Personality in Speech: Theories of Psychology, Questionnaires, Speech Databases

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ABSTRACT

The aim of this study is comparing between the existing speeches databases that contain audio files belong to many people who they are different types in personality and another database that the authors did in this research. Whenever we listen to a voice for the first time, we attribute personality traits to the speaker. The process takes place in a few seconds and it is spontaneous and unaware. While the process is not necessarily accurate (attributed traits do not necessarily correspond to the actual traits of the speaker), still it significantly influences our behavior toward others, especially when it comes to social interaction. We create a Syrian speech database that represents a real database to compare it with the standard databases. To introduce to this concept, we define the meaning of personality in speech.

Keywords: personality,inventory,speech database,standard,Syrian.

I.   INTRODUCTION

 Whenever we meet unknown persons, we make spontaneous inferences about a wide range of socially relevant characteristics including attitudes, intentions, and values and beliefs. This work considers one facets of this phenomenon, namely the spontaneous and immediate attribution of personality traits to unknown individuals. The process can be very fast and it does not necessarily identifies the actual traits of a person. However, attributed traits show how an individual is perceived and this is important because it is the way we perceive others that drives our attitudes and behaviours towards them. The intelligibility of generated speech considered by any uttering automatic device is the measurement for its efficiency [1]. Although, most of the devices used nowadays for reading texts may produce understandable speech but it is automated, standard and far from natural speech properties, so the great need to a high quality automatic generator for the tone emerged. There are many researches and modern projects in the field of generating speech systems [2], which are all based on the analysis of phonetically labeled speech corpora. According to the shortage of achieved actions in the domain in the Syrian language, this research offered the following stages to achieve a speech database for the Syrian.

Speech database represents the main pillar in constructing communicating systems with the computer, to contribute in the expansion of the computer users to include blind, illiterate and those with special needs in addition to the possibility [3].
The ongoing process for recording a personality database in Syrian is motivated and described. Overall, high-quality and consistency among recordings is pursued, in order to avoid possible biases when rating speaker characteristics and low performance when automatically detecting them. Prescribed and spontaneous human-human dialogs are recorded using ten different microphones in an acoustically-isolated room with 48 kHz sampling frequency. Natural and neutral speech is recorded, controlling the absence of background noises. So far, 100 Syrian speakers

without accent have participated and self-reported have been conducted with part of these data. Our goal is to extend the number of recorded participants, conduct more reporters, and share the speech files, metadata, and associated labels, features, and analyses with the scientific community [4].

Recently in this field, various researches are done for Speech-based human-machine communications are no longer constrained to the detection of the users' message and to speech synthesis but also the automatic characterization of the users has been gaining attention over the last decades. Of particular interest is the detection of speakers' social characteristics such as personality and voice likability [5, 6]. Successful automatic personality traits and likability recognition correlating well with human judgments can enable the systematic prediction of social human behaviour and the improvement of speech synthesis for human-machine interactions.

Automatic personality perception is the prediction of personality that others attribute to a person in a given situation. The aim of automatic personality perception is to forecast the behaviour of the speaker perceived by the listener from nonverbal behaviour. Extroversion, Conscientiousness, Agreeableness, Neuroticism, and Openness are the speaker traits used for personality assessment [7].

II. PERSONALITY

The study of personal psychology in terms of its basic components and how to measure them, based on multiple theories are often different, although the common goal is to predict the human behaviour in different circumstances. Each character has its main characteristics, which determine the characteristics of this character and its weaknesses and strength and also its flexibility and ability to Compatibility with others.

There have been many attempts by psychologists to study personality, and crystallized in the following question: What are the basic components of personality? This question is answered by many different answers, and the debate is still connected. This is the difference between the views of the personal psychologists in terms of the number of factors that can be used to describe any personality. The number of these factors in Catel was sixteen, only, while in the Goldberg model only five factors [8].

The theories of personality vary in terms of vision, handling and concentration. These theories are based on general analysis as a statistical method in reducing multiple features. The most prominent of these are: Cathal's theory and Isnak theory. These theories represent different approaches in general analysis. Directly or indirectly. The theory of Isnak is taken by high-end or second-degree factors or more if the primary factors are found to be strongly interrelated, which, according to Eisenk, makes it universally necessary because the objective of the general analysis is to reduce as much as possible to a few factors compared to Kathleen.

III. PERSONALITY IN SPEECH

Psychological studies and acoustics have proved sound. In many cases, the tone of the voice is a clear indication of the psychological and social state of the living organism. Voice recordings are taken as a sign of depression if the sound is one degree. As for the person concerned, his voice is sharp and fast, the notes and the person who is active or happy is his voice is high and the social person is his voice a joyous starting point and the stubborn person presses on the exits of the words. The false sound seems hesitant and the emotional sound seems calm as soon as the deep sense. The "feminine" voice in men is caused by hormonal disorders, and thus behaviour disorders. It seems naturally soft. The same applies to the voice of a woman who is "impudent" in women, and if it seems

too rough, it may be an attempt to conceal women's vulnerability to men. As for the woman who knows that her weapon is strong in her femininity, we find her excessive use of her voice with artificial lightness. A reasonable woman who is balanced and finds her voice comes naturally thin without fabrication. The studies also show that men who do not trust their full manhood try to show her by raising their voices or exaggerating their rudeness [11]. These high, coarse voices also indicate the childlike personality that is only interested in satisfying her instincts. And despite the great role played by the genetics factor in the transfer of genetic traits between organisms from grandparents and parents to children. Modern scientific theories have proved by means of sound analysers that human voices differ as well as fingerprints. (It is worth noting that crime experts have used the method of sound analysis to detect crimes in which sound recording is evidence of crime, Fingerprints in the discovery of crimes) The experiments conducted by phonologists have not shown that there are two similar voices in the number of oscillations, although similarities may appear to be apparent in the normal ear. It is known physiology that there is a difference between the vocal cords of women, vocal cords of men. Acoustic vocal cords thin. The vocal cords of the man is long and heavy, as the throat of women is smaller than the throat of men, and muscle fibre to man's migraine stronger, making His voice is strong and we are afraid of the weak woman's voice, except in anomalous situations. As proved physiologically that the muscle of the sound lies in the middle stage between what is voluntary and what is not. And that if a person tries to control the part of the non-voluntary voice, we will find his voice come out locked and arrogant. In this case it turns out that this person shy and cheated or afraid or hiding in the depths of something by voice. So the therapist sometimes has to ask his patients to shout loudly, and continue to scream until they feel full comfort, and then their voice becomes normal, reflecting the nature of their personality. In this book, Terton says: The

sounds are stored in the brain in the form of chemical reactions. These interactions influence the feelings and emotions of the human being. In this book, and appear in his behaviour in the form of idle sadness or pain [12].

IV. SPEECH DATABASE

The quality of any automated device is evaluated by the device. All devices currently used to read texts suffer from a lack of natural speech features, although it is understandable. Therefore, it is necessary to have an automatic generator of high quality sound in any generator system to speak, among most recent research and projects in this field, there is an increasing interest in machine training methods such as neural network, hidden Markov models and other probabilistic methods. Most of these methods are based on the verbal and empirical analysis of the recorded and classified voice. Due to the lack of work in this field for the Arabic language, this work provided the stages for the completion of a sound database of Syrian dialects such as those available for foreign languages such as TIMIT (English) and BDSONS

Speech Database is the cornerstone of building various computer systems such as automatic speech recognition and speech recognition systems, speaker recognition and language and dialect recognition. Speech databases are usually composed of wave files that have already been recorded for speakers in the required language, the speech database was rich and rich in content whenever it helped to produce computer systems with outstanding performance.

V. EXPERIMENTAL RESULTS

In this research, we contacted the university administration to communicate with the radio and television centre. In fact, the necessary legal transactions were carried out as we took a request from the university to the radio in order to allow us to

use the radio equipment and its studios that are isolated by voice for recording.

We have invited 100 students to conduct practical studies. All of these students are between the ages of 18 and 24, all male and female, all of them residents of Tartous, meaning that they are similar to the area of the audio field, which may vary between dialects.

All speakers are from cultural and academic backgrounds and do not have any hearing or hearing impairments. All of them gave welcome words for a period of ten seconds. Before recording their votes, the speakers filled in the BFI-10 items and grouped them according to the results of the paper test and classified the phonograms of each group separately.

After this hard work, we get our Syrian personality speech database.

Our database contains the following:

1) Audio files: The dataset includes 200 audio clips of 10 seconds. Audio files directory: /Audio clips. Audio files format: .WAV files (16 bit, mono, 8 kHz).

2) Raw Personality Questionnaires: This dataset includes the raw questionnaires filled individually by speakers themselves. The questionnaires correspond to the BFI-10 items: #1. This person is reserved. #2. This person is generally trusting. #3. This person tends to be lazy. #4. This person is relaxed, handles stress well. #5. This person has few artistic interests. #6. This person is outgoing, sociable. #7. This person tends to find fault with others. #8. This person does a thorough job. #9. This person gets nervous easily. #10. This person has an active imagination. The answers range from "Strongly Disagree" (1) to "Strongly Agree" (5). Raw Personality Questionnaires directory: /BFI_Item_Answers. Raw Personality Questionnaires format: comma separated values (csv).

3) Personality assessments: The dataset includes the personality scores assigned individually by the speakers. The scores are obtained from the raw personality questionnaires.

The five scores corresponds to the following traits: Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness. Personality Assessments directory: /Personality Scores. Personality Assessments format: comma separated values (csv).

4) Metadata: The dataset includes metadata for each audio sample: speaker ID (integer between 1 and 100), gender ("M" for male and "F" for female). Metadata directory: /Metadata. Metadata format: comma separated values (csv).

VI. CONCLUSIONS

Personality is a combination of physical, mental, emotional and social traits inherited. Which can distinguish the person from the other, can analyze the personality through the line or signature or the way of walking and standing or features of the face or the palm of the hand or voice or other. As the voice signal contains information about the sex of the speaker and his age and social and cultural background and his state of short-term psychological joy Sadness, anger, fear, disgust and a long-term psychological state characterized by persistence in behavior, style, construction and inner feeling that will be expressed by the term personal.

VII.   REFERENCES

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