A Comparative Study of Literature Based on Mathematical Statistics in Big Data Environment

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Abstract. Large data environment, clustering technology has become a powerful tool for information retrieval and text mining. The essence of it is to set up a target and divide a group of objects into different groups according to the similarity. This process can set the target as similar elements in the same group, or different groups of different elements, thus achieving different purposes is a kind of undirected learning research method. This paper compares the two literature by using the frequency and clustering of the computer mathematical statistics, and clearly shows that the key to achieving harmony is to build a good society.

Keywords: Big Data Environment, Probability, Clustering, Mathematical Statistics

1. Introduction

The Analects is one of the most important classical ethical works in China in that it includes doctrines influencing psychology and personality of Chinese people when it was made. Confucius made "ren" the core of his ethical teachings. But "ren" and love are different concepts. There are both similarities and differences which can help us better understand Confucianism. Love in The Bible is also so crucial since we can comprehend Christianity by correctly interpreting God's love. However, we are not inclined to regard Confucianism as merely a preparation for Christianity, as pluralism is our preference. Through analyzing the deep meanings of “love” of both The Analects and The Bible, the goal of this study is to initiate a cultural dialogue between the two traditions so that we can learn from each other and can also devote ourselves to building a more beautiful, more diversified and more harmonious world together.

Our comparison of the concept of love in The Analects and The Bible proceeds both from the viewpoint of human relationships and from the interpretations of the doctrines relating to “love” of the two works. Worldwide, scholars have dwelled upon “Confucianism and Christianity” from a variety of perspectives. One professor, Julia Ching, has done “the first study of Confucianism in the light of a clearly contemporary understanding of Christianity”[2] in her work Confucianism and Christianity: A Comparative Study and has concluded that her study of certain themes---man, God, and self-transcendence could open new avenues of thought and reflection. Ching’s research provides comparisons between the two traditions which strongly support our approach to the concept of “love” in the two classical works. Roger T. Ames, through careful study of Chinese classics and Tang Junyi’s works, concludes that “Chinese natural cosmology which is the inseparability of the one and the many,
of uniqueness and multivalence, of continuity and multiplicity, of integrity and integration (yi duo bu fen guan) distinguishes from the reductive, single-ordered western cosmology. [1] In appealing to the different understandings of cosmology of the two traditions, the relevant interpretive context for this comparative project is provided by Ames. And there are other modern scholars worldwide who have made contributions to better understanding “love” from one perspective or another. C.S.Lewis categorizes and describes all the natural loves: “affection, friendship, Eros and charity.” For Lewis, “no natural love can prosper except in the presence of the fourth love, charity, which is both the love of God and the selfless love of others.” [5] Qingping Liu, in his article “On a Paradox of Christian Love,” discusses the deep paradox between “loving God” and “loving your neighbor” and he tries to draw a conclusion that the two different commandments are an integrated unity. [7] In The Analects, “ren” (or “jen”, referring to “ren”) is often regarded as the central virtue. Tu Wei-ming presents a new inquiry into “jen” (or “ren” in the present article) as a living metaphor and the way of Confucius’ “jen” is understood as “where reciprocal good faith and respect are expressed through the specific forms defined in Li.” Alexus Mcleod argues that ren is most plausibly seen as a primarily communal property (thought of in terms of communal disposition) rather than an individual property such as a state of mind. Chenyang Li illustrates that society cultivates its members through li towards the goal of ren, and persons of ren manifest their human excellence through the practice of li. [6] However, quite apart from this scholarly support, no article has comparatively studied love in both The Analects and The Bible. We should like to emphasize differences and similarities between ren and “love” in The Analects, and then to discuss the golden rule, “love” in the two classical works in the following central relations---man and transcendence, man and society, and man and self.

2. Frequency of mathematical statistics

2.1. The concept of frequency
Under the same conditions, n experiments were conducted. In these n experiments, the number of times that event A occurred is called the number of times that event A occurred. The ratio m/n is called the frequency of event A, which is defined as: the ratio between the number of occurrences of each object and the total number of occurrences is the frequency. The ratio of the frequency of a group to the sample size is also called the frequency of the group. The distribution of Numbers is known by the number of frequencies (or frequencies).

2.2. Nature of frequency
When the number of repeated trials n increased gradually, the frequency fn (A) presents A stability, has stable in A constant, the constant is the probability of event A. This kind of “frequency stability is known as” the statistical regularity. 2. The frequency has the following properties: (1) the negative: less than or equal to 0 fn (A) less than or equal to 1 (2) normative: fn (Ω) = 1 (note: Ω sample space) additive 3. (3) the frequency is not equal to the probability. By Bernoulli theorem of large number, when n tends to infinity, frequency fn (A) in A certain sense close to the probability P (A).

2.3. Frequency distribution histogram
In rectangular coordinate system, the horizontal axis shows the sample data, the ratio of longitudinal axis frequency and group interval, the frequency distribution of each frequency in the table with the size of the rectangular area of the size of the corresponding to said, the statistical figure painting is called frequency distribution histogram. Frequency distribution histogram of a few of the more important data: average frequency distribution histogram of each small rectangular area * bottom absissa point: the sum of the area of the frequency distribution histogram is divided into two equal parts of absissa parallel to the Y axis, linear frequency distribution histogram modal: frequency distribution histogram of the highest in the rectangular outward midpoint of absissa added: in the diagram, the rectangle area is equal to: the frequency of the corresponding group.
2.4. Frequency calculation

The relative frequency of random events occurring m times in n trials is m/n. In general physics, frequency refers to the number of vibrations per second, which can be random or deterministic. Under certain conditions, observation or test is carried out on the object studied. Every time a condition group is implemented, it is called an experiment. The result is called an event. In an experiment, events that may or may not occur are called random events. The probability p(A) of the occurrence of random event A is A measure of the probability of the occurrence of this event. It's between 0 and 1. Experiment under certain conditions. If event A is impossible, p(A)=0. If event A must occur, then p of A is equal to 1. With the increase of experiment number n, the probability that the frequency is close to the probability is also greater, that is, any small number of magnitude is obtained in the equation.

Frequency = the number of frequencies per group/the total number of data but frequency has nothing to do with the average but with the variance of n data x1,x2,x3 Xn variance for: S2 = [(x1 - x') 2 + 2 + (x2 - x ') (x3 - x') (x4 - x ') 2 + 2 +... + (xn - x') 2] where x is the number n 'average.

3. Clustering in mathematical statistics

At present, clustering technology has become a powerful tool for information retrieval and text mining. The essence of it is to set up a target and divide a group of objects into different groups according to the similarity. This process can set the target as similar elements in the same group, or different groups of different elements, so that it is a kind of undirected learning method to achieve different purposes. For example, given a set of sample data Y={Y1, Y2, Y3... Yn}, according to its similarity, the process of group data atmosphere s group, {DL, D2Ds} is clustering. The group produced by this kind of group is called cluster. Clustering makes each cluster member with similarity and different cluster. The better the clustering method makes the higher in the mandible, the greater the difference between the clusters. The clustering of text information is Document Clustering. At the beginning, it only used it to retrieve information and improve accuracy. When it is carried out, the text is converted to the form of the computer understanding, that is, the vector space model. In the preprocessing of the text, such as extracting useless information, such as some low-frequency words and some disuse words, auxiliary words, to retrieve the words which can represent this document high frequency. Sometimes you need a name and a text vector. With the document vector, the meter can calculate the similarity. Because the semantic content is difficult to calculate, it is generally one.

It is a more mature method to calculate the frequency. The formula is based on Euclidean distance or angle between vectors.

The similarity between the angles is larger when the string is calculated and the distance is close.

After clustering the text, the results are evaluated by artificial classification. After clustering, the cluster is compared with the artificial classification to determine the quality of the cluster. Text clustering results can be evaluated by accuracy and recall, purity, mutual information, class matching and running time.

4. The difference between "ren" and "love" is found through mathematical statistical analysis

In Confucianism, ren is such a complicated concept that an accurate understanding of ren and love is essential for us to understand the Confucian thoughts and the methods in fulfilling the values of ren. Although ren has been translated into benevolence, humane, goodness, etc. by translators, and it also appears 109 in 59 sentences in The Analects, neither translations nor any singular interpretation of ren could contain completely the meaning of Confucian ren. The inter-relationships between “ren” and “love” are considered so integral, and so complex, that differentiating the two concepts might go a long way in helping us to interpret correctly Confucian thought in The Analects.

4.1. Ren in The Analects

Ren is often regarded as the central virtue of The Analects while love has not been frequently emphasized. In comparison with the appearance of “ren”, “love” shows up only 6 times in The Analects. It seems that Confucius seldom talks of “love” unless the meaning of love is restricted in the scope of ren. Love,
as far as I can see, is a broader concept; here, my thought differs from Li Jinglin’s analysis that “Confucianism defined benevolence (or “ren” in my essay) with ‘feelings’ and ‘love’” Li Jinglin expounds that “The mind responds to things through feelings; based on the mind of benevolence and righteousness or feelings of compassion, the expression of feelings can conform to the principle of the mean and reach the integration of self and others, and of self and external things......Love had two ends: self-love and natural sympathies, between which exist the love for relatives. As feelings and love are different, the Confucian idea of benevolence and love hence demonstrated differences and inter-connectivity.” Li Jinglin tries to illustrate differences between ren and love through categorizing the two concepts separately. However, he seemingly ignores the fact that love is also a kind of feeling which could be equal to ren in certain contexts, and that love is a stronger feeling which should be regulated by the principle of Mean so that it could positively affect our relationships with the world around us. In other words, love is different from ren, but it can be converted into ren.

Adhering to love as a profoundly tender, passionate affection, however, does not necessarily imply ren, for love usually has two different impacts in our lives: the positive impact and the negative one. As regards its negative impact, it refers to “love with distinction” or “love with gradation” which has been greatly studied by the followers of Confucius. It can’t be denied that the love of our own selves, our own family and kin, has priority over our love of the strangers. If people only love those who are near to them, “love with distinction” easily leads to inequality in society, which is also one of the factors resulting in social corruption. “Love with distinction” is not the correct connotation of ren in Confucianism because Confucius seldom mentions “love” in The Analects. However, as a positive kind of feeling, love should be developed into the level of ren which is a more rational, more normal and more harmonious feeling achieved by the distinguished person (or “gentlemen” in the translation of Arthur Waley). Mencius provided the concept of “love with distinction” with a reasonable explanation: “Treat with respect the elders in my family, and then extend that respect to include the elders in other families. Treat with tenderness the young in my own family, and then extend that tenderness to include the young in other families. Then you may move the world in the palm of your hand.”

According to Mencius, those who love people near to them know how to extend love to those far away. Although we don’t think that Mencius had the wrong interpretation of Confucianism, he really obscured the boundaries of love and “ren”. Love as an instinctive affection rooted in one’s state of mind should be regulated and cultivated so that it can arrive at the higher level of ren. “Ren” is a rational, impartial, reciprocal feeling which influences all good conduct and behavior of people in their daily life. Therefore, we can conclude that “love” is with distinction, while ren is without distinction.

Then we might ask, how should we develop love into “ren”? Love without rational norms is only a biological impulse which sometimes leads to its opposite side: trouble, pain, anger, and even hatred. In order to avoid its negative impact, love as a natural instinct should be cultivated so that it can establish an enduring and harmonious relationship with heaven, society, other men and self. In Confucianism, the ultimate goal of love is to achieve ren. However, ren is not easily achieved. From The Analects: “The Master said, Hui is capable of occupying his whole mind for three months on end with no thought but that of Goodness. The other can do so, some for a day, some even for a month; but that is all.” Among all his disciples, only Yan Hui could abide by the rule of ren for three months. Even Confucius never claimed that he was totally occupied with the thought of goodness. “The Master said, ‘As to being a Divine Sage or even a Good Man, far be it from me to make any such claim. As for unwearing effort to learn and unflagging patience in teaching others, those are merits that I do not hesitate to claim.’”

Ren could be obtained temporarily. “The Master said, Is Goodness indeed so far away? If we really wanted Goodness, we should find that was at our very side. From these references, it is clear that “ren” can be understood variously in different contexts. It is only when we focus on statements about ren as a virtue pertaining to the positive impacts of love that we find the clues. In dealing with both external and internal relationships, love, varies in different contexts. In the man-and-transcendence relation, man shows awe towards heaven as it is the most enigmatic. In the man-and-society relation, love evolves into respect. Men living in society usually shows respect towards the social order. In the man-and-man relation,
mutual friendship and reciprocity strengthen the relationships of people. It is worth noting that in
Confucianism, more emphasis has been given to man-and-self relations because the whole The Analects
provides prescriptions as to how to cultivate ourselves into the gentlemen (or “Jun Zi”) who can best
maintain harmonious relationships by practicing the rule of ren.

4.2. Love between man and God in The Bible

“Love” is the golden rule in The Bible. “Herein is love, not that we loved God but that He loved us.” (I
John IV, 10) Since God, as the Creator of nature, is omnipotent, omnipresent and sovereign, all
Christians are blessed by God’s love. In western tradition, love can be categorized differently as contexts
vary. C.S.Lewis in The Four Loves distinguishes two kinds of loves relating to Christianity: Gift-love
and Need-love. Gift-love, according to him, is Divine love. “The Father gives all He is and has to the
Son. The Son gives Himself back to the Father, and gives Himself to the world, and for the world to the
Father, and thus the world (in Himself) back to the Father too.” In The Bible God also addresses Need-
love: in the Old Testament, “I, the LORD, am your God, who brought you up from the land of Egypt;
Open your mouth wide and I will fill it.”(Psalm 81:10) Lewis explains that “Every Christian would agree
that a man’s spiritual health is exactly proportional to his love for God. But man’s love for God, from
the very nature of the case, must always be very largely, and must often be entirely, a Need-love.” But
actually God implants both Gift-love and Need-love into man. As soon as man receives God’s love into
his heart when he needs it, he immediately follows the rules of God to present “love” to others. Without
God’s love, man has no hope. It is God that teaches man to love in the world. That humans love in the
world is the miraculous image of God’s love.

The Man-God relationship is essentially the relationship between deciding and being decided, in
which God is almighty, God is perfect and God is the absolutely positive while humanity is printed with
the mark of sin which can only be forgiven and redeemed by God’s love. Once God decided to love
Man, Man as a sinner had the chance to be saved from sins. In Christianity, God’s love is impartially
given. God deserves to be trusted and loved. “Know therefore that the Lord your God, He is God, the
faithful God, who keeps His covenant and His loving kindness to a thousandth generation with those
who love Him and keep His commandments” (Deuteronomy 7:9). Man has the duty to love God as “The
Lord did not set His love on you nor choose you because you were more in number than any of the
peoples, for you were the fewest of all peoples.”(Deuteronomy 7:7) All Christians have been selected
unconditionally. That is to say, God’s love is determined innately. But man’s love for God, according to
Jiantao Ren and Andrew Lanbert, could be explained and defined as a concern with reverence in the
realm of Christianity. “The only object of Christian reverence is God. Thus the consequences of
Christian reverence are fundamentally different from those found in Confucian reverence.” The
Christian regards Divine love as the only source of man’s mainstay. In this sense, the relationship
between man and God lies in God’s inspiration. Men faithfully serves God when they have been chosen.
Thus God’s love plays a decisive role in cultivating all the ethical virtues of men.

4.3. Love between man and Heaven in The Analects

“If Christian doctrines of awe are fully grounded in discourse about divine relations, then Confucianism
is grounded in a way that is enriched by a discourse on reverence that draws on human relations.” Indeed,
human relations is the focus of Confucianism. “Tzu-lu asked how one should serve ghosts and spirits.
The Master said, ‘Til you have learnt to serve men, how can you serve ghosts or spirits’?“[4] Confucius
treated ghosts, spirits or Heaven with a sense of awe because they represent the supreme power who
determines man’s destiny. Until we have our social relationships in order, we are in no position to offer
sacrifices to any transcendent beings.

In The Analects, Confucius doesn’t teach humans to love Transcendence as we are remote from it
and as it is difficult to comprehend. “The Master never talked of prodigies, feats of strength, disorders
and spirits.” [4] For those things that humans are not able to explain clearly, humans have been
admonished to keep a sense of awe for them. What Confucius emphasizes is secular life and social
responsibility, which humans can obtain wisdom about unaided by divine guidance (i.e., revelation, in Western terms). “Fan Ch’ih asked about wisdom. The Master said, He who devotes himself to securing for his subjects what it is right they should have, who by respect for the Spirits keeps them at a distance, may be termed wise.”[4] According to this view, humans’ relations to transcendence is not the result of any mystical power, but rather is the result of human growth. Only when a human determines to grow into a sage or a gentlemen, according to The Analects, can one understand transcendence more, and one can become closer and closer to Heaven. It is true that Confucianism includes the human cultivation of moral character, ethical virtues, and the control of emotional impulses; however, this kind of moral growth is based on individuals’ efforts of converting natural love into ren. Confucianism takes ren as its object. “Ren is what makes a man truly human, by making him a perfect man, a sage. The virtue of ren was given a metaphysical and even cosmic dimension during the Chinese Middle Ages, Sung and Ming dynasties, as Ren became identified with the cosmic life force itself.”[3] According to Ching, the Confucian teaching of “ren” does not show Heaven’s love for man. Heaven is the source of life, the protector of man and the provider of his needs. The virtue of ren is rather based on human nature itself. Man is able to practice ren as it is a universal virtue that can be practiced by all people. Only through cultivating the good relationship with the world, Confucians find delights in the harmony with Heaven and in the goodness and especially in ren.

5. Comparative conclusion
According to statistics,6 the word “love” appears in The Bible 484 times, 250 times in The Old Testament, and 234 times in The New Testament, encompassing 69 topical index.7 As it concerns “love” between man and the Transcendent, “love” in The Bible indicates that even though humans are evil due to original sin, God forgive human’s sins because God loves us. For Christians, revering God is the only mandate. “Now, Israel, what does the Lord your God require from you, but to fear the Lord your God, to walk in all His ways and love Him, and to serve the Lord your God with all your heart and with all your souls.”(Deuteronomy 10: 12) In Christianity, God’s love is ubiquitous. “... if anyone loves God, he is known by him.” (1 Corinthians 8:3) It is through love between man and God that Christianity implanted “faith” “hope” and “love”, the transcendental moral characters, into humans. Most of the teachings of “love” in The Bible have focus more upon God’s love while Confucian teachings intend to stress human perfection. Although Confucius seldom talked of “love” in The Analects (as shown in Table 2), the ways of perfecting oneself are usually people’s methods of acquiring wisdom so as to live harmoniously in the world.

The difference of “love” between The Analects and The Bible lies principally, therefore, in the mindset of thinking about transcendence. Christians are dualists. At the heart of Christianity, all humans love is from God. Confucians strive to live primarily in unity and harmony with those around them. At the heart of Confucianism, the stress is upon human efforts to achieve the oneness of Heaven and Man, the union of people’s ways of acquiring ren with the natural laws of Heaven.

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