly different domain (e.g., Religion versus Crime for *Godfather*, or Mundane versus Epic for *Waterloo*), or concepts like *Beetle*, *Horse* and *Volkswagen* that stereotypically exhibit properties that are pragmatically opposed, such as *small but tough*, *powerful but elegant*, or *compact yet roomy*. In the *Smoking* example, we find a high-level duality that pits surface appearance against reality, which in turn is built upon a duality that pits sexual appeal against a lack of sexual ability, which in turn is built upon a low-level duality inherent in the concept of *Impotence* itself.

Generally speaking, one can find duality at different levels of the same creative product, with novel and striking dualities at higher levels reflecting and extending more established dualities at lower levels of meaning. These reflections can reinforce each other even when they are not, strictly speaking, mutually consistent. Thus, in the advert of Figure 9, the duality of *Car = Horse* and *Cowboy = Car* are both in play at the same time. If we can identify the most common low-level dualities of form and meaning, we can begin to understand how these are exploited by creative individuals to create larger, more novel and more striking dualities in their work.

## 6. Conclusions

We have argued that duality of purpose or meaning is a necessary element of creativity, and have demonstrated duality in a variety of examples in a number of modalities. But duality itself is not a sufficient criterion for creativity, since a plurality of functions or meanings can always be achieved through uninspired conjunction. For instance, a poem or story can be made to express twice as many meanings by being made twice as long, but the simple addition of content does not imply either craft or creativity. Likewise, software such as Microsoft Word is not necessarily improved by the addition of new functionality, especially if this functionality unduly

increases the complexity or resource-footprint of the software, or makes the software harder to use. In contrast, a Swiss army knife is an exemplar of creative design not just because it incorporates a plurality of instruments, but because it does so elegantly while minimizing size and maximizing portability. If one were to conjoin a drawer full of kitchen implements with some sticky tape, one would achieve a device with just as many functions but with none of the elegance, concision or utility. Creative duality is *concise* duality, in which a plurality of meanings or functions is achieved not by simple addition, but by fusion and compression.

If we accept duality as an important aspect of creativity, it follows that a creative producer will explore a search space with a view to identifying and exploiting duality, and thus, with a view to recognizing opportunities for compressing multiple meanings into a single form. With this duality-seeking perspective in mind, we can begin to consider the specific search strategies that a producer might use to achieve a creative end. Our specific research question then becomes: how might a duality-seeking search of a conceptual space differ from a more mundane search as exemplified by the GOFAI tradition? Moreover, how might a duality-seeking search differ in substantive terms from the kind of *just-so* story we see so often in blending-based analyses? We have begun to answer this question here, by arguing that duality operates at multiple levels of a creative product, with lower-level (and more established) oppositions guiding the construction of higher-level (and more striking) dualities. It remains for us to show, in precise terms, how this construction is actually achieved without appealing to just-so stories of our own.

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