Metaphor construction in online motivational posters

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Abstract

Motivational posters in public spaces are known to be effective in influencing attitudes, but their electronic counterparts have been considered as dubious 'pop psychology'. The structure and content of these posters, which may relate to their effectiveness, have however not been adequately analyzed from discourse analytic perspectives. This paper examines aspects of metaphor construction in a sample of 900 online motivational posters. Identified metaphor units were coded with variables related to their VEHICLE, TOPIC, and MODE, and relationships between these variables explored. The results i) suggest metaphor as a common feature of motivational posters, ii) reveal prominent topics, vehicles, and topic-vehicle pairings, iii) show that while metaphor units tend to be multi-modally presented, topics tend to be only verbally presented, and iv) uncover tendencies for particular topics and vehicles to be presented either verbally, visually, or multi-modally. The present approach focuses on interpreting patterns of content and form underlying a larger quantity of data, complementing multimodal metaphor studies which richly explicate a limited set of examples. Implications and future research directions are offered.

Keywords: metaphor, multimodality, motivational posters

1. Introduction

Motivational posters intended to influence behaviors and attitudes are commonplace in public spaces and, more recently, on social media. It has been shown that strategically placed physical posters encourage relevant positive decisions like stair walking and buying healthier beverages (Bergen & Yeh, 2006; Kerr, Eves, & Carroll, 2001). However, their popular electronic counterparts are the subject of much skepticism and parody. Their noticeable presence on websites and social networking platforms has been described as a case of well-intentioned but ineffective 'pop psychology' (Justman, 2005), possibly doing more harm than good to viewers. While questions about their effectiveness are psychological in nature, the potential relevance of communicative aspects such as poster size and message content has also attracted some research interest (Kerr et al., 2001). More systematic analyses of the structure and content of motivational posters from discourse analytic perspectives have nevertheless not been forthcoming.

Figure 1 is an example of a motivational poster. It shows a girl letting go of a heart-shaped balloon, metaphorically representing the overcoming of 'things that makes [sic] you sad'. Metaphor, the act of describing and potentially thinking of something in terms of something else (Semino, 2008), is in fact a salient but underexplored feature of motivational posters. Since they attempt to communicate positive ideas about abstract topics such as attitudes and emotions in simple yet attention-grabbing ways, we can expect designers to use metaphors and other rhetorical devices to render such abstractions more concrete, relatable, and/or appealing. Many of these metaphors are also likely to be visual or multimodal (Forceville, 2009) like in Figure 1 where the metaphor of 'letting go' is expressed with both words and pictures. However, our understanding of how (multimodal) metaphors are constructed and communicated in motivational posters lags well behind other genres such as films, cartoons, and advertisements, where researchers have already gone from describing their contents to evaluating their effects (Alousque, 2014; Jeong, 2008; Landau, Nelson, & Keefer, 2015; Pérez-Sobrino, 2016). Basic descriptive questions concerning topics, vehicles[1] and the construction of topic-vehicle relationships in motivational posters remain unanswered.

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[1] The major difference between I. A. Richard's 'topic/vehicle' and Conceptual Metaphor Theory's 'target/source' is that the former refer to specific metaphor tokens, while the latter generalizes related topics/vehicles as 'conceptual domains'. It will become apparent that although this paper does seek generalizations underlying

Figure 1. A motivational poster

Meanwhile, it is also noticeable that contemporary research of multimodal metaphors and image-text relations in general tend to prefer a qualitative approach characterized by rich analyses of a limited number of examples. This is quite sensible given "how much uncertainty and debate the practice of combining text and image causes" (Bateman, 2014:5), and the complex synergies in expressing meanings with more than one mode (Lemke, 1998). The relative merits of detailed description versus generalizability is of course a long-standing methodological debate. Yet it seems clear that capturing general patterns of multimodal metaphor is complementary, if not necessary, for making claims about its variabilities across genres and contexts (Deignan, Littlemore, & Semino, 2013) - even at the expense of simplifying the analysis of particularistic text-image phenomena. There is nevertheless a dearth of studies using quantitative methods to examine metaphor patterns across larger and more representative samples.

This paper reports a quantitatively oriented study of metaphor content and modality across a sample of 900 motivational posters downloaded from popular websites. It aims to provide an initial understanding of key aspects of metaphor construction including the frequency of metaphor use, frequent topics, vehicles, and topic-vehicle pairings, as well as associations between choice of modality and choice of topics/vehicles. I begin by briefly reviewing the key contributions of multimodal metaphor research, situating the present work within recent

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metaphor tokens, it does not make claims about conceptual domains. Therefore, Richard's terminology is preferred.

efforts to expand its contextual and analytical horizons. I then specify the research questions, present the methodology and findings, and conclude with suggestions for follow up research.

2. Multimodal metaphor research

Multimodal metaphor research derives from a natural convergence between advances in metaphor theory, particularly Conceptual Metaphor Theory (CMT) (Lakoff, 1993), and the growing range of contemporary contexts in which multimodality is becoming more salient and complex (Bateman, 2014; Jewitt, 2009). Two of the most important claims of CMT are that metaphors are pervasive, and primarily conceptual rather than linguistic. By examining metaphors in non-verbal communication, researchers aim to discover unique ways to express conceptual metaphors, and verify if they are indeed independent of the verbal examples typically used to infer their existence. Prominent attempts in this vein include the study of metaphor in gestures (Cienki, 1998), cartoons (El Refaie, 2003), comics (Forceville, 2005b), and music (Spitzer, 2005). An important task for these researchers has been to theorize how CMT constructs (e.g. domains, sources, targets, and mappings) and their inter-relationships are translatable to non-verbal contexts. For example, while it seems relatively straightforward to posit source/target domains, mappings, and conceptual metaphors underlying words, these may be more ambiguous in visuals, film etc., in ways which point towards theoretical ideas rivaling CMT (Cameron & Maslen, 2010; Glucksberg, 2003; Quinn, 1991). Metaphor construction and interpretation could well involve ad hoc processes influenced by pragmatic and situational factors, where emphasis is more appropriately placed on (local) metaphorical themes rather than (global) conceptual mappings. These ideas led to subsequent extensions from the study of purely non-verbal to multimodal metaphors (Forceville & Urios-Aparisi, 2009); i.e. cases where source and target within a single metaphor are represented in different interacting modes such as text and image.

At the same time, researchers have also focused on how specific real world contexts influence, constrain, or otherwise affect the production, interpretation, and functions of (multimodal) metaphors (Deignan et al., 2013; Pinar Sanz, 2015; Zanotto, Cameron, & Cavalcanti, 2008). Political cartoons for instance often embellish graphics to cast persons and institutions in a negative light (Bounegru & Forceville, 2011), but advertisements tend to use them for positive persuasive effects (Jeong, 2008). The proliferation of new media (van den Boomen, 2015) implies that contextual horizons are ever broadening, with a steady impetus

to characterize increasingly innovative forms and functions. The present case of online motivational posters is one example which raises the further question of how metaphor use may vary across related sub-types of a broader usage context. Metaphors in motivational posters are in this regard potentially comparable with metaphors in the better understood context of face-to-face counseling (Kopp & Craw, 1998; McMullen, 2008; Tay, 2013). In both cases there is a focus on conceptualizing feelings, values, attitudes, and behaviors (Norcross, 1990), which may lead us to expect similar vehicles, topics, and mappings. However, potential differences in modality (verbal counseling versus multimodal posters) and interactivity (dialogic versus mono-logic) etc. remain underexplored sources of metaphor variation.

Another critical aspect of multimodal metaphor research lies with its methodological and analytical approach, which as previously mentioned has favored rich description and interpretation of small samples. This qualitative orientation is of obvious importance at the theory-building phase where descriptive typologies are expanded and refined with nuanced inductive analysis (Forceville, 2005a; O'Halloran, 1999), especially given the inherent complexities of multimodal meaning-making (Bateman, 2014; Lemke, 1998) and metaphor. Nevertheless, despite the potentially reductionistic consequences of imposing quantitative structure onto data of this nature, the eventual objective of establishing motivated patterns and variabilities of (multimodal) metaphor across real world contexts cannot be met without quantitative generalization (Gibbs, 2010) – as demonstrated by recent developments in multimodal corpora research where "empiricism meets application" (Kipp, Martin, Paggio, & Heylen, 2009). There is still a relative lack of quantitative descriptions of multimodal metaphor patterns across larger and more representative samples, and as a result, the complementarity between the two traditionally polarized types of analyses still tends to be overlooked.

In light of the above, this paper is a case study of (multimodal) metaphor construction in the underexplored genre of internet-based motivational posters. It addresses the following research questions on the basis of theory-driven coding, statistical analyses, and selective qualitative elaboration of a sample of 900 posters.

1. How frequently are metaphors used in motivational posters?
2. What are the most frequent topic and vehicle categories?
3. What are the most salient topic-vehicle pairings?

4. What is the overall modality profile and preferences of metaphors in motivational posters (i.e. verbal, visual, or multimodal)?

5. How are modality preferences a function of specific topics and vehicles?

3. Data and methods

The broad steps of data collection, metaphor identification and coding, inter-rater reliability checks, testing for relationships between coding variables, and discourse analytic interpretation of these relationships are outlined below. Metaphor identification and coding in particular involved two raters with postgraduate level training in metaphor and discourse analysis.

3.1 Data collection

The present sample of posters was drawn from three websites. The first two (www.allposters.com, www.zazzle.com) are online retailers and at the time of writing the top results from a Google search of 'motivational posters'. The third (www.tinybuddha.com)[2] is a non-commercial website which publishes a collection of posters from a variety of other online sources. 300 posters were selected from each website by computer-aided random selection, leading to a total of 900 posters.

Metaphor identification

The first step was to manually identify instances of metaphor from the 900 posters using Bounegru & Forceville's (2011) identification criteria summarized below.

(1) An identity relation is created between two phenomena that, in the given context, belong to different categories;

(2) The phenomena are to be understood as target and source and not, in the context, reversible;

(3) At least one characteristic/connotation associated with the source is mapped onto the target

'Identity relation' and 'phenomena' are general labels which describe metaphor across verbal, pictorial, and multimodal modes. 'Identity relation' is similar to common definitions of

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[2] Despite its name, the website does not exclusively publish posters with Buddhist ideas.

verbal metaphor like 'describing something in terms of something else' (Semino, 2008), while 'phenomena' are counterparts to relatively well-defined analytic units of verbal metaphor like 'lexical unit' (Pragglejaz Group, 2007) or 'metaphor vehicle term' (Cameron & Maslen, 2010). Bounegru & Forceville (2011) discussed critical issues with applying these criteria to metaphors in their political cartoons which are often visually complex, satirical, and demand rich contextual knowledge from viewers. The present sample of motivational posters is simpler in design and arguably less demanding to interpret, although it remains true that "different viewers may infer (slightly or fundamentally) different interpretations" (Bounegru & Forceville, 2011:213). The two posters in Figure 2 illustrate straightforward and (in a few cases) less straightforward examples of metaphor.

Figure 2. Straightforward and less straightforward examples of metaphor

The left poster contains a clear instance of metaphor ('think outside the box'), where a fairly conventional identity relation is expressed between the notion of being outside a box (vehicle) and thinking creatively (topic). No complex and overly subjective interpretation process seems required. The right poster is more problematic since it could be seen as a literal encouragement for baseball players, or as metaphorically describing the challenges of life as a sporting activity. In such cases knowledge of genre conventions comes into play (Forceville, 2009) – given the assumption that most motivational posters hope to be relevant across different situations (i.e. 'challenges of life' rather than just 'baseball'), potential metaphorical allusions should not be ruled out even though it may be difficult to specify the intended topic. With a common understanding of this 'when in doubt, leave it in' (Steen, Krennmayr, Dorst, & Herrmann, 2010) approach, the two raters independently assessed whether each of the 900

posters involved metaphor. A high Cohen's Kappa of 0.87[3] was achieved and the disagreements resolved with discussion afterwards. 433 posters (48.1%) were eventually found to contain at least one instance of metaphor.

The raters then worked together for the subsequent steps of defining specific identity relations within each poster, and coding for their contents (vehicle, topic) and modality. Due to the more inductive and interpretative nature of these steps, Cameron & Maslen's (2010) qualitative guidelines for maximizing reliability with regular discussion and cross-checking were used. Motivational posters are not unlike cartoons and advertisements in that there can be multiple identity relations within one unit (Bounegru & Forceville, 2011; Hidalgo-Downing & Mujic, 2011). The poster in Figure 3 for example contains three identity relations. The 'sky' and 'sun' refer to general circumstances in life, 'fall apart' to a negative emotional experience, and 'get up' to recovery. Each contributes to the overall message but has a unique inferential pattern much like verbal 'mixed metaphors' (Kimmel, 2010), and is furthermore differently expressed. 'Sky' and 'sun' are both verbalized and drawn while the rest only verbalized. Taking a different perspective than studies which qualitatively analyze identity relations within one cartoon/advertisement etc. in a holistic manner, this study treats each specific identity relation as the unit of analysis to discuss key patterns of content and modality across the corpus. In total, 503 identity relations (hereafter 'metaphor units') were identified from the 433 metaphorical posters.

Figure 3. A poster with three identity relations

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[3] 407 posters were identified by both raters as metaphorical, and 433 as non-metaphorical. 21 were metaphorical to Rater A but not to B, and 39 vice versa. Most of the disagreements involved common words such as 'make' in 'make the most of today', which were generally excluded after discussion unless there was clear contextual evidence of their intended metaphoricity.

3.2 Coding

Each metaphor unit was then coded under five variables: VEHICLE, TOPIC, VEHICLE_MODE, TOPIC_MODE, and OVERALL_MODE. To be able to commonly categorize words and pictures, it was assumed that referents are equivalently expressed in different modes (Forceville, 2009); e.g. the word 'sky' and a picture of the sky refer to the same, or not significantly different, underlying concept.

The labeling of VEHICLEs and TOPICs generally followed an inductive process with no assumptions about what might be found, as opposed to approaches like CMT which may focus on instantiations of presumed conceptual metaphors (Cameron & Maslen, 2010). For VEHICLEs, the raters first noted down their basic expression before grouping them based on thematic similarity to derive a more manageable number of categories. In Figure 3 for example, the vehicles of the three metaphor units were initially labeled 'sky and sun', 'fall apart', and 'get up'. As more metaphor units were coded, categories began to emerge. Sky and sun' fell under the broader category 'nature', along with other vehicles like 'ocean' and 'rainbow'. TOPICs tend to be more difficult to code if not explicitly expressed. In most cases it was reasonable to posit a broader category such as 'emotions' for 'fall apart'. Sometimes the contextual meaning is too unclear, like the phrase 'a friend is one who overlooks your broken fence', in which case it falls under the 'ambiguous' category. Ambiguous topics allow viewers to supply apt ones for themselves and turn out to be frequent in motivational posters, as will be discussed later. They reflect the aforementioned theoretical ideas against CMT, in that metaphor interpretation is often ad hoc without the need to access ostensible conceptual metaphors (Glucksberg, 2003).

VEHICLE_MODE describes how the vehicle of each metaphor unit was expressed. Vehicles were coded as verbal (only), visual (only), or both (i.e. multimodal). TOPIC_MODE describes how the topics were expressed, but unlike vehicles, there was the additional category of 'unexpressed' topics. In Figure 3 'sky and sun' is coded as multimodal while 'fall apart' and 'get up' are verbal. All their corresponding topics are 'unexpressed'.

OVERALL_MODE describes whether the entire metaphor unit was verbal, visual, or multimodal. If both the topic and vehicle were verbal/visual, the unit was considered verbal/visual. If either topic, vehicle, or both topic and vehicle were multimodal, the unit was

considered multimodal. This allows for investigation of the overall distribution of modality, as well as its specific distribution across topics and vehicles. From a qualitative point-of-view the present categorical distinction between verbal, visual, and multimodal may obscure different *degrees* of contribution any particular text and/or image may make to a metaphor unit (Bateman, 2014). While we could certainly explore various 'shades' of multimodality in a metaphor, as explained earlier, clearer boundaries are required for the purposes of the present study. Potential differences in degree within the three categories were therefore not considered in detail.

3.3 Relationships between variables

After coding all 503 metaphor units and deriving the most frequent topics, vehicles, and modes, the presence and strength of frequency-based relationships between different variables were determined. Cross-tabulation analyses of the variable pairs TOPIC-VEHICLE showed which metaphorical themes were significantly more/less likely to occur relative to one another, while similar analyses of TOPIC and VEHICLE with their respective MODE provided insights into content-influenced modality choices. These relationships will be discussed as patterns underlying the construction of motivational posters, supported by discourse analytic interpretation of specific examples.

4. Results and discussion

This section first addresses the overall frequency of metaphor use, followed by an analysis of metaphor content (topics, vehicles, and topic-vehicle pairings), and finally the relationships between content and modality in motivational posters.

4.1 Metaphor frequency

433 out of 900 posters (48.1%) were found to contain at least one metaphor unit. While less than half of the posters were metaphorical, this difference was not significant (χ^2(1, $N = 900$) $= 1.21$, $p =0.271$), and still suggests metaphor as a widely used conceptualization and communicative strategy in motivational posters. From the 433 metaphorical posters, 503

specific metaphor units were identified, and these constituted the dataset for the remaining analyses.

4.2 Metaphor content: Topics, vehicles, and topic-vehicle pairings

Table 1 shows the ten most frequent topic and vehicle categories

Topic categories	N
Mentations	124 (24.65%)
Ambiguous	76 (15.11%)
People	72 (14.31%)
Circumstances	67 (13.32%)
Emotions	58 (11.53%)
Life	38 (7.55%)
Past-present-future	18 (3.58%)
Behaviours	12 (2.39%)
Objectives	10 (1.99%)
Success	7 (1.39%)
Vehicle categories	**N**
Objects	86 (17.10%)
Movement	69 (13.72%)
Animals	55 (10.93%)
Forces	49 (9.74%)
Nature	41 (8.15%)
Actions	37 (7.36%)
Containers	26 (5.17%)
Light	18 (3.58%)
Dreams	17 (3.38%)
Vision	16 (3.18%)

Table 1. Most frequent topic and vehicle categories

Most of the top ten topic categories are unsurprising given the general expected contents of motivational posters. They will be briefly described one by one. 'Mentations' refers to any mental activity and is exemplified by words like 'thoughts', 'thinking', 'the mind', and 'plans', as well as more specific mental attitudes like 'peace' and 'persistence'. 'People'

mostly refer to 'you' (the viewer) or the collective 'we/us', but also others ('they/them'), and human beings in general. 'Circumstances' include descriptions like 'mistakes made', 'painful experiences', 'things that weigh you down', and 'things that don't matter anymore'. Typical 'emotions' include happiness, anxiety, sadness, and anger. 'Life' is a familiar topic and is often expressed with the actual lexeme 'life' and derivations like 'living' or 'life's'. 'Past-present-future' is also often expressed with 'the past', 'the present' and 'the future', together with time deictics like 'yesterday, 'today', and 'tomorrow'. 'Behaviors' describe specific actions which the viewer is advised to take, like in 'smile, it's contagious', or general behavioral traits like 'laughter'. 'Objectives' refer to general things to accomplish such as 'winning' and 'your goals', and 'success' often expressed with the lexeme 'success' and its derivations. As discussed later, a significant majority of these topics are exclusively expressed in verbal form.

Perhaps most interesting is the second-placed 'ambiguous' category, which refers to cases where the raters determine the contextual meaning of the metaphor to be too unclear for categorization elsewhere. In 'a friend is one who overlooks your broken fence and admires the flowers in your garden', one cannot reasonably determine if 'broken fence' or 'flowers in your garden' refer to attitudes, appearances, accomplishments, and/or something else, and it is precisely this ambiguity which allows viewers to supply the most suitable topic for themselves in ad hoc fashion. Unclear topics also occur in other genres but there are subtle differences. In advertisements, the topic which in many cases relate to the advertised product may at first be purposely made unclear (Landau et al., 2015), but is almost always eventually clarified. For political cartoons, there is often a shared body of "taken for granted" (Bounegru & Forceville, 2011:213) knowledge about the topic which permits, and in some cases motivates non-clarity for pragmatic purposes. Vehicle categories are on the other hand never ambiguously expressed in the sample of motivational posters - whether this is also observed in other genres remains an intriguing question.

The top vehicle categories include 'movement', 'forces', and 'containers' which resemble abstract image schemas in the CMT tradition (Johnson, 1987), as well as semantically richer categories such as 'animals' and 'nature'. Movement vehicles describe processes as purposeful physical movement from one point to another, force vehicles construe cause-effect relations with a range of different physical forces, while container vehicles describe particular states of being as locations with physical boundaries. Object vehicles tend to involve comparisons with concrete and relatable things like 'broken toys', 'bicycle', and 'gift',

focusing on material and functional qualities like size, value, and purpose. Animal vehicles involve a wide range like birds, butterflies, and dogs, and as we shall see are overwhelmingly used to conceptualize human beings. Nature vehicles likewise involve a range such as the sun, sky, trees, mountains, and oceans, and as we shall also see, there is an interesting tendency for them to pair with ambiguous topics.

Table 2 shows the cross-tabulated frequencies (Count) and adjusted standardized residuals (Residual) of the top six topic and top seven vehicle categories. These comprise more than 80% of the present data. The cross-tabulation reveals topic-vehicle pairings which, although similar in logic to conceptual metaphors (Bounegru & Forceville, 2011:221), are more accurately described as metaphorical themes in the data which do not necessarily amount to stable conceptual correspondences. They also differ from Cameron & Maslen's (2010) idea of systematic metaphors, since the themes are inducted from mutually independent discourse units (i.e. posters) rather than a single flow of discourse. They will therefore be presented in the 'topic is vehicle' format, to distinguish them from conceptual (TOPIC IS VEHICLE) and systematic metaphors (*TOPIC IS VEHICLE*).

Beyond a list of raw frequencies, a statistical analysis of association provides further interesting information. Firstly, it confirms that the overall topic-vehicle distribution is not random, with a moderate-to-strong tendency ($\chi^2(30, N = 316) = 308.25, p <.0001$, Cramer's V=0.442) for certain topics to couple with certain vehicles. Secondly, the residuals reveal exactly which pairings are significantly more/less likely to have occurred than by chance, relative to one another. This is important because even though a particular pairing seems (un)common in terms of absolute frequency, this should be interpreted by considering how often the respective topic also pairs with other vehicles, and vice-versa. For each pairing this is done by comparing the actual frequency with an 'expected' frequency – derived by multiplying the row total (i.e. other vehicles for that topic) with the column total (i.e. other topics described by that vehicle), divided by the total sample size of 316. The greater the difference between actual and observed frequencies, the larger the residuals are. The green cells in Table 2 indicate pairings which occur significantly more likely than by chance at $p<0.05$ (i.e. residuals above +2.0), the red cells the opposite (below -2.0). Table 2 and all subsequent tables are modified from SPSS 21.0 output.

Topic		Action	Animal	Contain	Force	Move	Nature	Obj	Total
					Vehicle				Total
Circumstances	Count	6	0	5	13	15	7	7	53
	Residual	.1	-3.7	.9	2.4	2.1	.3	-1.6	
Emotions	Count	1	3	5	14	4	5	11	43
	Residual	-1.9	-1.9	1.4	3.8	-1.6	-.1	.8	
Life	Count	0	0	0	1	14	2	7	24
	Residual	-1.8	-2.3	-1.4	-1.4	5.3	-.6	1.0	
Mentations	Count	18	1	9	8	11	5	33	85
	Residual	3.6	-4.6	1.7	-1.4	-1.4	-2.0	4.6	
People	Count	0	49	0	2	0	5	5	61
	Residual	-3.0	14.4	-2.3	-2.7	-4.1	-1.0	-2.8	
Ambiguous	Count	9	2	2	6	13	14	4	50
	Residual	1.8	-2.7	-.8	-.4	1.6	3.8	-2.5	
Total	Count	34	55	21	44	57	38	67	316

Table 2. Cross-tabulation of major topic and vehicle categories

The following discussion will first focus on significant topic-vehicle pairings in the data which are well-attested in the literature and known to frequent different discourse contexts: 'mentations are objects and actions', 'life and circumstances are movements', and 'emotions and circumstances are forces'. This is followed by a discussion of significant pairings which may possess more genre-specific qualities: 'people are animals' and 'ambiguous topics are (elements of) nature'.

4.3 Well-attested pairings

Cognitive linguists argue that the ontology of abstract aspects of our sense of self such as mental states, emotions, and general understanding of life tend to be universally conceptualized with a small set of physical image schemas such as source-path-goals, locations, physical objects and forces. Widely discussed topic-vehicle pairings include LIFE IS A JOURNEY, EMOTIONS ARE FORCES, STATES ARE LOCATIONS, THE MIND IS A CONTAINER, and so on, with the caveat that there can be variability in their elaboration across different cultures and contexts (Kövecses, 2000, 2005; Lakoff & Johnson, 1999). The

present data, from the multimodal context of motivational posters where sense-of-self conceptualizations are expected to be prominent, affirm the cognitive linguistic view and demonstrate this variability. Figure 5 shows two examples which respectively depict mentations as concrete physical objects and mentations as actions. The left poster illustrates different objects 'overflowing' from a person's head, metaphorically representing thoughts and 'overthinking' as the biggest cause of unhappiness. The right poster describes the mental attitude of persistence as the physical action of taking little steps (rather than one giant step). The visual of a man exercising further suggests that the attitude of persistence should be a recurrent, habitual act, without a definite endpoint.

Figure 4. Mentations as objects and actions

The oft-discussed vehicle category of purposeful physical movement is also frequent, and most often used to describe 'life' and 'circumstances' in motivational posters. Figure 5 shows two examples which respectively depict life and particular circumstances as a process of moving from one point to another.
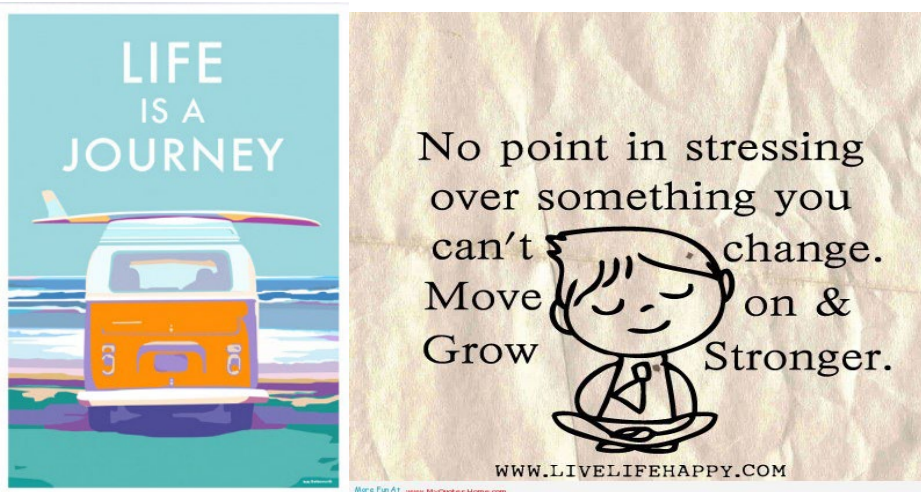
Figure 5. Life and circumstances as physical movement

Verbal expressions of such physical movement are fairly diverse in motivational posters, ranging from conventional ones like 'life is a journey', 'enjoy the ride', 'move on', 'going through hard times', 'racing to the next moment', and 'continue to move forward', to more creative ones like 'the bad things… put us directly on the path to the most wonderful things', and 'life is like a road trip'. Visual expressions also range from conventional depictions of paths to more creative attempts like the left poster in Figure 5, where the van and surfboard invite viewers to associate life with exciting or adventurous aspects of journeys. Movement metaphors generally conceptualize the ideal way of living life and dealing with circumstances as continuing to move along a 'correct' metaphorical path, and often imply an ideal endpoint or destination with expressions like 'top of the mountain' or 'getting closer'.

The final group of significant and widely attested topic-vehicle pairings are 'emotions and circumstances are forces'. Circumstances are hence routinely described as both movement and force, the latter often impeding the former. Figure 6 shows two examples, the first which construes worrying as a force which 'takes away' peace (itself an example of 'mentations are objects'), the second which describes 'things that don't matter anymore' as extra weight which 'holds (one) down'. Like movement, metaphorical forces have a range of expressions, from stronger ones like 'explosion', 'breaking' and 'fall apart' to weaker ones like 'letting go' and 'weighing down'. These expectedly correlate with the intensity or severity of the intended topic.
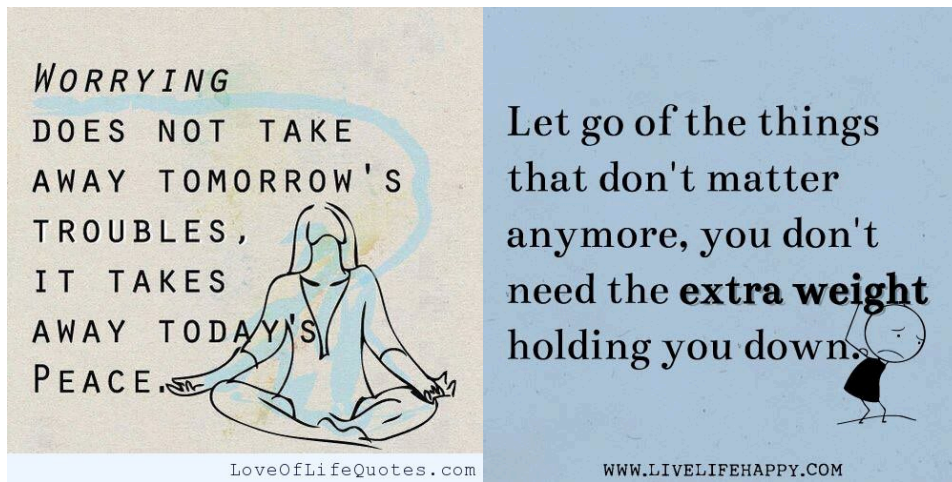
Figure 6. Emotions and circumstances as forces

4.4 Other significant pairings: animals and nature as vehicle categories

The residuals analysis reveals two other significant topic-vehicle pairings expressed at the substantive rather than image-schematic level: 'people are animals' and 'ambiguous topics are (elements of) nature'. The metaphorical depiction of people as animals is in fact the strongest tendency among all pairings, evident from the extremely high positive residual (+14.4) and accompanying negative residuals for other topics and vehicles involving animals and people respectively. The tendency to compare ourselves with animals in both positive and negative terms is cognitively well motivated, as discussed in Lakoff and Turner's (1989) analysis of the 'great chain metaphor'. Animal-human comparisons figure prominently across many cultural models and may be valued as embodiments of folk wisdom in motivational posters and related contexts such as counselling. Zuñiga (1992), for example, provides an account of Spanish animal proverbs used in counselling Latino clients (e.g. *camarón que se duerme, se lo lleva la corriente;* the careless shrimp will be carried away by the current), which she claims to be effective for establishing cultural common ground.

Figure 7 shows two examples. The left poster invites viewers to construe themselves as a peacock. The topic ('yourself', 'you') is represented verbally and the vehicle pictorially, indicating that each of us can be wonderful and unique just like peacocks. Other animals functioning similarly as vehicles include elephants, mice, butterflies, owls, chickens, 'generic' birds, and turtles. In most of these cases, the animals denote positive qualities such as wisdom (owl), beauty (peacock), evolution (butterfly), and freedom (bird), which are then

metaphorically mapped onto viewers. As discussed in the later section on content and modality, animals as vehicles are almost always represented visually, or verbally and visually, with iconic depictions of their positive qualities. The right poster illustrates a slightly different type of mapping. Here, the point of the metaphor lies in the gesture of kindness despite the size disparity between the elephant and dog, rather than any specific quality of elephants and dogs in general.
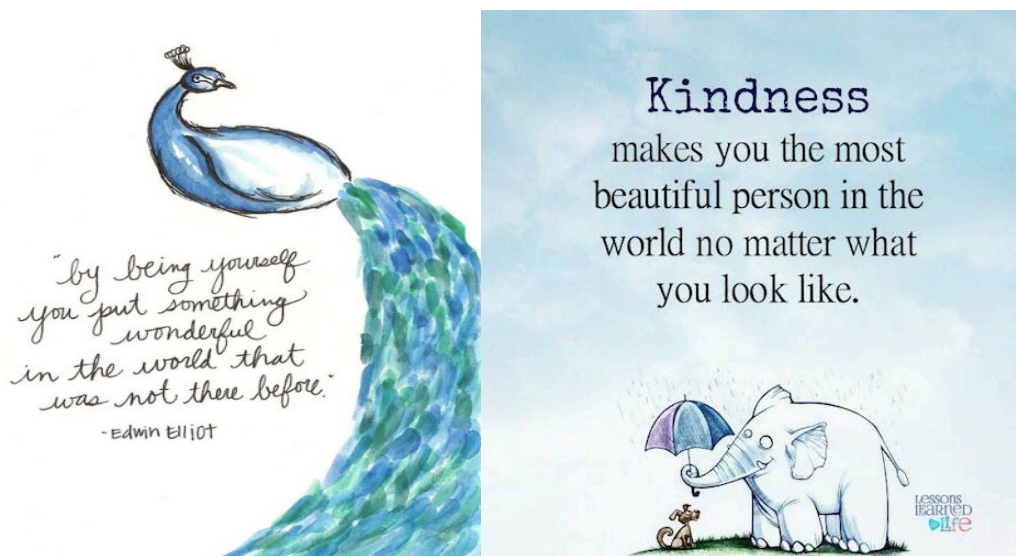
Figure 7. People as animals

The final significant pairing is between 'ambiguous topics' and 'nature'. While this pairing does not actually suggest a particular set of mappings, given that 'ambiguous topics' must be inferred on a situational basis (Glucksberg, 2003), their general tendency to co-occur with nature-related vehicles is an intriguing characteristic of motivational posters. Figure 8 shows two examples. There are no explicit verbal or visual cues to indicate what 'broken fence', 'flowers', 'garden', 'waves' and 'surf' mean metaphorically, but the pronouns 'you' and 'your' suggest that the intended topic is to be supplied by the viewer's subjective interpretation of her situation.
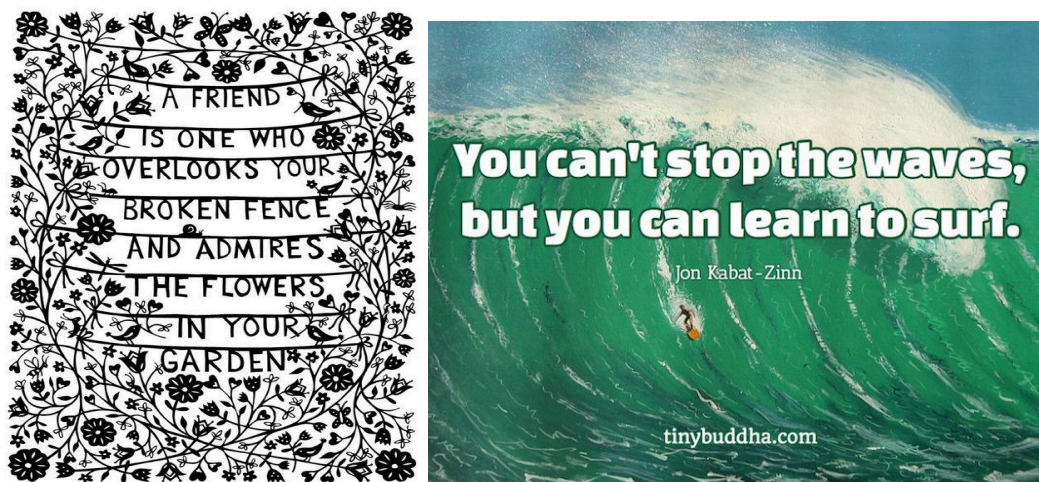
Figure 8. Ambiguous topics expressed with elements of nature

The range of nature-related vehicles for ambiguous topics includes rainbows, thunderstorms, waves, the four seasons, blue sky, sunshine, the ocean and shores, flowers, and garden. They collectively highlight four major qualities of nature and its contrast with human activity: i) an enduring essence or stability; ii) unpredictability, iii) beauty and majesty, and iv) mystery and danger. The respective intended metaphorical inferences appear to involve i) the reassuring idea that things will eventually work out, ii) the futility of trying to control how life will turn out, iii) good things which are easy to take for granted and should be more keenly appreciated, and iv) crises which are also opportunities for personal development. These qualities highlight the somewhat contradictory co-existence of stability and change, as well as beauty and danger, for which our understanding of nature could well be a prototypical and intuitive exemplar (Glucksberg, 2003), broadly applicable to the understanding of any situation in life involving complexity, uncertainty etc. For example, in a study where students were asked to come up with metaphors to represent the complexities and paradoxes of knowledge management, McKenzie and van Winkelen (2011) found that nature metaphors which highlight both change and inevitability were indeed among the top choices. It can also be observed that some expressions of this ambiguous-nature pairing originate from proverbs like 'no matter how long the winter, spring is sure to follow', 'man cannot discover new oceans unless lose sight of shore', and 'a smooth sea never made a skilled sailor'.

4.5 Metaphor and modality: relationships between topics, vehicles, and mode

The modality of a metaphor refers to how its topic and vehicle is manifested, which in the case of motivational posters is limited to words and/or pictures. As discussed earlier, the qualitative aspects of this question have been addressed for genres like advertisements and political cartoons, with insights into particularistic interplays between content, modality choices, and contextual factors underpinning production and interpretation. The present study focuses on a more general level of analysis like whether multimodality is in fact a preferred design strategy, and how modality choices vary with different vehicles and topics over a relatively large sample.

The first question is to what extent poster designers actually capitalize on the visual mode to construct visual and/or multimodal metaphors. Among the 503 identified metaphor units, it turns out that 228 were exclusively verbal (45.3%), 24 were exclusively visual (4.8%), and 251 were multimodal (49.9%). Multimodal metaphors constitute a slight majority but the more telling result is the significantly fewer number of pure visual metaphors ($\chi^2(2, N = 503) = 186.23, p <0.0001$), which suggests the importance of verbal or linguistic grounding in motivational posters. Since the grounding of a metaphor is defined in this paper according to the grounding of its parts (topic and vehicle), the next question is whether topics or vehicles are specifically more likely to be verbal, visual, or multimodal (Table 3).

		Mode			Total
		Both	Verbal only	Visual only	
Topics	Count	35	361	8	404
	Adjusted Residual	-10.1	13.5	-6.9	
Vehicles	Count	191	234	78	503
	Adjusted Residual	10.1	-13.5	6.9	
Total	Count	226	595	86	907

Table 3. Cross-tabulation of topics/vehicles and mode

The results (with unexpressed topics excluded) reveal a clear differentiation of modality between topics and vehicles ($\chi^2(2, N = 907) = 183.142, p <.0001$, Cramer's V=0.449). Although multimodal and pure verbal metaphors are prevalent overall, vehicles are far more likely to be multimodal or purely visual than topics, but topics are far more likely to be purely

verbal than vehicles. One explanation is that, with the exception of the previously discussed 'ambiguous topics', designers prefer to anchor topics in text to make them immediately comprehensible and relevant, while amplifying the inferential potential of vehicles with adroit combinations of text and pictures to explore new and alternative perspectives. Another explanation is that abstract topics are just harder to represent pictorially, while vehicles are almost by definition highly expressible. It would be worthwhile to examine the modality profiles of topics and vehicles in other genres, and to what extent different distributions align with each genre's communicative and rhetorical purposes (Forceville, 2009:33). In advertisements, for example, it seems likely that the topic (often the advertised product) would not be as restricted to verbal expression as in motivational posters.

The final level of analysis is to examine modality profiles across specific topic and vehicle categories, which may shed more light on the general associations discussed above. Table 4 cross-tabulates the major vehicle categories discussed earlier with their modes of presentation.

			Vehicle Mode			Total
			Both	Verbal only	Visual only	
Vehicles	Actions	Count	17	15	2	34
		Adjusted Residual	1.7	.1	-2.2	
	Animals	Count	10	2	43	55
		Adjusted Residual	-3.1	-6.5	11.9	
	Containers	Count	9	12	0	21
		Adjusted Residual	.6	1.3	-2.4	
	Forces	Count	17	22	5	44
		Adjusted Residual	.3	1.0	-1.5	
	Movement	Count	25	30	2	57
		Adjusted Residual	1.2	1.6	-3.4	
	Nature	Count	22	12	4	38
		Adjusted Residual	2.9	-1.6	-1.5	
	Objects	Count	16	44	7	67
		Adjusted Residual	-2.5	4.2	-2.2	
Total		Count	116	137	63	316

Table 4. Cross tabulation of major vehicle categories and mode

The overall association between major vehicle categories and mode is significant and in fact quite strong (χ^2(12, N = 316) = 162.11, p <.0001, Cramer's V=0.506). 'Forces' is the only category which does not evince a significant relative preference for either of the modes, and in that sense appears to be the most versatile of the vehicles. There is little relative advantage in expressing the notion of a force with words (e.g. *don't let the problems weigh you down*), pictures (e.g. of a man struggling with a load on his shoulders), or some combination of both. Otherwise, each mode is strongly associated with a particular vehicle category – 'animals' tend to be purely visual, 'objects' purely verbal, and 'nature' multimodal. There are also noteworthy dispreferences for pure visual presentation of 'actions', 'containers', and 'movement'.

The overwhelming visual preference of 'animals' can be explained in light of the prevalent 'people are animals' metaphor discussed in the previous section. Most of the constructed relations between people and animals are based on qualities which are iconically salient and thus more succinctly expressed with pictures, such as the beauty of peacocks (Figure 7) or the freedom of birds flying in the sky. While clever use of language may still allow designers to communicate this metaphorical relationship, direct visual depiction is likely to be seen as more vivid and effective. Conversely, because the inferential patterns of categories like 'containers' and 'movement' tend to involve abstract spatial relations conventionally represented in language (e.g. 'inner peace', 'an open heart', 'move on'), visual-only presentation without linguistic support may be considered ineffective. In this regard it may be surprising to observe that 'objects' generally disprefer visual presentation, regardless of whether linguistic support is present. It was mentioned earlier that objects as vehicles tend to involve comparisons with concrete and relatable things like 'broken toys', 'bicycle', and 'gift', focusing on material and functional qualities like size, value, and purpose. While one might assume that these objects and their mapped qualities are equally representable by words, images, or both, it turns out that there is a significant tendency to use only words. Figure 9 shows two examples where the object vehicles of 'gifts' and 'anxiety drug/antidepressant' are verbalized only. While 'gift' is a fairly conventional metaphor for aptitude and is therefore understandably verbalized, 'anxiety drug/antidepressant' are not conventional metaphors for food/exercise.

Figure 9. Verbal-only representations of object vehicles

Lastly, significant preference for multimodal presentation is limited to the 'nature' category, where we often see scenic illustrations and photographs depicting nature (e.g. the sun, sky, trees, mountains, oceans) combined with words to communicate metaphors. Both posters in Figure 9 above are illustrative, as the flowers and waves are both verbally described and visually presented. Designers may prefer using both modes since words alone may fail to adequately communicate desired qualities such as the previously discussed sense of mystery and beauty, while pictures alone may fail to communicate the particular conceptual relevance of nature, given that nature-related imagery often serves as ornamental backdrops in visual displays. Collectively, these different tendencies across vehicle categories suggest that vehicle expression in such posters is motivated by relevance and ease of interpretation, rather than more complex rhetorical strategies (e.g. irony, hyperbole) one might expect of genres such as political cartoons and advertisements.

We now move on to the presentation of topics. Table 5 cross-tabulates the major topic categories with their modes of presentation. Unexpressed and ambiguous topics are excluded.

			Topic Mode			Total
			Both	Verbal only	Visual only	
Topics	Circumstances	Count	2	50	0	52
		Adjusted Residual	-1.7	1.9	-.9	
	Emotions	Count	9	34	0	43
		Adjusted Residual	2.7	-2.2	-.8	
	Life	Count	0	23	1	24
		Adjusted Residual	-1.7	1.1	1.4	
	Mentation	Count	8	73	2	83
		Adjusted Residual	-.1	-.3	1.2	
	People	Count	5	35	0	40
		Adjusted Residual	.6	-.3	-.8	
Total		Count	24	215	3	242

Table 5. Cross tabulation of major topic categories and mode

Different than the previously discussed vehicle-modality relationship, there is at best only a marginally significant association between major topic categories and mode ($\chi^2(8, N = 242) = 15.018$, $p =.059$, Cramer's V=0.176), although caution should be exercised with this interpretation due to the low expected frequencies in some cells. As we saw in Table 3 the majority of topics are simply verbally expressed. 'Circumstances', 'life', 'mentation' and 'people' all conform to this general distribution, evincing a dispreference for pure visual or multimodal presentation. However, 'emotions' is an exception where multimodality is relatively far more common as an alternative to the dominant verbal-only mode. A closer examination of specific examples reveals that multimodal presentation of emotions is facilitated by the use of conventional symbols such as a pictorial heart for love, which further allow creative metaphorical depictions such as love as valuable objects, and love as a tree (Figure 10). Other topic categories like 'circumstances' and 'life' seem to lack similar conventional symbols, while symbols and/or illustrations for 'people' do not appear to be popular alternatives to straightforward verbal depictions like 'I' and 'you/we'. As with the case of vehicles it could likewise be concluded that topic expression in motivational posters is driven by relevance and ease of interpretation rather than complicated rhetorical strategies.
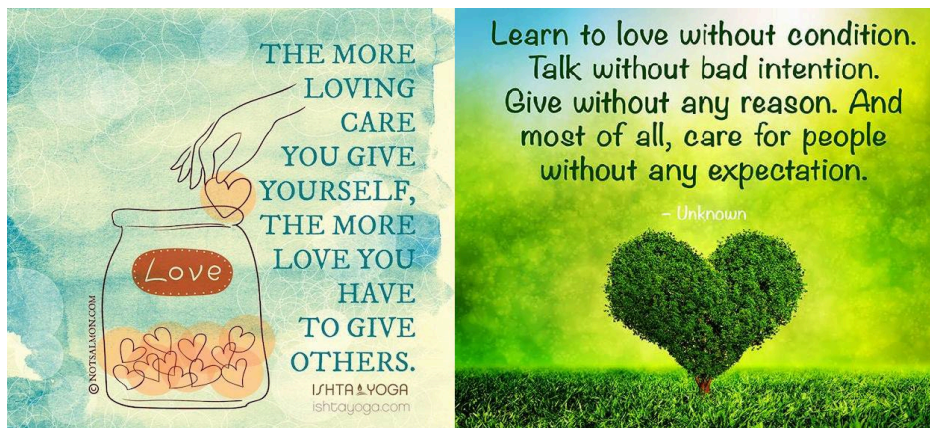
Figure 10. Two posters with multimodal depictions of emotions

5. Summary and future directions

This paper aimed to provide an initial understanding of metaphor content and modality in the underexplored genre of motivational posters. Revisiting the specific research questions posed at the beginning, it was found that slightly less than half (48.1%) of all poster samples involved metaphor use; the non-statistically significant difference between the number of metaphorical and non-metaphorical posters upholds general claims of the widespread use of metaphors in real world discourse. Major topic and vehicle categories predictably reflect motivational posters as a genre which highlights mental states and emotions, but the phenomenon of 'ambiguous' metaphorical topics is a noteworthy characteristic. Prominent topic-vehicle pairings include both well-attested (e.g. life as purposeful physical movement, mentations as objects) and specifically motivated conceptualizations (e.g. people as animals, ambiguous topics as elements of nature), all of which serve to convey abstract notions in more relatable and/or appealing ways. In terms of modality and its relationship with metaphor contents, it was firstly found that the vast majority of metaphors tended to be expressed multimodally (49.9%) or verbally (45.3%), with very few relying on visuals alone (4.8%). A closer investigation revealed a clear differentiation of modality between topics and vehicles – topics are much more likely to be purely verbally expressed while vehicles, in contrast, demonstrate a clear preference for multimodal or pure visual expression. Lastly, it was found that particular vehicles are more likely to be expressed with particular modes, but such a

relationship does not exist strongly for topics. In both cases, however, modality preferences can be seen as driven by relevance and ease of interpretation, rather than the more challenging processes typically involved in interpreting and appreciating metaphors in advertisements, political cartoons etc. The analytical approach throughout the paper departed from the more usual discourse analytic scrutiny by focusing on the interplay between topics, vehicles, and modality across a large number of examples. This was facilitated and partly motivated by the relative absence of pragmatic complexities in such posters, which allows the analyst to pursue quantification and generalizability without overly compromising the nuances of metaphor construction. It also complements qualitative analysis by providing firmer grounds for making genre-specific claims about metaphor use.

There are several interesting possibilities for follow-up research. Firstly, on the subject of metaphor variation within sub-types of a broader usage context, one could examine the parodic and equally popular 'demotivational posters', which are meant to make fun of the type of motivational posters presently studied. The example in Figure 11 suggests that we may expect to find similar vehicles and topics as a consequence of this parody, but their presentation is likely to involve more complex pragmatic strategies such as humor, irony and hyperbole. While the relationship between metaphor and such strategies has been extensively researched (Burgers, Konijn, & Steen, 2016; Colston & Gibbs, 2002), direct comparisons between a 'mainstream' genre and its equally salient parodic counterpart should add further nuances to our understanding.

Figure 11. A parodic 'demotivational poster'

Secondly, by outlining the parameters of content and modality along which metaphors in motivational posters vary, the present study may contribute towards future attempts to clarify how these variants are perceived in terms of effectiveness, appeal etc (cf. Kerr et al., 2001). Therefore, other than psychological variables such as motivational context and demographic variables such as age and gender, variables of content and form such as the choice and presentation of vehicles and topics are also manipulatable and investigable as potential factors. Other formal aspects including typography, which are beyond the present scope, should also be closely studied in this regard. In addition, detailed descriptions of metaphor-related phenomena such as metonymy and mixed metaphors would provide further ways to classify poster variants. There is certainly much room to explore the potential contributions of discourse analysis to empirical questions of whether motivational posters have genuine value in improving peoples' psychological well-being.

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