

A Study on the Impact of Personal Beliefs on Self-Love Using Super Fuzzy Relational Maps Model

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Abstract: -

Fuzzy Relational Maps are used in the qualitative study of finding the relationship between disjoint sets of concepts where unsupervised data is involved. Super Fuzzy Relational Map is an extension of Fuzzy Relational Map that is best suited for multi-expert problems. This model is an adaptation of combined knowledge of fuzzy sets and neural network. This relational model could be used whenever fine-tuning of concepts and their causal inference is required to arrive at a conclusion in a fuzzy environment. In human beings, the natural instinct to live amidst all the challenges of life has at its core 'self-love', which is the ability to accept, esteem and empower oneself. It is believed that self-beliefs determine the degree of self-love one experiences in their life. In this paper we make use of this tool to study the causal relationship between self-love and personal beliefs that influence a particular component of self-love.

Keywords: Super Fuzzy Relational Map, super matrix, limit point, self-love, selfishness, personal beliefs

I. Introduction

'Love your neighbours as you love yourself' is one of the basic principles of social living [1]. Loving oneself is a criterion required to love others and to live in communities. Many people, influenced by the western philosophy, are afraid of loving oneself unconditionally [3]. Theologians and philosophers preached that we are humans not for ourselves but for others. Hence, it was believed by the masses that loving others is a virtue and loving oneself is a vice [5]. Evidently, people mistook selfishness for self-love, and thus self-love lost its relevance in the religious rampage [2]. In this paper, we make an attempt to study the psychological constructs of self-love and selfishness and elicit the causal relationship between the beliefs and self-love.

The philosopher Rousseau believes that self-love is a natural sentiment, which inclines every animal to look to his own preservation and which guided in man by reason and qualified by pity is productive of humanity and virtue [4]. Further, he firmly asserts that self-love alone contributes to the mutual preservation of the whole species [9], [11]. Jean-Jacques Rousseau explains about two kinds of love for the self in his discourses: one is self-love and another selfishness. He also elucidates that self-love is natural and from it stems natural justice and all good and virtues related to it while selfishness comes

from comparison [9], [11]. In particular, too much of self-love makes the person selfish while no self-love or decreased measure of self-love leads to self-hate [6].

II. Super Matrix

The concept of Super Matrix was introduced by Paul Horst in his book, "Matrix Algebra for Social Scientists" [13]. A matrix whose elements are themselves matrices with entries that can be either scalars or other matrices is called a Super Matrix [13-15]. The elements of a super matrix are referred to as submatrices. Consider the following super matrix.

$$A = \begin{bmatrix} A_{11} & A_{12} & A_{13} & \cdots & A_{1n} \\ A_{21} & A_{22} & A_{23} & \cdots & A_{2n} \\ A_{31} & A_{32} & A_{33} & \cdots & A_{3n} \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ A_{m1} & A_{m2} & A_{m3} & \cdots & A_{mn} \end{bmatrix}$$

where A_{ij} ($1 \leq i \leq m, 1 \leq j \leq n$) is a submatrix of some order. The number of rows in each $A_{i1}, A_{i2}, A_{i3}, \dots, A_{in}$ ($1 \leq i \leq m$) and columns in each $A_{1j}, A_{2j}, A_{3j}, \dots, A_{mj}$ ($1 \leq j \leq n$) are equal. The order of each submatrix contributes to that of the super matrix. The height of a super matrix is the total number of rows of submatrices while the width of the super matrix is the number of columns of submatrices in it.

W.B. Vasantha Kandasamy adapted this idea of super

matrix to construct fuzzy super matrices that are useful in building several relational models in the work published in 2007 [13]. Developing proper approach to represent a complex system that is fuzzy and imprecise is the motivation behind the search for methods and techniques. The super fuzzy matrices are efficient in capturing the vagueness and ambiguity of the complex systems. The super fuzzy matrix is the generalisation of super matrix with each elements value is from [0,1] or [-1,1].

III. Super Fuzzy Relational Map

Super FRM is analogous to FRM model except that the relational matrix in Super FRM is a super matrix while it would be a simple matrix in FRM. The super FRM is one of the easy-to-handle fuzzy models that could describe the complex and causal relationship between two disjoint sets of concepts just like FRMs. The advantage of super FRMs over simple FRMs is that an expert can use different sets of attributes or different experts can use different sets of attributes for the same problem. Here, an expert can have ‘M’ sets of opinions and another expert can have ‘N’ sets of opinions and still work with same concepts [10, 13-15].

IV. Description of the Problem

The typical makeup of genes is designed to preserve and sustain life [4]. The child’s first sentiment is self-love, his second, which is derived from it is love of those about him [9]. In order to exist and subsist on this planet

as rational human beings one needs to be strong in self-love [7-8]. The set of beliefs an individual holds about oneself and others is the only source self-love which eventually results in love for others [16]. In this paper, the psychological construct of self-love and the causal relationship between self-beliefs and self-love are discussed. The human belief system and self-love construct are two separate systems wherein a high level of uncertainty is involved. Also, both the belief system and the self-love construct are diverse concepts that are perceived very differently by individuals. Therefore, the multi-expert model Super FRM model is adapted to study the causal association between these two disjoint systems.

Self-love is not a single entity that can be located effortlessly within the frame of life as a behaviour, feature or trait. But it is an all-encompassing psychological structure of goodness, personal wellness, optimism, understanding, acceptance, worth and motivation [7]. Self-awareness, self-acceptance, self-compassion, self-confidence, self-empowerment, self-worth and self-esteem are some of the components of self-love taken from the literature for this study. Each component of self-love can further be fine-tuned by adding the corresponding characteristics of positive and negative beliefs. Table-1 displays the different components of self-love that are studied for a while in the field of research and their corresponding characteristics pertaining to self-love and selfishness.

Sl.No	Components	Label	Self-love (S_i^{1j})	Label	Selfishness (S_i^{2j})
1	Self-awareness	S_1^{11}	Mindfulness	S_1^{21}	Unconsciousness
		S_1^{12}	Knowledge of Strength/Weakness	S_1^{22}	Inferiority/superiority complexes
		S_1^{13}	Emotional intelligence	S_1^{23}	Emotional reasoning
		S_1^{14}	Honesty/Genuineness	S_1^{24}	Manipulative
		S_1^{15}	Wisdom	S_1^{25}	Ignorance
2	Self-acceptance	S_2^{11}	Responsibility	S_2^{21}	Blaming and deflecting
		S_2^{12}	Optimism	S_2^{22}	Pessimism
		S_2^{13}	Contentment	S_2^{23}	Ingratitude
		S_2^{14}	Comfortable in own skin	S_2^{24}	False image projection
3	Self-compassion	S_3^{11}	Forgiving	S_3^{21}	Feeling guilty and shameful
		S_3^{12}	Mercifulness	S_3^{22}	Holding grudges
		S_3^{13}	Empathy	S_3^{23}	Indifference/apathy

		S_3^{14}	Equanimity/ Serenity	S_3^{24}	Agitated
4	Self-confidence	S_4^{11}	Assertiveness	S_4^{21}	Aggressiveness
		S_4^{12}	Independency	S_4^{22}	Attention seeking
		S_4^{13}	Courage to fail	S_4^{23}	Afraid of failure
		S_4^{14}	Ability to handle criticism	S_4^{24}	Inability to take criticism
5	Self-empowerment	S_5^{11}	Focussed on strengths	S_5^{21}	Craving to be the best
		S_5^{12}	Open-mindedness	S_5^{22}	Living in a fantasy world
		S_5^{13}	Enthusiasm	S_5^{23}	Conceited
6	Self-worth	S_6^{11}	Accurate self-evaluation	S_6^{21}	Lying and exaggeration
		S_6^{12}	Doing what is right	S_6^{22}	Perfectionism
		S_6^{13}	Self-care	S_6^{23}	Excessive self-importance
		S_6^{14}	Sense of accomplishment	S_6^{24}	Sense of entitlement
7	Self-esteem	S_7^{11}	Respectability	S_7^{21}	Domination
		S_7^{12}	Congeniality	S_7^{22}	Jealousy
		S_7^{13}	Cooperation	S_7^{23}	Competitiveness
		S_7^{14}	Effective Communication	S_7^{24}	Inability to communicate
		S_7^{15}	Healthy relationships	S_7^{25}	Difficult relationships

Table 1: Characteristics associated with self-love and selfishness

Be it self-love or selfishness, these are the external conditions that are characterised by certain marking features and what lies beneath all the explicit expressions is only the implicit self-beliefs. Based on the nature of the beliefs and self-views at the core of the person, s/he would be a self-loving or selfish person. On the basis of a

review of relevant literatures, seven belief domains are identified as particularly important in this study. Certainly, this is not an exhaustive list of domains or beliefs. The core beliefs, positive and negative, that are considered in this study relating to different belief domains are listed in table-2.

Sl. No	Domain	Labels	Positive Core Beliefs (B_i^{1j})	Labels	Negative Core Beliefs (B_i^{2j})
1	Survival	B_1^{11}	I can survive	B_1^{21}	I am in danger
		B_1^{12}	I am hopeful	B_1^{22}	I am hopeless
2	Security	B_2^{11}	I am safe	B_2^{21}	I feel threatened
		B_2^{12}	There is enough for everyone	B_2^{22}	I have to compete with others
3	Connection	B_3^{11}	All beings are born equal	B_3^{21}	I am better than others
		B_3^{12}	I am connected	B_3^{22}	I cannot trust others
4	Vulnerability	B_4^{11}	I can get through it	B_4^{21}	I cannot handle it
		B_4^{12}	I can protect myself	B_4^{22}	I am helpless

5	Judgement	B_5^{11}	I trust my judgement	B_5^{21}	I cannot think for myself
		B_5^{12}	I am rational and balanced	B_5^{22}	I always go wrong
6	Responsibility	B_6^{11}	I am good enough	B_6^{21}	I am worthless
		B_6^{12}	I am born for a purpose	B_6^{22}	I am a child of fate
7	Recognition	B_7^{11}	I am respectable	B_7^{21}	I am looked down upon
		B_7^{12}	I am lovable	B_7^{22}	I am insignificant

Table 2: Core-beliefs associated with domains of belief

The super relational mapping is drawn between the components of self-love and some essential domains of self-beliefs from the super relational matrix provided by the expert. The influence of each component of self-love on the dynamical system is studied and the limit points in each case is collected and the limit point matrix is obtained. From the reduced limit point matrix, the effect of each component of self-love on other components is studied.

In this study, the simple FRM is constructed with the help of experts that describes the causal relationship between core beliefs and their influence on different components of self-love. The experts were free to choose the sets of concepts they liked to work with. The simple fuzzy matrices provided by each expert is put together by the method of partitioning to form a super fuzzy matrix. A part of the super fuzzy matrix is displayed in table-3.

	B_1^1	B_1^2	B_2^1	B_2^2	B_3^1	B_3^2	B_4^1	B_4^2	B_5^1	B_5^2	B_6^1	B_6^2	B_7^1	B_7^2
S_1^{11}	1	1	-	-	1	1	-	-	1	1	-	-	1	0
S_1^{12}	0	1	0	-	1	1	-	-	0	0	0	0	1	1
S_1^{13}	1	1	-	-	1	0	-	-	0	0	-	0	0	0
S_1^{14}	1	1	0	0	0	0	0	0	0	0	0	0	1	1
S_1^{15}	1	1	-	-	1	1	-	-	1	1	-	-	1	1
S_1^{21}	1	1	1	1	1	-	1	1	1	1	1	1	1	1
S_1^{22}	1	1	1	0	0	-	1	1	-	-	0	0	0	0
S_1^{23}	1	1	1	1	-	-	1	1	-	-	1	1	1	1
S_1^{24}	1	1	1	1	-	-	1	1	1	1	1	1	0	0
S_1^{25}	1	0	1	1	0	-	1	1	1	1	1	1	1	1
S_2^{11}	1	1	-	-	0	0	0	0	0	0	0	0	1	0
S_2^{12}	1	1	-	-	1	1	-	-	0	0	1	-	1	1
S_2^{13}	1	1	-	-	1	1	-	-	0	0	1	0	0	1
S_2^{14}	1	1	-	-	1	1	-	-	1	1	-	-	0	0

S_2^{21}	-	-	1	1	-	-	1	1	-	0	1	1	-	-	1	1	0	0	0	0	0	0	1	1
	1	1			1	1			1	1			1	1			1	1			1	1		
S_2^{22}	-	-	1	1	-	-	1	1	0	0	1	1	-	-	1	1	-	-	1	1	-	-	1	1
	1	1			1	1			1	1			1	1			1	1			1	1		
S_2^{23}	1	-	0	1	-	-	1	1	-	-	1	1	0	0	-	0	-	-	1	1	1	0	1	1
			1	1			1	1			1	1			1	1			1	1			1	1
S_2^{24}	1	1	1	1	-	-	1	1	-	-	1	1	0	1	-	0	0	0	1	0	1	0	1	0
					1	1			1	1			1	1			1	1			1	1		

Table 3: A part of the super fuzzy matrix

V. Method of finding hidden pattern [13]

Step 1: Let M be the Super Fuzzy relational matrix of super order $m \times n$ given by an expert Each submatrix is opinions of different experts or different opinions of the same expert.

Step 2: We find the hidden pattern of the dynamical system when a particular attribute is in ON state and other states are in OFF state. The ON and OFF states are taken as 1 and 0 respectively.

Step 3: The instantaneous vector is passed through the relational submatrix of each component of the domain/range space. The resultant vector is thresholded by taking the two highest values to ON state and keeping other states in OFF state. For each input vector, the corresponding super limit point is obtained

Step 4: The augmented matrix of all the limit points is converted into reduced super fuzzy relational matrix by taking the average of each submatrix. The resultant reduced matrix gives the overall expression of each component of the domain and the range spaces.

Step 5: The reduced matrix of components is our new dynamical system which displays the relation between the components of domain space and the range space.

Step 6: The new component wise instantaneous vector is passed through the reduced relational matrix of components and the corresponding reduced limit point is obtained.

Step 7: The limit points give us the information about the relationship between the components of domain and the range spaces under consideration.

VI. Results and discussion

The pair(1 1 1 0 1 0 1 0 1 0 1 0 0 0),
 (1 0 0 0 0 0 0 0 0 0 1 0 0 0) is the fixed point
 obtained for the input vector
 (1 0 0 0 0 0 0 0 0 0 0 0 0 0).

Similarly, for other input vectors the fixed points were obtained. From the limit points corresponding to the components of self-love of the dynamical system we infer the following:

The components self-awareness and self-compassion behave the same way turning on the highest number of attributes of self-love. Self-esteem turns on the next maximum number of positive attributes. Self-acceptance, self-confidence and self-worth behave the same way turning on the same number of attributes while self-empowerment turns on the least number of attributes. Lack of self-worth, self-empowerment and self-esteem turn on the maximum number of attributes of selfishness while lack of self-acceptance and self-compassion turn on the next maximum number of negative attributes. Lack self-confidence and self-awareness turn on two and one attributes respectively.

As expected, self-love influences positive beliefs and selfishness influences negative beliefs with a few exceptions. Positive beliefs associated with survival and responsibility are turned on in every case where the components of self-love are in ON state. Having constructive view about self-worth induces the maximum number of positive beliefs we have considered in our study. The beliefs pertaining to security and connection play a vital role in influencing self-love for, the absence of self-love turns on negative beliefs associated with security and connection in all the cases. Lack of self-awareness induces the maximum number of negative beliefs besides the desire for survival and recognition.

VII. Conclusion

Human beings are not born in the families of their choice. Physical features, family background, wealth and prosperity, opportunities for growth, freedom of expression are not specified in the same measure for everyone. At these conflicting situations, comparison takes place and there is a possibility of feeling inferior or superior to others. The constant comparisons create a stress in relationships with oneself or others. Specially, children, as long as they are not much conscious of these differences, they continue to be themselves and are not in need of approval of others. As they grow into adults, they start comparing with others and feel superior or inferior. At this point self-love walks out and fear

of insecurity creeps in.

Self-love enables an individual to accept the reality of life and at the same time work with all creativity and intelligence to handle the issues that come along the way and proceed forward in life. Self-love is the source of optimism and motivation to improve one's life for better, navigating through the helpful or unhelpful situations of life. Even at the face of failure, they don't easily give up but work even harder to achieve what they are destined to.

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