Computers May Soon Know You Better than Your Spouse

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Abstract

As one of the most important characteristics of human interaction, personality has long been studied. Ways to perceive and judge personality types are also crucial topics among these studies. With fast development of computer technology as well as the internet, the computer can also perceive and judge personality according to a recent article on *Computer World*[1]. This review shows and generalizes how the computer actually perceives and judges the personality, how accurate the results are and the reactions towards the results.

1 Introduction

It is important for people to get know each other better, especially the personality, as it can be the key to having a more fulfilling relationship which will consequently lead to success. Human beings have studied how to perceive and judge the personality from different angles for a long time. One of the ways, created by Isabel Briggs Myers and Katharine Cook Briggs [2], is to divide people's personality into 16 types based on 4 pairs of characteristics. However, with the development of computer technology as well as the social network, the computer can also study and judge people's personality based on their Internet footprint [1] as well as their computer usage habits [3].

2 Description of the Experiment

According to the review posted on *Computer World* [1], the research, done by Wu Youyoua, Michal Kosinskib and David Stillwella [5], is based on the Facebook Like. The previous studies [6] show that the Facebook Like can effectively predict a person's personality. The method that is used to predict the personality is shown in Fig. 2.

The result of the the previous studies [6] also indicated that the accuracy of all the prediction items is proportional to the numbers of the analyzed Facebook Likes as is shown in Fig. 3

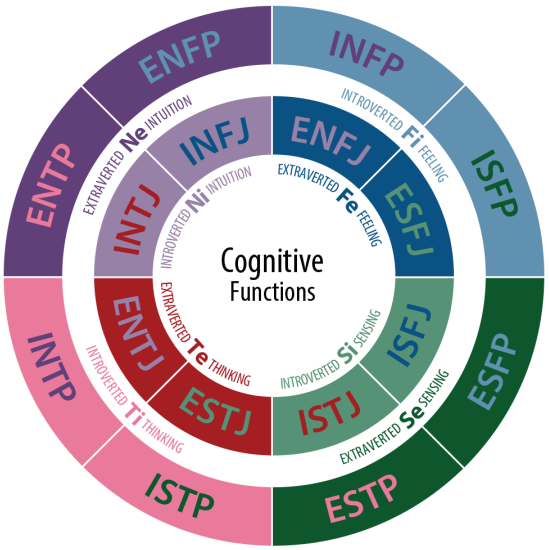

Figure 1: **Myers-Briggs Type Indicator.** A diagram depicting the cognitive functions of each type. A type's background color represents its Dominant function, and its text color represents its Auxiliary function.[4]

In this research [5], the method used is similar to the one mentioned previously and is shown in Fig. 4.

3 Result

The result of the research[5] is shown in Fig. 5. The figure indicates that as the numbers of Facebook Likes increases, the accuracy increases. When the number is at 10, the accuracy is at the same level as the coworkers and the colleague. When the analyzed number reaches 100, the accuracy is competitive compared to family members as well as human's average level. When the number is

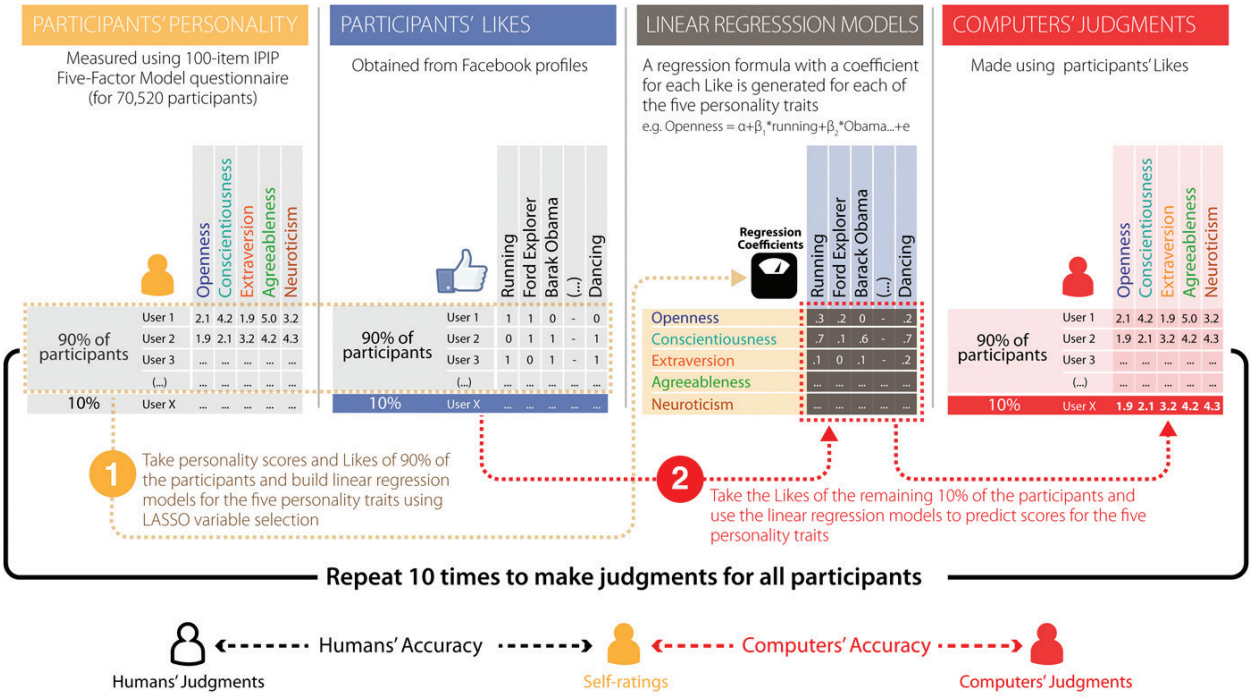

Figure 4: **Method Used to Acquire Computer's Judgment.** The diagram shows the method is used to perceive and judge people's Big Five personality [5]. 70,520 participants both self-reported the personality and the Facebook Like data. 90% of the participants' data are first analysed by the method mentioned in Fig. 3.The established prediction models are then applied to the remaining 10% participants' data and their personalities can therefore be perceived by the computer. By repeating 10 times, for each single participant, a perceived personality can be obtained by computer.

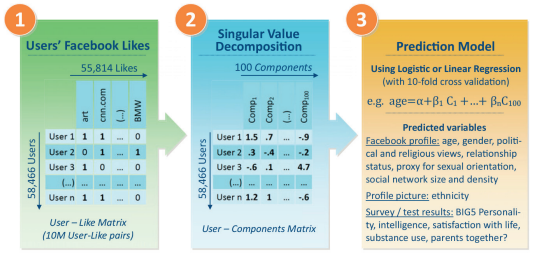

Figure 2: **Prediction of Person's Personality through Facebook Like.** The data are collected from the user's Facebook Like and are marked as either 1 (appears) or 0 (does not appear) for each type of information. Singular Value Decomposition (SVD) is then applied to different personality related items in the obtained matrices. Finally, a linear or logarithmic prediction model can be constructed through the transformed matrix. [6]

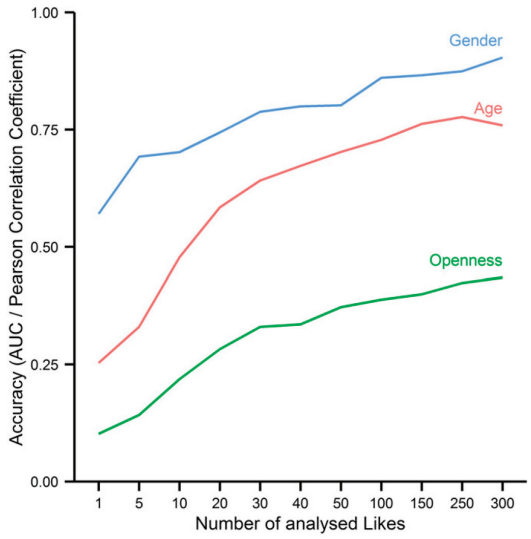

Figure 3: **Relationships between the Accuracy and the Numbers of the Analyzed Facebook Like.** The diagram shows that for all the prediction items (age, gender and openness), the accuracy is proportional to the numbers of the analyzed Facebook Likes. [6]

increased to 300, the accuracy is as precise as his or her spouse, around 60%.

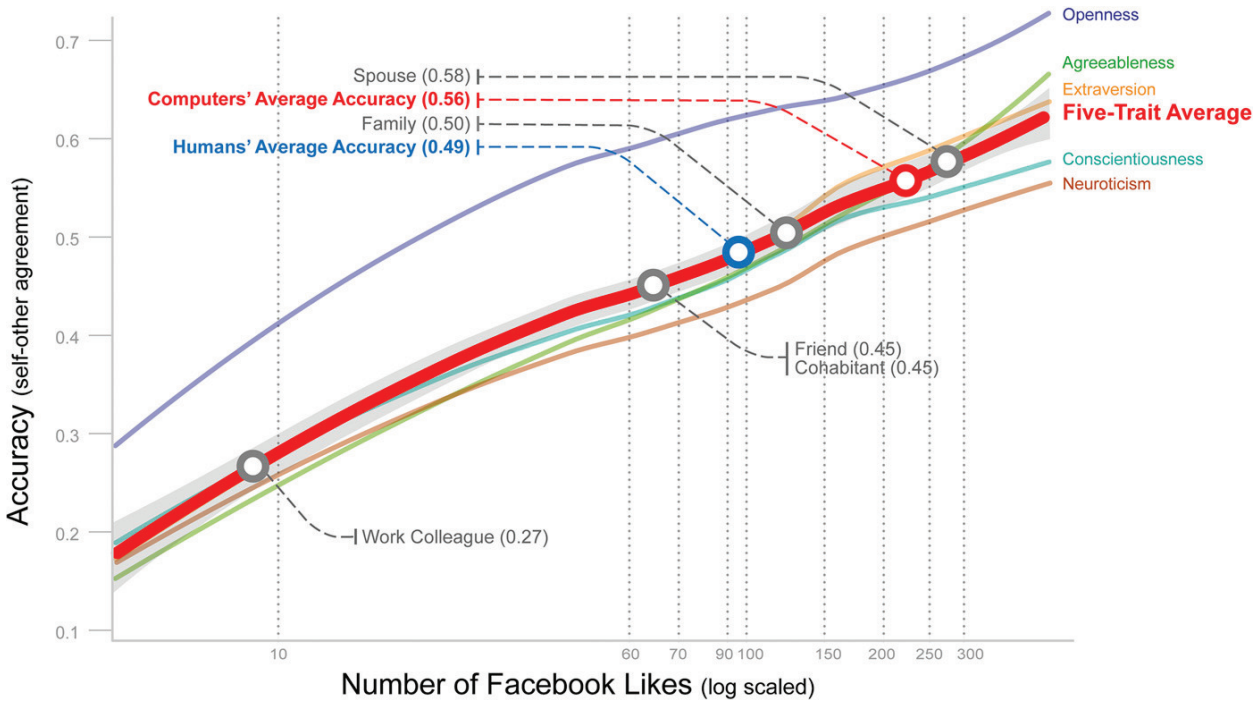

Figure 5: **The Relationship between the Accuracy and the Number of Facebook Likes.** The figure shows the accuracy of the computer's perceiving and the judging on the overall data samples. As the number of Facebook Likes analyzed increases, the accuracy increases and can reach different levels.

4 Conclusions and Reviews

This research shows that computer-based models are significantly more accurate than humans in personality judgment when the number of Facebook Likes is sufficient. This can be explained mainly through two reasons. 1) Computers have the capacity to store enormous amount of data and analysis in a short time. However, humans cannot and they can only recall part of the memory which causes less accuracy. 2) Computer perception and judgment is purely based on statistical analysis without any bias or subjective views. However, human perception and judgment can be affected by stereotypes, bias, values and other subjective components. Consequently, computers' perception and judgment are more objective and, therefore more accurate.

However, this research only measured the accuracy for the Big Five Personalities[5]. It ignores other personalities which human judgment and perception may potentially determine more accurately. Also, for some of the subconscious cues, it is impossible for the computer to capture but is available for human to acquire which can increase human judgment and perception as well.

The benefits for this research can be profound since it provides automated, accurate, and cheap personality assessment tools. For example, in order to know one's own personality, either for one's own interest or for psychologist's purpose, the person is no longer require to fill out the questionnaires but can instead just have their online data analyzed.

However, this also leads to the hazard of the abuse of knowledge of the personalities. As a result the user should begin to beware of his or her own digital footprint. The social network should also protect the user's digital footprint and can consider giving control of the digital footprint back to the users. On the other hand, the government needs to participate in this procedure to monitor the usage of the digital footprint.

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