Without anchor: Themata and blood donation

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This paper explores themata as a means of elucidating what is understood about social issues, in particular, blood donation. We conceptualised themata as dialectical antinomies (Marková 2000; 2003), and looked to the figurative kernel of the representation to identify what the underlying thema/themata might be. In so doing, we posed the question of whether each of the antinomies in a thema gives rise to a separate homogeneous representation or whether it is as a pair that antimonies generate a, potentially, heterogeneous representational field. One thousand and eighty participants wrote the first five words that sprung to mind when they thought about '*blood donation'*. Multi-Dimensional Scaling and Hierarchal Cluster Analysis revealed a figurative kernel comprised of both negative and positive aspects of blood donation. Further analysis suggested this was articulated

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through the thema of Self/Other.   We discuss the methodology employed, and the implications of understanding themata for communications by the Australian Red Cross Blood Service.

Keywords: themata, thema, blood donation, social representations, figurative kernel

The question of why it is that we understand things in the way that we do is at the heart of the concept of themata. Moscovici introduced this concept at the *First International Conference on Social Representations* at Ravello, Italy[1], describing themata metaphorically as clothes-hangers that give form to socially generated ways of understanding (Moscovici, 1993). Alluding to their generative role as potential content, themata have also been described as source ideas (Moscovici, 1993), central notions of knowledge (Moscovici & Vignaux, 1994), latent drivers (Smith & Joffe, 2012), and as focal points (Marková, 2000) for nascent representations, emerging and re-emerging in line with the social context of time. In this paper we explore the efficacy of themata for exploring what is understood about blood donation.

Despite the introduction of this concept in 1992, and the publication of *Le Concept de Themata* in 1994 (Moscovici, 2000; Moscovici & Vignaux, 1994), there is a paucity of research exploring the role of themata in the generation of social representations. This is surprising as intuitively the concept of themata is fundamental to any study of social representations. Giving both structure and content to social representations, themata link past understandings and new ways of thinking, shedding light on how the past pervasively forges and constrains social thought (de Rosa, 1987; Foster, 2006). We suggest the potential of this concept is yet to be realised.

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[1] In 1992.

WHAT ARE THEMATA?

Moscovici's original conception of themata drew from Holton (Moscovici ,1993; Moscovici & Vignaux, 1994) and proposed that the genesis of a social representation is shaped by central notions of knowledge that exist in the collective memory of a society. Initially conceptualised as binary oppositions such as black/white, long/short, dirty/clean, Moscovici (2001) has also suggested "strings of themata" in the form of maxims, metaphors and social definitions. However, it is Marková's (2000; 2003) theorising of themata within the larger framework of dialogicality and social representations that is attributed with developing this concept (Smith & Joffe, 2014).

Marková (2000; 2003) proposes that dialogical taxonomies relate to the idea that categories in social thinking are embedded with their respective antinomy, between which there is a mutual interdependence and tension. Thinking in oppositions, or antinomies, is argued to be part of cultural socialization, for instance, what is long is referenced by what is short, what is moral by what is immoral. However, not all dialogical taxonomies become themata.

In times of societal challenge, Marková (2000) explains, such as a crisis, a threatening event or the introduction of a new technology, taxonomies germane to the phenomenon becomes the point of convergence for debate and dialogue about the issue. As a consequence, the boundaries of a taxonomy become "dialogically reconstructed" emerging as thema from which nascent representations are generated (p.447). Marková cites examples of how the Chernobyl disaster and mad cow disease have changed the content of what comes under the edible/inedible taxonomy. This was also seen recently in Syria, where chronic food shortages led Muslim leaders to issue a fatwā allowing the eating of cat and dog (The Blaze, 2013).

Theoretically the next tenet is unclear, that is whether dialectical antimonies in a thema generate a representation or representations. One suggestion is that each of the antimonies in a thema (e.g. good or bad) gives rise to a separate representation. This position has been used to explain why representations often occur in pairs (see Castro & Gnomes, 2005). An alternate explanation points to the central role of dialectical antimonies in the generation of the figurative kernel[23]; and suggests that the generative potential of themata is through a pair of antimonies.

Themata are suggested to underpin the figurative kernel which is argued to be the most basic form of a social representation,"in a sense, … the images, notions or judgements … generated over time" (Moscovici, 2011, p 454). In his essay on the ethnic Gypsy minority, Moscovici (2011) discusses how the figurative kernel associated with how Gypsies are represented has not changed for over 400 years, and is articulated around a basic[4] sedentary/nomadic thema that condenses both positive (Gypsies may often work as travelling entertainers) and negative (Gypsies may live outside the law) aspects of the gypsy nomadism.

The question of whether each of the antimonies in a thema gives rise to separate representations or whether it is as a pair that antimonies generate a representation is inextricably linked to how logical a representation is theorised to be. By this we refer to whether we assume the ideas and beliefs in a representation should be coherent,[5] or whether the assumption is that a representational field can be fragmented or potentially heterogeneous[6]. If the assumption is the former, then dilemmatic social knowledge (about the issue) would be a function of separate

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[2] Also referred to as figurative nuclei.

[3] The figurative nuclei or kernel aligns with Abric's (1993; 2001) theoretical positon of a central core

[4] Themata have also been identified as basic and emblematic (Marková, 2003; Moscovici, 2011). Basic themata are argued to emanate from the dialogicality of the Ego-Alter, and play a prominent role in social thinking because they are imperative to human survival and enhancement (Marková, 2003). Emblematic themata, in contrast, may emerge, disappear, and re-emerge (Moscovici, 2011).

[5] See Abric (1992; 2001) and colleagues for research that supports this view.

[6] See Rose et al., (1995) and Moloney et al., (2002) & Moloney et al (2005) for research supporting this view.

representations most likely generated from *each* of the antimonies. In contrast if the assumption is the latter, then dilemmatic social knowledge would suggest the representational field is a composite of ideas and beliefs that are not coherent (or logical in a rational sense) and therefore most likely generated through the tension *between* the antimonies. This question is at the centre of this paper and reflects our interest in looking at blood donation from a social representational perspective.

Identification of themata

Liu (2004) argues that themata manifest in the figurative kernel or symbolic image of the representation, in line with the cultural or historical context. However, as potential content, themata may not necessarily appear in verbal language (Liu, 2004), creating the quandary of how to identify something that may not be seen or heard. To date, themata have been identified through thematic analysis or deductive theoretically driven reasoning (Foster, 2006; Liu, 2004; Marková, 2000, 2003; Moscovici, 1993; 2011; Moscovici& Vignaux, 1994) with a few studies using word association techniques (Callagan et al., 2012; Moloney et al., 2005; Moloney et al., 2013; Smith & Joffe, 2012) and content / *Homals* analysis of newspaper articles (Castro & Gnomes, 2005).

In this paper, we extend the approaches that have been used to investigate themata by combining Multi-Dimensional Scaling (MDS) with Hierarchal Cluster Analysis (HCA) and deductive reasoning; putting theorising into practice by methodologically reversing the process of how themata are posited to manifest in content. We draw from Moscovici (2011) who states that themata drive the content and structure of a representation through the process of anchoring[7] that is, themata take form or become *anchored content* through the process of being embedded into an

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[7] As one of the two basic and intricately linked processes of representation, anchoring classifies unfamiliar ideas, objects into an already existing network of meanings, symbols and images (Moscovici, 1993; 1984).

existing network of meanings, symbols and images. Whilst themata have been identified through deductive reasoning (e.g. see Markova, 2003), we propose that the anchored content that constitutes the figurative kernel is first identified and then the content is "stripped away"[8] to reveal, by deduction, what must be the generative potential content (see Moscovici 1993, p. 4).

Blood donation as a social representation

Blood Collection Agencies (BCAs) must be responsive to the changing demand for blood and blood products driven by the interaction of rapidly expanding medical technologies, life-saving procedures, and changes in population (Caulfield, 2013), as well as the unpredictability of social and natural disasters (Abolghasemi, 2008; Kuruppu, 2010; Tran, Lewalski, Dwyre, Hagar, Beckett, Janatpour & Holland, 2010). In Australia, where blood donation is voluntary, non-remunerated and the only source[9] of whole blood and blood products, the relationship between supply and demand is exacerbated by the shelf-life of certain blood products, low numbers of people who donate (3% of the eligible population: ARCBS, 2012), and the high numbers of donors who choose not to return (60% of first time donors do not return: ARCBS, 2008).

Although the blood donation is a medical procedure, the decision to donate blood is not. Blood has always conveyed symbolical meaning. Dating back at least two thousand years, blood has figuratively and metaphorically symbolised emotions, ancestral ties, unbreakable bonds, life, passion, death and sacrifice (Charbonneau & Tran, 2013; Ferber, 1999; Simó, 2011). It is only recently that blood has been conceptualised as a product, as components, and as transfusible[10],

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[8] Moscovici 1993 uses the phrase "do away"

[9] While this is most often the case, there are some instances where plasma is imported (Flood, et al., 2006)

[10] However, we note in LeFrère and Dunic Danic (2009) that one of the earliest images of transfusion is dated 1635, a xenotransfusion with a sheep donor. Although some of the early imagery associated with transfusion has a religious connotation, it could also be argued that the commodification of blood has a history predating 1900's.

reflecting the revolutionising of medicine through scientific and medical discoveries in the early 1900s (Flood, Wills, Lawler, Ryan, Rickard, 2006). We argue what is understood about blood donation by Donors, Non-donors and Potential donors is most likely to encompass both medical and non-medical understandings of blood donation (*cf* Farr & Marková, 1995) concurring with Healy (2006) who states that the donation of blood is "a mingling of metaphor with reality [where blood donation] always has the potential to be more than a simple transfer of products (p.2)". We use the concept of themata to explore this.

Previously, Moloney and colleagues (2012) posited that the self/other thema underpinned how blood donation was socially understood in a small regional area of New South Wales (NSW) Australia. Using a word association task, elicitations from 258 participants revealed a robust, clearly defined representational field comprised of both positively and negatively orientated elicitations (e.g. *helping, needles)*[11]. Further analysis revealed that the high frequency elicitations fell into three distinct clusters[12] which, in line with Guimelli (1998), were conceptualised, as normative (helping, saving lives), functional (needles, pain, anxiety) and descriptive (accidents, hospital, Red Cross), suggesting a heterogeneous representational field. It was also suggested that the figurative kernel was likely to be a symbolic image that, in a "linear, rational" sense, was incongruous or fragmented: encapsulating both the giving and receiving of blood.

In this current paper, we investigate further the figurative kernel associated with blood donation and the thema/themata that might drive it through an analysis of word association data

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[11] Initial analyses converted the homogenised associations into frequency magnitude. Frequency magnitude is a percentage figure that relates the frequency value of the number of elicitations for each word category to the number of elicitations in the data set. High frequency elicitations were used to construct scale items that were then used to asked participants the extent they thought of this word when they thought about blood donation (see Moloney, et al., 2012).

[12] Principal Components Analysis (PCA) revealed three factors identified as normative, functional, and descriptive (see Moloney, et al., 2012).

from a more diverse and larger sample than the 2012 study (Moloney et al., 2012). We extend previous research that has investigated themata (see: Callagan et al., 2012; Castro & Gnomes, 2005; Foster, 2006; Liu, 2004; Moloney et al., 2005; Moloney et al., 2013; Moscovici, 2011; Smith & Joffe, 2012) by employing a two-step analysis where the figurative kernel of the representation is first identified, and then from this we deduce what the thema/themata might be.

Participants

A total of 1080 participants completed the word association task; 30% self-identified as male and 64% as female[13]. Age ranged from 18 to 88 years (M=49.71, SD=14.78 years). In relation to current blood donation status, 57% reported they had donated blood, 20% that they were ineligible to donate blood, 7% that they were temporarily deferred from donation, and 12% that they had never donated blood[14]. An email invitation was sent to a random sample of blood donors registered with the Australian Red Cross Blood Service and members of seven participating interest groups. The interest groups were invited to participate based on their broad memberships reaching into both rural and regional NSW. [15]

Procedure

The word association task was positioned at the start of the online survey[16]. Participants were asked to type the first words that sprung to mind when they thought about blood donation, in the seven spaces provided.

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[13] The remaining 6% did not identify themselves as either male or female.

[14] 4% did not report any blood donation status.

[15] Lead members of community organisations in NSW were contacted first by phone and asked whether their organisation would like to participate. Once they agreed to participate, the lead member was sent an email invitation with an embedded link which they then forwarded on to their members.

[16] Please contact first author for further details about the online survey.

RESULTS

A total of 4,495 associations were generated. The associations were cleaned[17] and homogenised into word categories. In order to preserve the integrity of the data, elicitations were categorised using the criterion of a common root word (e.g. *helps, help* were categorised under the word category, *helping*). Word category frequency was converted to frequency magnitude[18] which allowed comparisons to be made between the different donor groups (see Figures 1, 2 & 3).
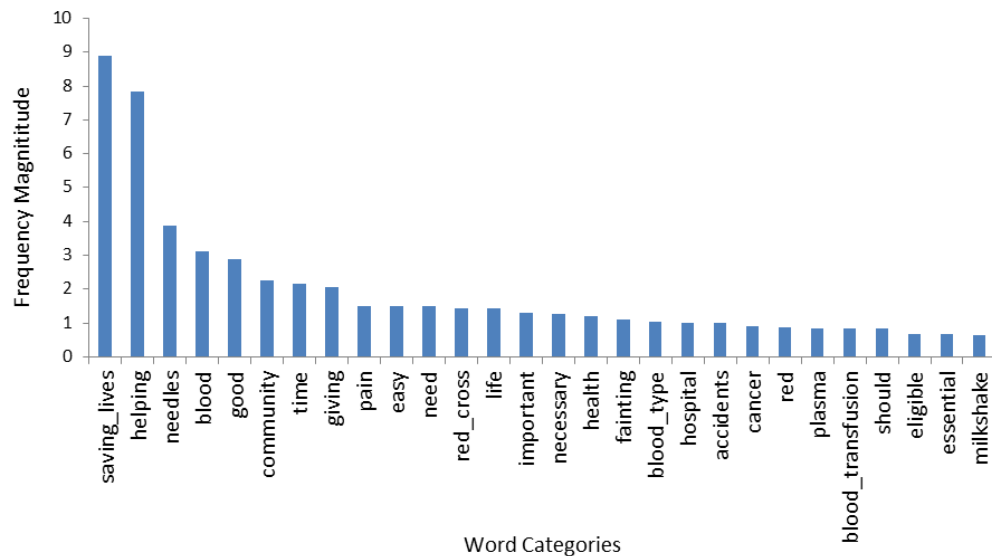

Figure 1. Histogram of the word categories by all participants.

Figure 1 shows the frequency of the word categories elicited to the stimulus word *Blood Donation* across all participants. As shown, *saving lives* and *helping* were the most frequent, followed by

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[17] Cleaned refers to the preparation of the associations for homogenisation. Capital letters are removed, and spaces between words are replaced by a hyphen allowing the words to be processed by the software programme (GWTEA, Moloney & Blair, 2010).

[18] Frequency magnitude is a percentage figure that relates the frequency value of the number of elicitations for each word category to the number of elicitations in the data set. Frequency magnitude = 100 / Sum of all frequencies in data set * Raw frequency of term.

needles and *blood*. *Saving lives* and *helping* were also the most frequently occurring elicitations in the first responses that all participants gave.
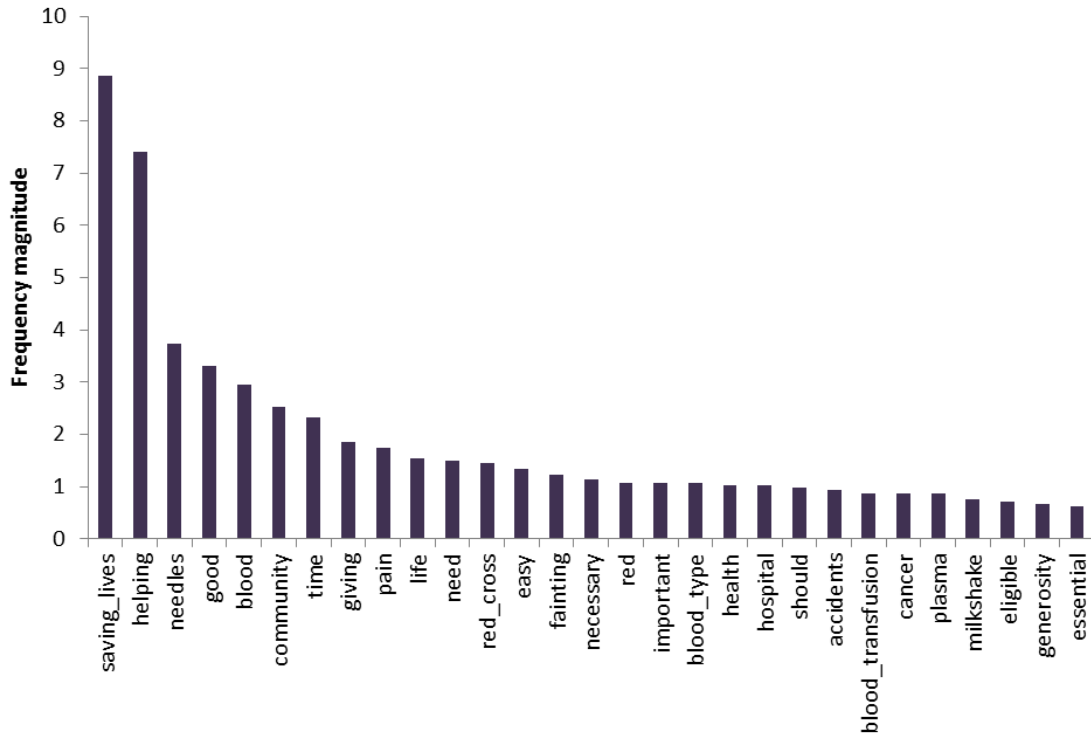

Figure 2. Histogram of most frequently occurring word categories by Donors

Figures 2 and 3 give the elicitations by Donors and Non-donors. The pattern of elicitations for Donors and Non-donors is similar particularly in relation to the most frequently occurring elicitations (*saving lives*, *helping, needles).*
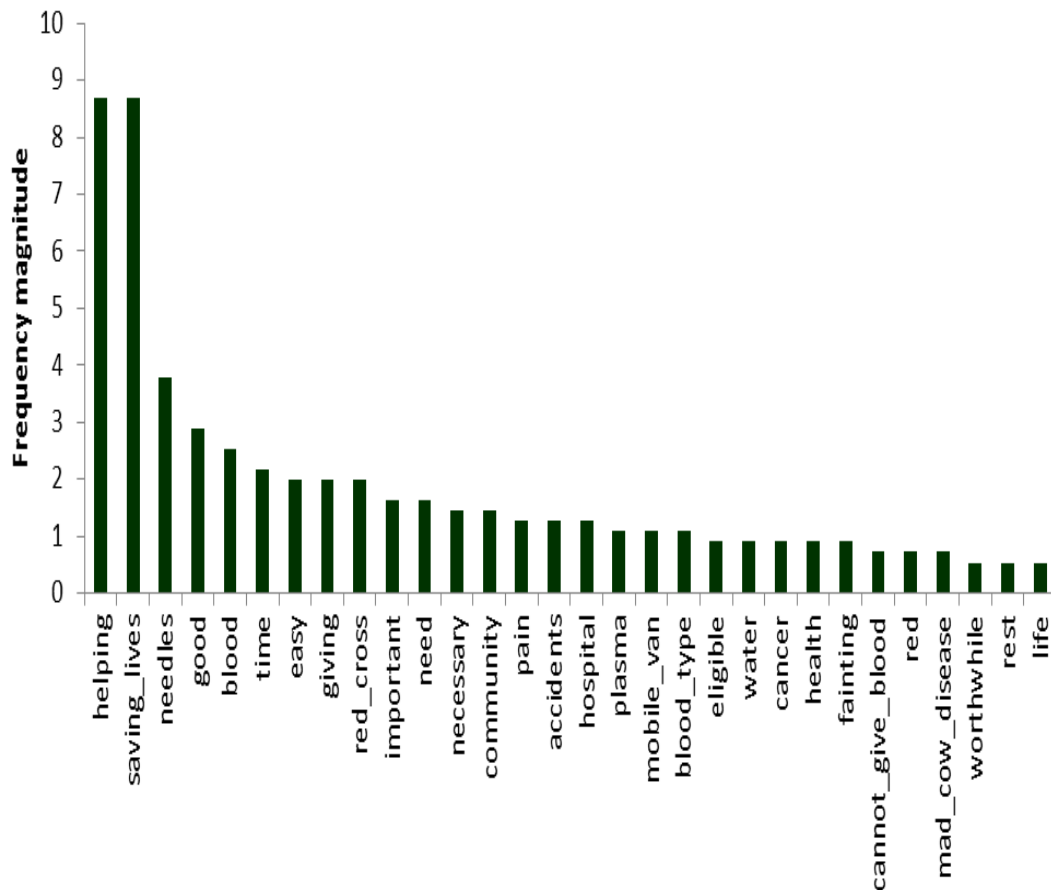
Figure 3. Histogram of most frequently occurring word categories by Non-donors

Themata underpin the core notion or beliefs of a representation (Moscovici, 2001), hence our interest was in the words that consistently co-occurred in each participant's responses, as an indication of the semantic sub-structure associated with the issue (Wagner, Valencia, & Elejabarrieta, 1996). In order to investigate this, we calculated a 28 x 28 co-occurrence matrix[19] for the 28 most frequently occurring word categories. The co-occurrence matrix represented the frequency with which each word category co-occurred with every other word category in the matrix (and the frequency across the data set with which each word co-occurred with every other word in

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[19] The diagonal represented the absolute frequency of each word.

a each participant's responses). The co-occurrence matrix was then subject to Multidimensional Scaling (MDS)[20] with a Hierarchical Cluster Analysis (HCA) performed over the 4 dimensional co-ordinates that emerged as the best fit (as suggested by Kruskal & Wish, 1990: see also Spini, 2002).
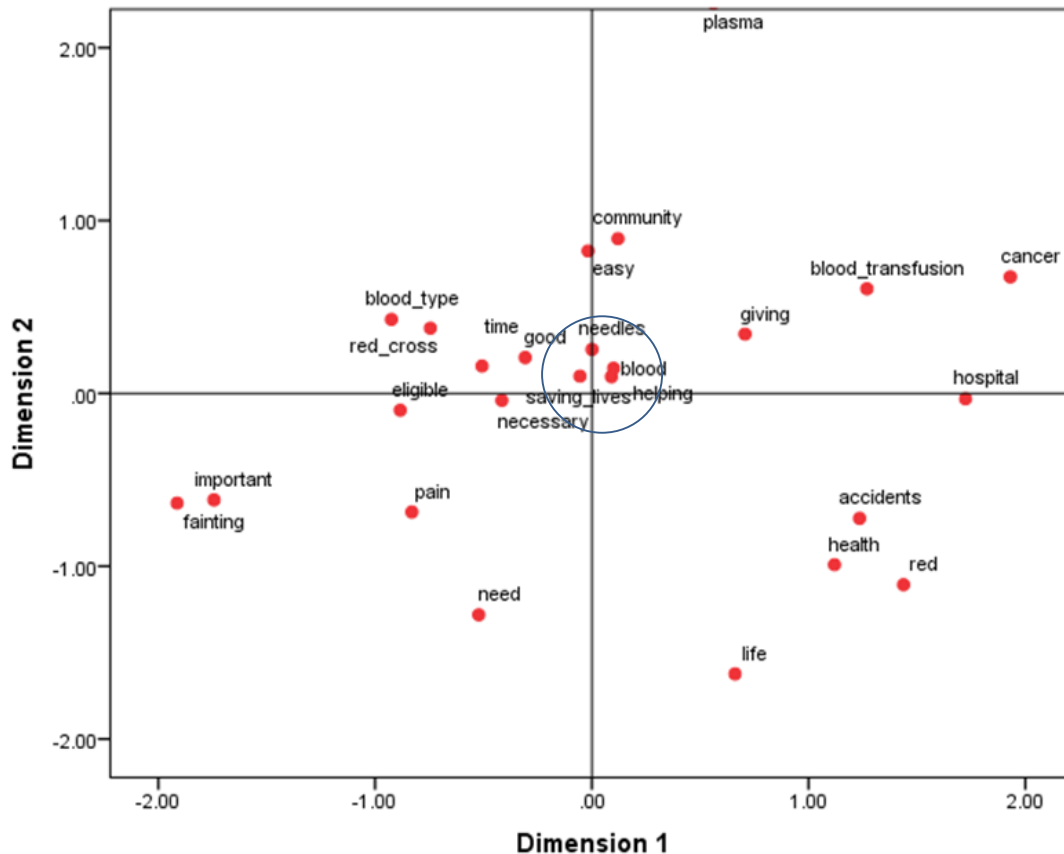

Figure 4. Dimension 1 and 2 of the 4 dimensional MDS solution for all participants' elicitations to *Blood Donation*. Stress = .125, RSQ = 835. HCA ellipse shows word categories *saving lives, helping, needles* and *blood* cluster together.

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[20] ALSCAL IBM SPSS 22, the data were entered as ordinal.

The MDS solution in conjunction with the HCA revealed the centrality of *helping*, *needles*, *blood* [21]and *saving lives* to the other elicitations (shown in Figure 4 by the ellipse), suggesting that these ideas (word categories) define how blood donation is socially understood. It is also important to note that the elicitations given by each participant were often contradictory in affect, that is some elicitations were negative while others were positive (e.g. *saving lives* and *helping* frequently co-occurred with *needles*). The semantic relationship of the word categories to each other also reiterates what is shown in Figures 2 and 3 that is, the more *negative*[22] word categories (*needles, pain* and *fainting*) were not elicited by a particular donor status, rather both negative and positive elicitations were given by both donor groups (Donors and Non-donors).

Discerning themata

Themata are not always discernable from discourse. As latent drivers of social knowledge (Smith & Joffe, 2012), they may be presumed but not spelt out in communication (Moscovici, 2001). In order to identify the thema/themata that underpin how blood donation was socially understood, we first identified the figurative kernel associated with blood donation.

In line with previous research (Moddie, Marková & Plichtova, 1995; Purkhart & Stockdate 1993; Spini, 2002), a similarity matrix of co-occurrences was constructed, which was then subjected to Multidimensional Scaling (MDS) and Hierarchal Cluster Analysis.

We categorised the associations made by 1078 respondents to the words, "*blood donation*", using the presence of the same root word as a criterion for inclusion into a word category. We conceptualised the word categories (and their co-occurrence with each other) as anchored content;

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[21] As blood was part of the stimulus phrase, the centrality of the word is debatable (see Moscovici, 2001).
[22] See Bartel, Stelzner, & Higgins (1975); France et al., (2013); Sojka & Sojka, (2008) for negative perceptions/fear of needles and pain associate with blood donation.

albeit stripped of the syntax and morphology of more organised discourse (Marková, 1996). Moreover, in contrast to discourse, where communicability relies on sense making (Joffe, 2002), there was no expectation that any one participant's elicitations would be coherent - which is what we found.

In theorising why participant's elicitations might not be coherent, we posit that elicitations (in relation to blood donation) similar in affect, such as: *helping, saving lives, good* (positive) and *needles, pain, anxiety* (negative) would be indicative of pairs or multiple representations associated with the blood donation, whilst elicitations dissimilar in affect such as *helping* (positive)*, needles* (negative) would be indicative of a heterogeneous representation field.

Our data suggested that *helping, saving lives, needles* were central to, and constitute the figurative kernel or symbolic image associated with, blood donation – this is what sprung to mind when respondents thought about blood donation. Interestingly, these same associations emerged in a previous study (Moloney et al., 2012) elicited from a very different sample some three years ago. In the 2012 study, the dominant elicitations were also *helping, needles,* and *life-saving*; suggesting the figurative kernel is comprised of both the negative and positive aspects associated with blood donation.

Deducing themata

In order to determine what the thema/themata might be, we deductively "stripped away" the anchored content (Moscovici, 1993) from the figurative kernel (*helping, saving lives & needles)* that defines the representation; and suggest the generative potential is the basic thema Self/Other. Blood donation in relation to Self, manifests as *needles (pain, anxiety)* whilst blood donation in relation to Other, manifests as *helping* and *saving lives*.

The irony of voluntary unremunerated blood donation is that it can never be a "simple transfer of products" (Healy, 2006, p.2). Articulated through the thema of Self/Other, the symbolic nature of this "simple transfer of products' manifests in a heterogeneous, contradictory and often fragmented representational field, differentially accessed depending on the salience of the social context. When blood donation is considered in relation to Self, those aspects salient to the Self are elicited. Conversely when blood donation is considered in relation to Others, aspects salient to Others are elicited. On the one hand the simple transfer of products is socially understood to save lives and help people whilst on the other hand, it is seen as a procedure involving needles, and possibly pain and anxiety. The social context in which blood donation is considered, differentially activating the salience of one aspect over the other.

Antimonies as a pair

 The question of whether each of the antimonies in a thema gives rise to separate representations or whether it is as a pair that antimonies generate a representation, can be referenced to the figurative kernel. If the figurative kernel encapsulates both positive and negative aspects associated with blood donation, then it follows that these positive and negative aspects are articulated through a pair of antimonies - not each antimony. If it were the latter, the figurative kernel would comprise either the positive or negative aspects associated with blood donation - but not both.

We suggest that it is as a pair of mutually independent antimonies that the thema Self/Other generates the positive and negative aspects associated with blood donation, manifesting in the figurative kennel as *helping*, *needles* and *saving live*s. Specifically, we postulate that it is the tension between the antimonies that manifests as *the paradox* of donation behaviour; where the

majority of Australians agree that blood donation is worthwhile, while only 3% of those eligible to donate in Australia actually do (ARCBS, 2012).

Using themata to understand blood donation behaviour

Currently many communications seeking to encourage the public to donate blood are tailored to the Other – that is, the message is frequently around the idea that blood donation helps people, saves lives and is worthwhile. Of note, however, is that these messages quietly ignore aspects of blood donation that relate to the Self – the fear of needles, the blood, anxiety and perception of pain. Our findings suggest that Donors and Non-donors alike associate blood donation with both the positive and negative aspects - *saving lives*, *helping*, as well *as needles*, and *the perception of pain*. In line with Marková (2000), we suggest that the antinomies in a thema are interdependent, and that it is the tension between antinomies that drives how blood donation is socially understood (Moloney et al., 2012). Thus, we argue that communications to the public about blood donation should acknowledge *both* aspects associated with blood donation that is, - the *Self* and the *Other*. We strongly suggest that Blood Collection Agencies carry out further research to investigate the utility of tailoring strategies and communications to increase blood donation rates around the figurative kernel of how blood donation is socially understood.

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