on the specific day or years to come/life in general (western—non-western countries, analytical vs. holistic turn of minds); 2) use of nominal structures; 3) stress on characteristic features of a person, compliments.

The result of birthday postings analysis shows that people with analytical type of thinking, most western cultures, focus on the particular day and their warm wishes are directed to that day, while in non-western cultures it’s more typical to express general wishes for a year or many years to come. Thus, culture-specific characteristics of the mind can be traced in the birthday Facebook greetings. People of different countries congratulate different ly (western vs. non-western countries, analytical vs. holistic). The greetings are also influenced by cultural values, everyday reality, and Internet environment. Posting is an orienting action aimed at future (to please the person and pay attention to him/her as a sign of love and respect). Statuses are indexical as they are contextualized by the flow of feelings and previous experience involved with it.


PERCEPTION OF TIME-REVERSED DYNAMIC EMOTIONAL FACIAL EXPRESSIONS

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Introduction. Human faces comprise unique category, highly relevant for our social interactions and surrounding us from the first days of our life. Our abilities to read various types of information from faces are advanced. To the date, most of the studies utilized static images of facial expressions that represent a real face only to a limited extent. Providing high complexity of faces, their studies should aim at bridging the methodological gap between restricted conditions of laboratory experiment and ecologically valid situation of social communication.

An important aspect of a realistic face is its dynamics. Recent behavioral and fMRI studies highlight the role of motion in recognition of faces and their expressions. According to Dobs et al. (2014) and Edwards (1998), we can easily tell a natural nonlinear facial motion from artificial one, primarily relying on displayed facial actions. Onset and offset time of an expression can help to distinguish genuine emotions from insincere ones (Hess and Kleck 1990). Reinl and Bartels (2014) revealed higher activation in bilateral STS and left OFA to reversed versus natural timeline of dynamic fear expression, and in left FFA—to increased versus decreased emotion. Schultz et al. (2013) have shown that the perceived fluidity of facial motion can predict patterns of activation in STS and V5 brain areas. Taken together, these and other results propose fine attunement of human face perception system to subtle motion cues, absent in static or linearly morphed faces, and close interaction of facial form and motion perception pathways.

In the present study, we explored the role of timeline inversion on the recognition of emotions that change from one into another, thus comprising transient expressions. This type of facial display seems to have even greater ecological validity than pure basic emotions developed from a neutral face.

Hypothesis. Time reversal influences the perception of natural dynamic transitions between facial emotional expressions but does not change the perception of dynamic linear morphing sequences.

Method. Stimuli. We used full-face video records of a male poser depicting transitions between seven basic emotional facial expressions, obtained with 300 Hz video camera (21 transitions in total). Four types of stimuli were constructed on the basis of the records: (1) natural expression shifts displayed by the poser; (2) their time-reversed versions; (3) dynamic sequences of linear computer morphing between first and last frames of original records; (4) time-reversed morphing sequences, i.e. morphing from the last to the first frame. The duration of all stimuli types corresponded to the duration of the original video records and varied from 390 to 860 ms depending of the emotions depicted.

Design. Independent variables included: emotional transitions modality; type of stimuli (natural or morphed); frames order in transitions (normal or time-reversed). Dependent variable was frequency of identification of stimuli with each of the seven emotional categories. Three series were conducted with different types of stimuli: (1) identification of natural dynamic transitions (n = 24); (2) identification of time-reversal dynamic transitions (n = 22); (3) identification of both types of morphing sequences (n = 22).

Procedure. In each trial the following sequence was presented: fixation cross (1 s), ISI (100 ms),
stimulus (390-860 ms), prompt to select from the list of emotions those depicted on the face. Participants could choose one or several emotions. Each stimulus was presented four times using PXLab software (Irtel 2007) on 100 Hz 19” CRT ViewSonic G90F monitor connected to Intel Core2 desktop computer. The stimuli order was randomized.

Data analysis. The obtained data were analyzed with mixed-effect logistic regression using R3.2.2 (R Core Team 2015) and lme4 (Bates et al. 2015). We fit two separate models: (1) explaining the proportion of correct recognition of the first presented emotion in dynamic sequence; (2) similar model explaining the recognition of the second presented emotion. Fixed factors in each model included stimulus type, transition modality, frames order and their interaction; participant ID served as random effect.

Results. According to the fitted models, main effects of the stimulus type and frames order were non-significant for recognition of the first expression (stimuli type: $z = 0.563, p = 0.643$; frames order: $z = 0.087, p = 0.953$), as well as for the recognition of the second one (stimuli type: $z = -0.770, p = 0.431$; frames order: $z = 1.458, p = 0.210$). But the type $\times$ order interaction significantly influenced the recognition of both displayed emotions, the first ($z = 2.712, p = 0.007$) and the second ($z = -3.258, p = 0.001$) in transition. Three-way interaction type $\times$ order $\times$ transition was significant as well: for the first expression $p < 0.001$, for the second expression $p < 0.001$. The first model explained 68% of total dispersion, the second model—44% of dispersion.

Direct comparison of recognition rate in stimuli displayed in normal frame order revealed that the first displayed expression was chosen by the participants in 18% (natural transitions) and 20% (morphs) of the total number of trials, and the second expression—in 86% and 84%, respectively. Therefore, observers tend to recognize the expression at the start of the dynamic stimulus less accurately than the expression at its end, and recognition rates does not depend on the type of stimuli, realistic facial dynamics or linear interpolation.

In dynamic transitions reversed in time, recognition rate significantly differed between stimuli type, both for first and for second expressions in transition. First expression was correctly chosen in 31% for morphs and in 54% for natural expressions. Second expression was chosen in 78% for morphs and in 60% for natural expressions. That means in realistic reversed stimuli the first displayed expression was recognized better than in stimuli with normal order. On the other hand, the recognition of the second expression drops in reversed realistic faces. In linear morphed sequences, these tendencies were observed as well, but were non-significant.

Discussion. In support of our hypothesis, we found that reversing of the timeline indeed changes the ability to recognize the facial expressions in realistic video records of the transitions between them. As for linear computer morphing sequences, there is no significant difference in perception regardless of the frames order. To the best of our knowledge, this is the first demonstration of the importance of the timeline orientation in the perception of natural facial expression transition. It is fully consistent with the previous studies conducted on dynamic basic emotional expressions (Dobs et al. 2014, Edwards 1998, Reinl and Bartels 2014). The possible explanation of the results involves non-linearity of natural face dynamics. Indeed, unlike simple linear morphing, in ecologically valid human face different muscles can move consistently but not synchronously. Further studies of dynamic face perception should take the obtained result into account.

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MUSIC THERAPY: WHY DOES IT WORK AT ALL?

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According to certain famous psychologist, music is an “auditory cheesecake” (Pinker 1997). The imaging studies reveal that listening to pleasant music does indeed activate the biological reward