Meme Maps: A Tool for Configuring Memes in Time and Space

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Abstract

This paper presents an elegant method for visually representing the life and times of a meme, an element of cultural transmission. The elements of a Meme Map are described, and the steps for constructing a generic Meme Map are listed. A worked example of a Meme Map is provided. A Meme Map is a powerful and flexible tool for capturing, displaying and sharing memetic information - illustrating the time and space propinquity of Meme Events - yet it is easy to learn and simple to apply. Meme Maps can readily be drawn on "the back on an envelope", or they can be professionally produced using any standard drawing package on a computer.

Keywords: Memes, memetics, memeticists, map, mapping, diagram, figure, illustration, diffusion, Richard Dawkins.

1. Introduction

The concept of a "meme" as an element of cultural transmission is a compelling idea proposed by Richard Dawkins (1976, ch.11). A decade later Dawkins observed that "The word meme seems to be turning out to be a good meme" (1989, p.322). A further decade elapsed and Dawkins corroborated his prior observation by reporting "half a million" mentions of *meme*, and 5042 mentions of *memetic* on the World Wide Web (Dawkins, 1999, p.viii). A recent search of these same terms returned 343 million hits for *meme*, and 535,000 for *memetic* (Google, 2009a; 2009b).

The short history of the "meme" meme has nevertheless been somewhat fraught. The *Journal of Memetics* was launched with its first edition of May 1997 (Edmonds, 1997). The final edition appeared in 2005 (JOM, 2005). In that interval, Dawkins introduced the new prescription that "A meme should be regarded as a unit of information residing in the brain", and he distinguished that brain-residing entity from what is otherwise observed, namely their "phenotypic effects" or "meme products" (Dawkins, 1983, p.109). The original formulation of a meme as "an element of cultural transmission" has been dubbed "Dawkins A", and the reformulation of a meme as an in-brain entity as "Dawkins B" (Gatherer, 1998, p.135 passim). It seems that the revised formulation has not induced any contingent of brain anatomists to seek out memes in the tissue or interstices of brains of either the living or the dead. Gatherer concludes that "Dawkins A is better than Dawkins B" (p. 135). The present paper adopts the former, and more generally accepted, account of a meme as an element of cultural transmission - without restriction on where it might be residing. For those inclined to a Dawkins B viewpoint, the memes referred to herein, including in the worked example, should be read as meme "phenotypic effects".

Memetics remains an immature discourse which is potentially valuable for considering the diffusion of elements of culture and the underlying evolution, dissemination and "natural history" of those elements.

While there have been attempts to elaborate theories and mathematical models, and several bibliographies of memetics have been published (e.g. Gabora, 1997; Gross, nd), no papers, nor Susan Blackmore's (1999) overview of memetics, have proposed or presented a meme mapping approach, or other generic technique for illustrating memes, including their temporal and/or spatial aspects.

The present paper proposes to do for memes what Venn diagrams (Venn, 1880) have done for sets. The paper presents how to construct a Meme Map and use it as a visual tool for configuring "the life and times" of a meme - of presenting the diffusion of a meme through time and space.
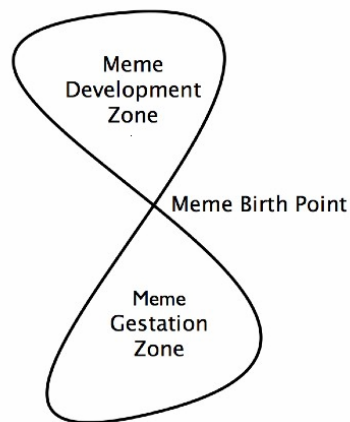
Meme Maps are presented as a practical tool for the display of a meme's gestation, birth and development. This tool passes the "napkin test" or "back-of-the-envelope" test in that Meme Maps, like Venn diagrams, can be drawn and developed free-hand. Alternatively any computer graphics package can be used to easily create a useful as well as a professional-looking Meme Map.

2. Elements of a Meme Map

A Meme Map relies on a framework of a figure-8 diagram. Figures thus shaped include lemniscate figures (e.g. $y^4 = a^2(y^2-x^2)$) and analemmas, however for the purposes of creating a Meme Map any figure-8 type diagram will suffice.

A Meme Map consists of two joined loops; the lower loop represents the Meme Gestation Zone (MGZ), the upper loop represents the Meme Development Zone (MDZ), and the cross-over point represents the Meme Birth Point (MBP) (Fig.1). The figure-8 is merely the frame or the scaffolding for the Meme Map, and there is no requirement that the figure-8 be symmetric, nor that the upper and lower loops are equal in size and/or shape.

Figure 1: The framework of a Meme Map, with the Meme Development Zone, Meme Gestation Zone, and the Meme Birth Point indicated.
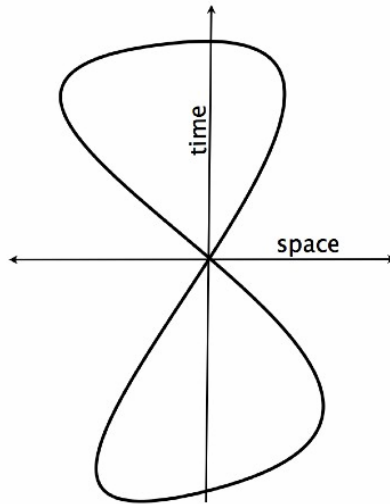

Two orthogonal ordinal axes, (non-parametric Cartesian co-ordinates), of time and space, can be imposed on the Meme Map, with "ground zero" at the Meme Birth Point (Fig.2). The y-axis is an ordinal time axis (an ordered timeline without a scale). Events are *ranked* as closer or further away on the time dimension, relative to the Meme Birth Point (rather than being *positioned* in time). The x-axis is an ordinal space axis (an ordered space-line without a scale). Events are ranked as closer or further away on a spatial dimension, relative to the Meme Birth Point. For example, for three events ordered *A,B,C* along the time axis, A would represent an event closer in time to event *B* than to event *C*. Similarly, for three events ordered *A,B,C* across the space axis (Fig.2), *A* would represent an event closer, geographically, to event B than to event *C*. The single spatial dimension is not intended for the

capture of GPS-type data, it does constrain the author of the Meme Map to represent space data, for the purposes of the map, in an ordinal way and on a single dimension.

A Meme Event is an event pertaining to the meme. The Meme Birth Event is the event, preferably identified in time and space, of the first occurrence of the meme.
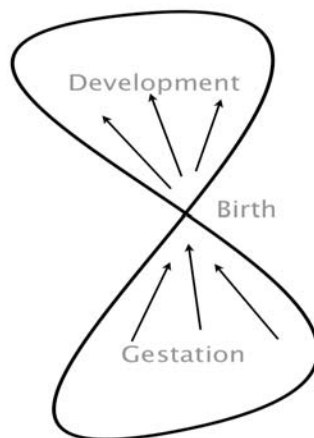
For the purposes of the Meme Map, Meme Events of interest in the Development Zone will often be signal events, sentinel events, milestones in the life of the meme, including but not limited to seminal events, primacy events, diffusion events, and events of interest in the evolution of the meme. Examples might include: the first use of the meme in a book or journal title, the earliest use in a country or language, an extension of the usage of the meme, or even challenges to the meme.

Figure 2: The framework of a Meme Map with superimposed orthogonal ordinal axes of time and space.

Meme Events in the Meme Gestational Zone may be significant, seminal or precursor events pertaining to the forthcoming meme. These will be events that are identified to have led to, or precipitated, or anticipated in some way, the forthcoming Meme Birth Event. The allocation of Meme Events in the Meme Gestational Zone is, of necessity, a *post hoc* exercise.

Figure 3: A Meme Map can be read from south to north as a biography of the meme.
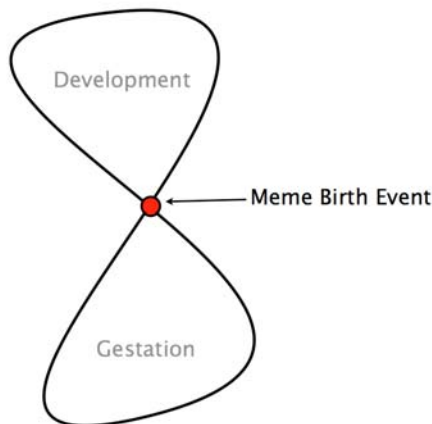

Once a Meme Map is populated with Meme Events the map can be read from south to north as a chronological biography of the meme (Fig.3). In the event that there is a surfeit of known events, it is the author of the Meme Map who selects the Events to map, according to the purpose of the exercise, as is the case with any biography.

Meme Events can be represented on a Meme Map by points or dots or some other graphic device of the map author's choosing. In this paper Meme events will be represented by dots throughout.
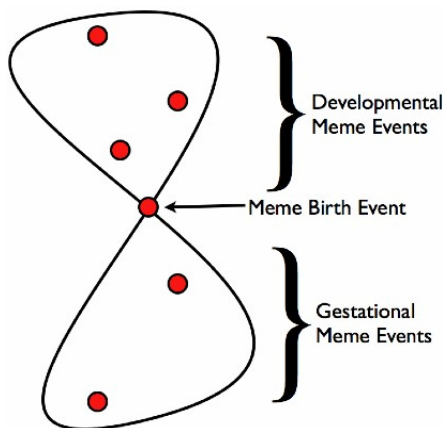
The Meme Birth Event (Fig.4) can be expected to be the key to reading and understanding the flow of the meme; it serves as the anchoring point in time and space for the meme, and is the reference point for all other Meme Events.

Figure 4: The Meme Birth Event sits at the "choke point" of the figure-8.

A Meme Map will always have a single Meme Event mapped onto the choke point of the figure-8 diagram. All other meme events will be mapped into the Development Zone or the Gestation Zone (Fig 1). The choke point represents the time and place of the creation of the meme, i.e. the first occurrence of the meme. The Meme Map can then be populated with gestational and developmental Meme Events (Fig.5).

Figure 5: The Meme Map is populated with gestational and developmental Meme Events.

The North/South Axis of the figure-8 represents elapsed time in the life of the meme. The East/West axis represents space in the life of the meme (Fig. 2). The Meme Map is a non-parametric entity. There is no scale, Meme Maps are not scalar diagrams and hence there can be no issue of them being "drawn to scale". The axes are not vectors (they do not represent a scale plus a direction) they only represent a direction. Thus a more "southerly" Meme Event will always be an event earlier in time than a more northerly event. (Fig 3). Since these are non-scalar diagrams, equi-distances on a dimension do not represent equi-times or equi-metrics of space.

The boundary of the Meme Map serves the same function as the boundary of a Venn diagram. Events are inside or outside the meme space of the Meme Map. There are two frontiers of the Meme Map, the leading frontier, (the North frontier), and the trailing frontier, (the South Frontier). As with

elements of any map, Meme Events may exhibit an amount of fuzziness, an amount of uncertainty. Events can be placed with certainty where certainty exists, and with tentativeness otherwise. A map, including any Meme Map, is a living document, a work-in-progress, and as the territory is better understood, or the purpose of the map changes, so the map can be revised and refined.

3. Steps in Creating a Meme Map

   i)   Identify the Meme Birth Event, Meme Developmental Events, and Meme Gestational Events of interest.
   ii) Draw a figure-8 diagram (the skeleton/framework/scaffolding).
   iii) Place the Meme Birth Event at the choke point.
   iv) Populate the Meme Gestational Zone and the Meme Development Zone with Meme Events.
        The Meme Map will ultimately be a function of the choice of the meme and/or the Meme Birth Event.

4. Worked Example of a Meme Map: The Organic Meme

A meme can be a dance, a tune, an image, a phrase, or a word. For this example I am choosing the word "organic" as it is used in organic food, organic farming, organic fibres etc., to mean produced without synthetic fertilizers or pesticides.

There have been perhaps ten millennia of agricultural practice, and it might be argued that this is 10,000 years of *de facto* organic farming. However it has been the twentieth century developments of synthetic fertilizers and pesticides that have provided the agricultural milieu for differentiating "organic agriculture" from "chemical agriculture". This distinction of "organic versus chemical farming" was made in a 1940 book *Look to the Land* written by Lord Northbourne, and this book presents the first identified usage of the term "organic farming" (Paull, 2006b). That *organic* meme has, since that coinage, extended its reach beyond *farming* to partner with gardening, food, associations, periodicals, the movement, standards, fibres and many others. The *organic* meme has developed to be the defining element of a food and fibre sector that is now valued at US$46 billion (Organic Monitor, 2009).
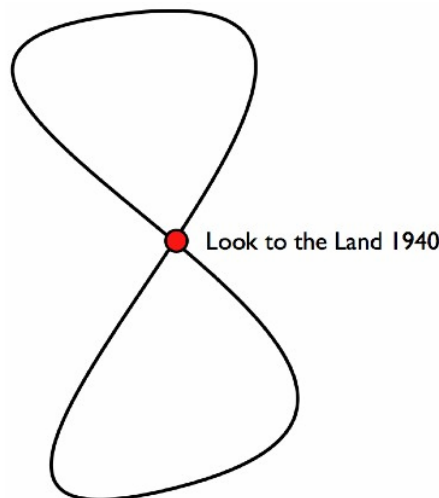
The first step in creating a Meme Map is to make a list of Meme Events (Table.1) which includes the Meme Birth Event and selected precursor and developmental events, i.e. Meme Gestational Events and Meme Developmental Events. A chronological listing will facilitate mapping.

Table 1: A chronological listing of selected "organic " Meme Events.

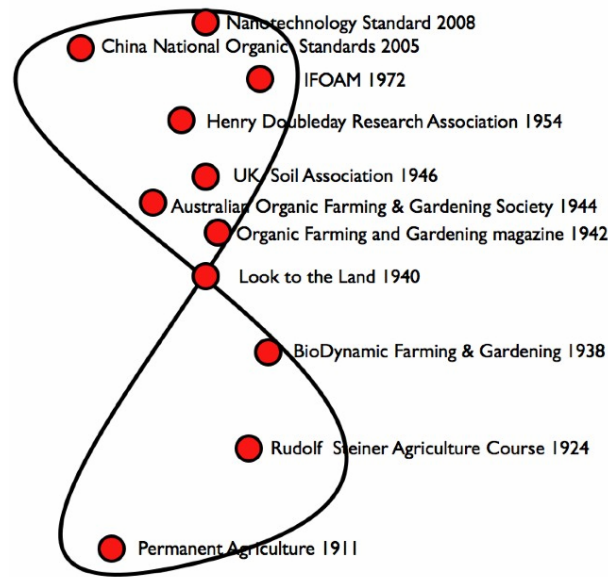| Date	Selected Meme Events	Event Type
1911	*Farmers of Forty Centuries* published (King, 1911; Paull, 2006a)	Gestation Event
1924	*Agriculture Course* by Rudolf Steiner (Steiner, 1924)	Gestation Event
1938	*Bio-Dynamic Farming and Gardening* published (Pfeiffer, 1938)	Gestation Event
1940	"organic farming" coined in *Look to the Land* published (Northbourne, 1940)	Birth Event
1942	*Organic Farming and Gardening* magazine (Rodale, 1942)	Development Event
1944	*Australian Organic Farming and Gardening Society* founded (Paull, 2008b)	Development Event
1946	UK *Soil Association* founded (Douglas, 1946, p.1)	Development Event
1947	*The Farmer* adds "Organic Husbandry" to masthead (Paull, 2009, p.17)	Development Event
1954	*Henry Doubleday Research Association* (Hills, 1989, p.98)	Development Event
1972	*International Federation of Organic Agriculture Movements* (IFOAM) founded (Besson & Vogtmann, 1978, p.241)	Development Event
2005	*China National Organic Standards* proclaimed (Paull, 2008a, p.8)	Development Event
2008	Nanotechnology Standard for Organics (Paull & Lyons, 2008)	Development Event

The second step is to draw a figure-8 (Fig.1). The third step is to place the Meme Birth Event (Fig.6).

Figure 6: Meme Map with Meme Birth Event mapped.

The fourth and final step is to place the Gestational and Developmental Meme Events (Fig.7).

Figure 7: Meme Map for the *Organic* meme, populated with selected Meme Events.

5. Comments and Conclusion

A Meme Map is a tool and a visual aid. Any meme is amenable to meme mapping and such a visual presentation can potentially lead to fresh insights into a meme's travels through time and space. By visually expressing the proxemics, a Meme Map reveals the propinquity of Meme Events, and can effectively illustrate known relationships, suggest new relationships, and invite new enquiries.

Any map, including any Meme Map, is a work in progress, modifiable in the light of unfolding knowledge, new understandings, and new perspectives, as new items of interest are revealed. It has been pointed out that "Studying the past is not possible: it is no longer there" (Vincent, 2005, p.9). We rely on "fallible evidence" which is "interpreted by fallible people", and so "no question of finality can ever arise" (Vincent, 2005, p.9). History is always incomplete, but although it is never definitive, it can be indicative.

The map is not the territory. A map can inform a discourse, and facilitate an understanding of a territory, a domain of interest, and that is just because much of the forest of information is, of necessity, discarded in the process of map making so that some of the trees can be better revealed. Meme Maps are commended to the reader as a ready tool for memetics and memeticists, for visualizing what has heretofore lacked a medium of imagery.

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