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Self-names as Emotionally Competent Stimuli
A linguistic perspective on the emotional perception of one's own name

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Abstract
One's own name might be the most important word in one's lexicon, being closely connected to one's identity. Although there is a consensus among social scientists on the special cognitive status of self-names, little is known about the emotional consequences of self-name perception. Therefore, this paper addressed the question of why and how self-names affect their owner. A literature review revealed that self-names are highly arousing words with context-dependent valence. The Affective Language Comprehension model (Van Berkum, 2018) identified the (interplay between the) factors that determine self-name valence. It suggested that self-names affect their owner because of associative learning of a stable set of communicative representations (e.g., self-reference), and that how self-names affect their owner is dependent on a variable set of representations (e.g., prosody and speaker's stance). Both sets of factors contain Emotionally Competent Stimuli (ECS), elements that are able to trigger emotions. This paper argues that resulting from their highly frequent processing, self-names become ECS themselves, such that specific emotional valence is an intrinsic part of the word as stored in the lexicon. This linguistic perspective of self-names as ECS connects previous findings in a comprehensive framework and throws up interesting new questions for further research.

1. Introduction

Your own name might be the most important word in your lexicon, being linguistically speaking the greatest connection to your existence, identity, and individuality (Koole & Pelham, 2003). When someone remembers your name after meeting you, you feel recognised and seen. People tend to be frustrated when their name is mispronounced or deliberately abused (Starks, Leech, & Willoughby, 2012:143), but are more likely to comply with a request if the requester remembered their name (Howard, Gengler, & Jain, 1995). Names thus have strong emotional connotations, that can even stick to the words themselves. For example, the name *Adolf* connotes a strong negativity, whereas the name *Elvis* exudes positivity – at least to some. Although this clearly shows that names are emotionally charged words, there has been little scientific discussion about the emotional consequences of the processing of self-names, i.e. names to oneself.

In order to fill this knowledge gap, this paper addresses the question of why and how self-names affect their owner. It applies findings from previous social studies to a linguistic model, which yields a new perspective on self-names as an interface between language and emotion. In the pages that follow, it will be argued that via associative learning, self-names become "Emotionally Competent Stimuli" (ECS; Damasio, 2004; Van Berkum,

2018): words that are able to trigger an emotional response. The scope of this paper is limited to first names, although self-names comprise all names that specifically refer to one's own self (e.g., nicknames and mispronounced names).

The paper is organised in the following way. Section 2 lays out the paper's definition for emotion. Section 3 reviews research on self-names, showing that self-names are highly arousing words that are processed with cognitive advantages. Next, section 4 discusses studies on attitudes towards self-names. These studies suggest that the valence of self-names is dependent on self-esteem and context. Section 5 combines findings of previous research by applying self-names to the Affective Language Comprehension model (Van Berkum, 2018). Finally, section 6 concludes and identifies areas for future research.

2. Emotion processing

Emotions are packages of events that lead to the emergence of feelings. They are initiated by a particular *stimulus* (Van Berkum, 2018) that is (1) *cognitively appraised* as relevant to oneself, i.e. consciously or unconsciously evaluated and interpreted, leading to (2) an automatic physiological and behavioural *response*, which is experienced as (3) a subjective *feeling* (James-Lange theory, as sited in Shiota & Kalat, 2012, p. 14). For example, one may perceive stimulus *Adolf* as the name of the new boyfriend of one's sister. This is cognitively appraised as relevant to oneself and possibly negative, leading to a frown and experienced as an unpleasant feeling.

In order to classify emotional feelings, the circumplex model of affect is employed (Posner, Russel, & Peterson, 2005). This model arranges emotions along two dimensions: *valence* (negative/unpleasant versus positive/pleasant feelings) and *arousal* (physiological strength of the emotional feeling, deactivation versus activation; Shiota & Kalat, 2012:9). How self-names affect their owner is, in this view, dependent on the specific combination of valence and arousal, as illustrated in Figure 1. For example, the combination of a pleasant valence and active arousal results in a feeling of excitement.

3. Cognitive advantages in processing self-names

Traditionally, self-names have been investigated in the field of social sciences in light of self-processing biases: the effect of processing self-related information with significant cognitive advantages (Cunningham & Turk, 2017). Particularly, self-names are able to catch attention immediately, even under unattended conditions (cocktail-party effect; Cherry, 1953). Alexopolous, Muller, Ric, and Marendaz (2012, Study 1, 2, and 4) have shown these attention capturing properties by using a visual search paradigm, in which participants had to seek the letter 'O' amongst a collection of 'Q's. The position of the target letter was primed either by the participant's self-name, or by another unknown participant's name. Crucially, the primes were presented very briefly such that participants only unconsciously perceived them. The findings indicate that participants fount the 'O' faster when it was preceded by their own name, compared to when preceded by another name. Processing one's own name thus shows larger attentional capture effects than processing other's names, and Alexopolous and colleagues (2012) argued that this occurs unconsciously, unintentionally, and automatically.
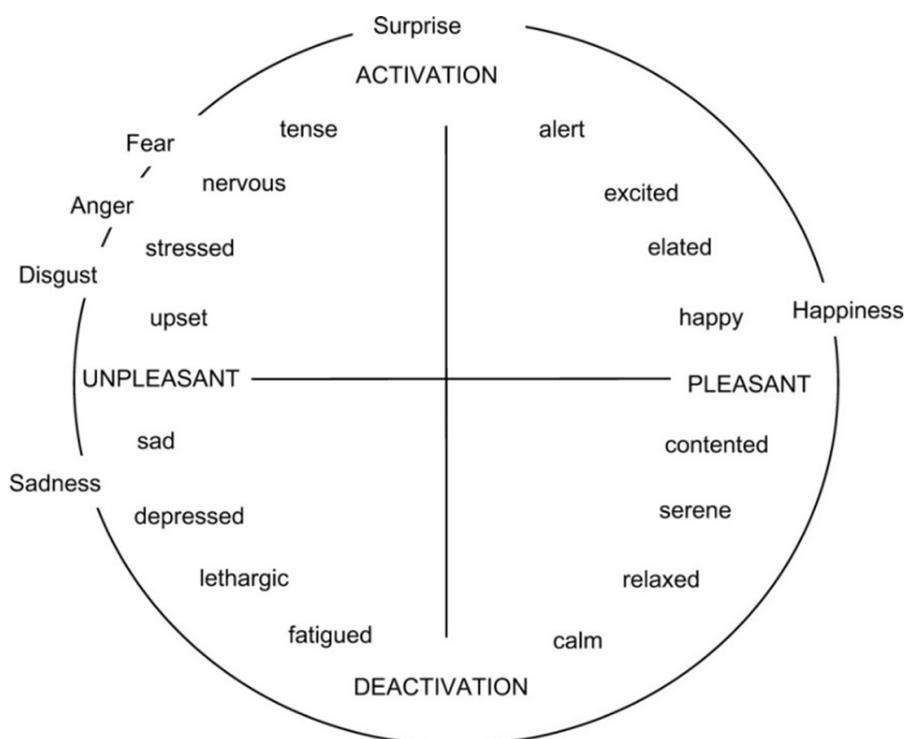
Figure 1. Circumplex model of affect (Posner et al., 2005). Horizontal axis represents valence; vertical axis represents arousal.

Yet, such studies do not answer the question of why self-names capture attention. Not only are self-names related to oneself instead of someone else ('me' versus 'not me'), they are also of higher significance to oneself than unknown other's names are ('important to me' versus 'not important to me'). Moreover, self-names are highly frequent and familiar words (García et al., 2015), that are processed faster and more accurately than words with lower frequencies (e.g. Grainger, 1990).

To address this issue, much of the current literature aims to disentangle the effects of self-relatedness, significance, familiarity, and frequency. Alexopolous and colleagues (2012, Study 3) evaluated the role of familiarity on processing biases in self-names by adding another category of prime in their visual search paradigm, next to participants' self-names and names of unknown people: names of people who were familiar to, but not a friend of participants. Their results yielded no significant differences in response times for identifying an 'O' among 'Q's when primed by an unknown name versus a familiar name, both being slower than when primed by one's own name. This led Alexopolous and colleagues (2012) to argue against a role for familiarity in the attention capturing properties of self-names. Unfortunately, whether the degree of familiarity of the familiar person affected the results was not considered, neither was the frequency of the included names.

Yang, Wang, Gu, Gao, and Zhao (2013) further investigated the role of familiarity in processing self-names by comparing self-names to one's mother's name and names of famous people, the former considered more familiar to the latter. Data for this study were collected using a visual search paradigm, in which participants had to identify one of these three target names among 100 unknown names as fast as possible. Once again, the results revealed superior performance for self-names. More importantly, no significant differences between response times to famous names and participants' mothers' names were found. The researchers concluded that familiarity cannot account for the cognitive advantage of attention in processing self-names. Their findings do not support a role for significance either ('important to me' versus 'not important to me'): one's own mother is clearly of more importance to oneself than famous people, although Yang and colleagues failed to define which famous names were chosen and how famous they were. Moreover, the authors overlooked the fact that one generally calls their mother *mum* rather than her first name, which may have confounded the results.

Tacikowski and colleagues (2011) overcame this potential confounder by asking the names of their participant's most significant other (e.g., partner or best friend). Contrary to Yang and colleagues (2013) and Alexopolous and colleagues (2012), their fMRI study did not find substantial differences between the auditory perception of self-names and significant other's names. Instead, very similar patterns of neural activation were observed for the two conditions. Yet the study did identify one neural region, the right interior frontal gyrus, that was activated only for self-names. Therefore, Tacikowski and colleagues (2011) argued for a far more limited role for self-relatedness and a considerable role of significance and familiarity in processing self-names.

Taken together, there is consensus among social scientists on the significant cognitive advantages in processing self-names. Linking this to emotion, it can be inferred that self-names are cognitively appraised automatically and unconsciously (Alexopolous et al., 2012) and that the behavioural response is 'paying attention' (Yang et al., 2013; Alexopolous et al., 2012; Tacikowski et al., 2011). These attention capturing properties in processing self-names suggest that self-names are highly activating, arousing words; that is, their emotional consequences are in the upper half of the circumplex model (see Figure 2). Potential feelings associated with perceiving self-names may thus range from upset, to surprise, to happy.

This section also showed that the exact nature of the cognitive advantages for self-names is controversial. It appears hard to disentangle the potential effects of self-relatedness, significance, and familiarity, and no studies were found investigating the effect of frequency on self-names processing. Furthermore, although it is clear that self-names are highly arousing stimuli, the link to emotion has not been made in previous work. It is thus unclear how people cognitively appraise their names, and consequently, whether self-names are perceived with negative or positive valence. The following section will therefore review research on subjective attitudes towards self-names.
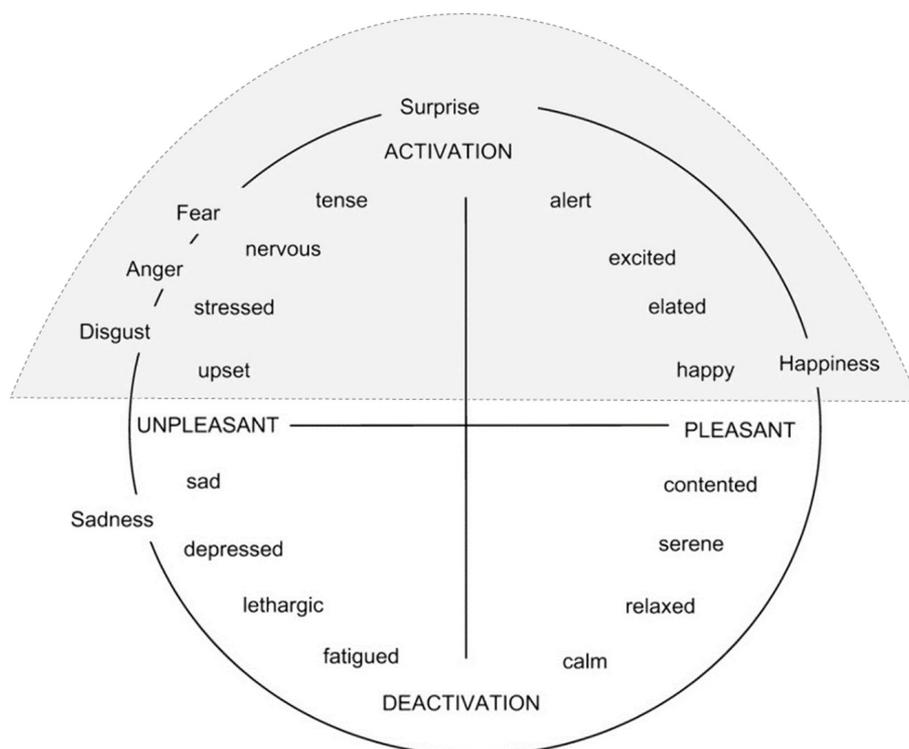
Figure 2. Location of self-names in the circumplex model.

4. SUBJECTIVE ATTITUDES TOWARDS SELF-NAMES

People's attitudes to their own names are usually assessed as whether one likes his own name (positive attitude) or not (negative attitude). Such attitudes reflect the emotional outcome of processing self-names, the feeling. Since the feeling aspect is the indirect result of the appraisal phase, this paper takes it to infer what happened in the appraisal phase, and thus, whether self-names have a positive or negative valence (i.e., pleasant or unpleasant in Figure 2 above).

Social studies typically employ self-names to show that self-related information in general is processed with a self-positivity bias, the finding that self-related information in general is typically appraised with positive valence (e.g., Watson, Dritschel, Obonsawin, & Jentzsch, 2007). It has been claimed that this reflects the generally positive implicit self-esteem (e.g., Albers, Rotteveel, & Dijksterhuis, 2009; Nuttin, 1987) that the great majority of people appears to have (Farnham, Greenwald, & Banaji, 1999; Paulhus, 1993). Implicit self-esteem is the automatic evaluation of the self, contrary to explicit self-esteem, which is characterised by conscious introspection. As one's name is claimed to be very closely associated with one's identity (Farnham, Greenwald, & Banaji, 1999; Koole & Pelham, 2003), it is considered a good measure of implicit self-esteem.

One piece of evidence for the self-positivity bias comes from the name-letter effect, people's tendency to prefer their own initials (e.g., MG) over other letters. Koole, Dijk-

sterhuis, and Van Knippenberg (2001, Study 1 & 4) have assessed this effect by using Likert scales on which participants explicitly judged the aesthetics of letters (1-not at all beautiful; 9-extremely beautiful). Participants evaluated their own initials significantly better than other letters indeed, which was interpreted as a self-positivity bias. The extent to which people liked their own initials was shown to correlate positively with implicit self-esteem (r = .48), but not with explicit self-esteem. The authors interpreted the positive correlation between explicit name-letter liking and implicit self-esteem as the two being highly related constructs. Moreover, they claimed that explicit name-letter liking represents positive self-evaluation in general, although it is highly debatable whether such conscious letter evaluation actually represents an ecologically valid construct of positivity towards oneself.

Nevertheless, Gebauer, Riketta, Broemer, and Maio (2008, Study 1) have replicated Koole and colleagues' findings by assessing the extent to which one likes his first name, rather than initials. Likert scales on which participants judged how much they liked their name (1-not at all; 9-very much) indicated that participants were on average positive about their name (M = 7.02). In addition, this positive bias towards one's own name was correlated with the name-letter effect (r = .32) and implicit self-esteem (r = .18), such that the more one likes his own name and his initials, the higher implicit self-esteem. Since the latter is claimed to be generally positive (Farnham, Greenwald, & Banaji, 1999), people may in general like their own name as well. It can thus be inferred that the average valence for self-names is positive, leading to feelings of alertness or happiness (Figure 2).

One explorative study in the field of sociolinguistics indicates, however, that the situation is more complicated (Starks et al., 2012). This study explicitly focused on people's attitudes to their own nicknames. Whereas first names are officially given to a person, nicknames are often informally established and may reflect how someone is seen by others (Adams, 2009). Starks and colleagues (2012) used a questionnaire to obtain 55 Australian students' evaluations of their own nicknames. Contrary to the suggested positive bias towards one's own first name (Gebauer et al., 2008; Koole et al., 2001), less than half of the students (47%) indicated a consistent positive attitude towards their own nickname. A qualitative analysis of participants' responses indicated that attitudes appear not to be inherent to the self-name, but instead, "highly contextually bound" (Starks et al., 2012:143). Anecdotical evidence showed, for example, that one nickname may be regarded positive when uttered by one person, while negative when uttered by another (Starks et al., 2009; Adams, 2009); and that nicknames based on names are generally evaluated more positively than nicknames based on physical characteristics – which is in line with the positive attitude to one's own name (Gebauer et al., 2008), but not with a general self-positivity bias. Thus, appraising self-names seems to yield variable attitudes, rather than an intrinsic positive valence.

In brief, the studies presented in this section show that on the one hand, liking one's first name is correlated with implicit self-esteem. Because implicit self-esteem is said to be generally positive, it can be inferred that the overall valence of self-names is positive. On

the other hand, attitudes to one's own nickname are argued to be highly context-dependent, which suggests that valence of self-names might be variable. Taken together, these findings imply that how self-names affect their owner is dependent on an interaction of several factors, including context and specific names used. Besides self-esteem, however, no research has been found that systematically surveyed what other factors might be involved in determining valence of self-names and in what way. Moreover, it is not yet clear how all these factors can be wrapped up in just one word.

5. Self-names as Emotionally Competent Stimuli
5.1 The Affective Language Comprehension model

In order to fully understand how self-names affect their owner, it is important to consider a framework that incorporates potential factors that determine the perceived valence of self-names. One model that allows for such incorporation is the Affective Language Comprehension (ALC) model (Van Berkum, 2018; see Figure 3), which asserts that word valence is determined by several psycholinguistic, emotional, and communicative components. The ALC model comprises two processing modules, located at the left side of the figure, and one memory module, located at the right. The listener (here, 'Elvis') must (a) recognise and parse the verbal and non-verbal signs produced by the speaker ('Mother'), and (b) interpret the speaker's communicative move. Recognition and interpretation of these representations are drawn upon and added to the listener's Long Term Memory (LTM); the model shows which representations are activated. Importantly, all individual representations may be Emotionally Competent Stimuli, which may trigger emotions and thus the emergence of a feeling.

In Figure 3, the ALC model is applied to the communicative action of perceiving Elvis' own name when spoken by his mother. Listener Elvis starts with recognising the word *Elvis* by phonologically and semantically parsing the verbal sign and the associated nonverbal signs (e.g., eye-contact, the mother's voice, and affective prosody). All of these components are retrieved from LTM. Importantly, all elements in already this first stage are potential ECS (marked by a red sign in Figure 3): that is, these elements might be appraised as positive or negative towards the listener's interest, and could therefore trigger an emotional response (e.g., alertness or tension). For example, Elvis may recognise his mothers' voice and her affective prosody, and infer her positive stance toward him.

Then, Elvis has to interpret his mothers' communicative move, which consists of several interpretational layers. Firstly, Elvis has to infer his mothers' referential intention, namely, that the self-name serves as a label to his own being. In line with self-processing biases, the ALC model acknowledges one's own self as an important ECS – that is, oneself is a stimulus that likely provokes emotion. As discussed before, the emotion that is triggered by the referential situation of oneself may be associated with one's implicit self-esteem (Gebauer et al., 2008; Koole et al., 2001). Secondly, Elvis needs to infer his mother's stance towards him. This is a potential ECS as well, as it once again refers one's own self. In this particular example, one could postulate that mother has an affectionate attitude towards her child, leading to positive valence.
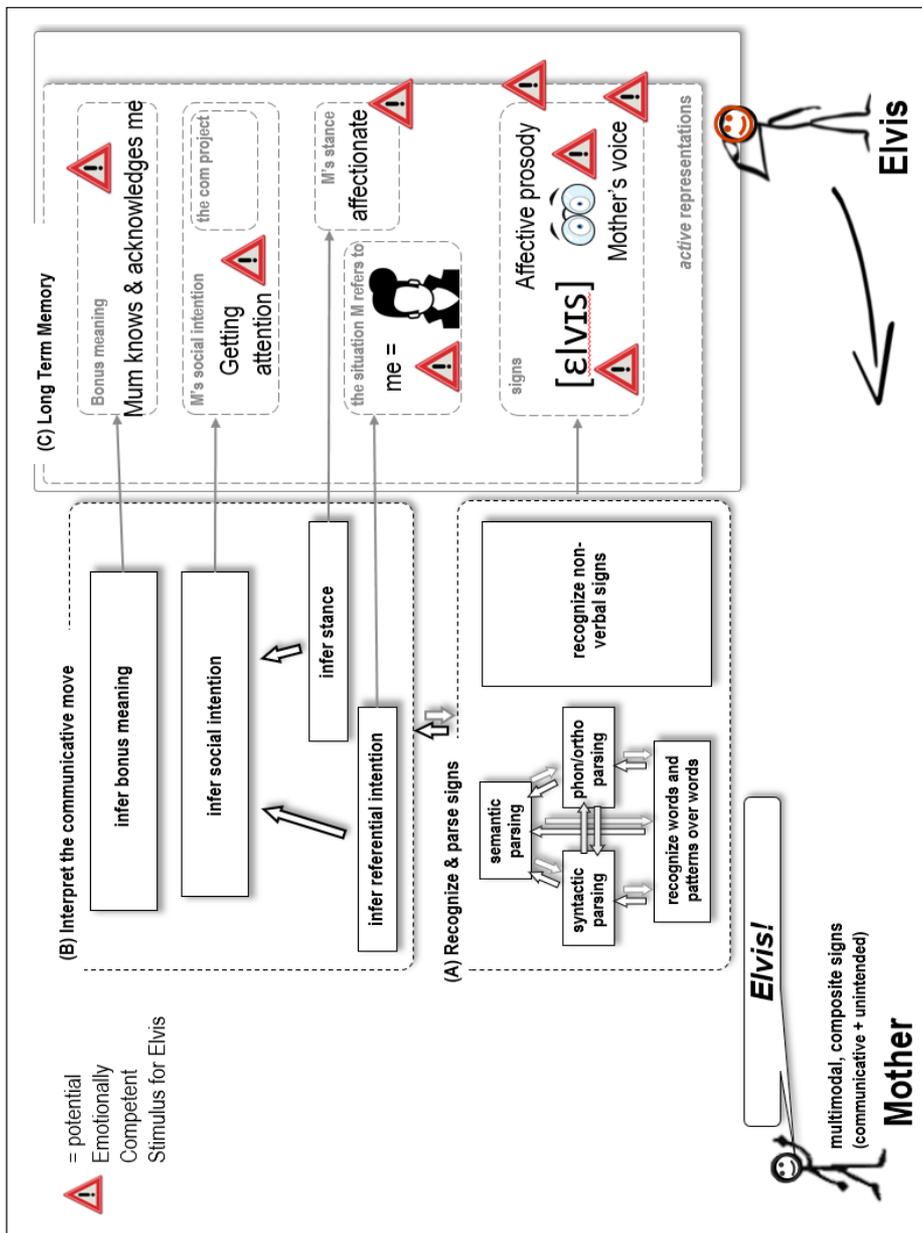
Figure 3. Self-names in the Affective Language Comprehension Model (adapted from Van Berkum, 2018). M = Mother; Com project = Communicative project.

Based on these two steps, Elvis then has to infer his mother's social and communicative intentions. A self-name may in particular be produced when a speaker wants the listeners' attention in order to bring about a joint communicative project. Once this has been established, the speaker may request or share something, or get the speaker to know something (Tomasello, 2008). The social intention of getting attention is a potential ECS too, for example when a self-name is used to warn someone.

After working out what the speaker aimed to communicate, listener Elvis might infer a bonus meaning. While this additional meaning may not have been part of what the speaker wanted to convey, it may nevertheless be computed by the listener (Van Berkum, 2018). Since self-names are closely connected to one's own existence and identity (Koole & Pelham, 2003), the bonus meaning of perceiving one's own name might be that the speaker acknowledges the listener's existence, although this would be dependent on the listeners' self-esteem. Once again, this bonus meaning is a potential ECS, since it directly touches upon one's existence.

The ALC model suggests that the ECS in all representational layers accumulated determine the perceived valence of self-names. Each potential ECS can trigger emotion, as defined in Section 2, which leads in a conscious feeling. The model incorporates findings of previous studies on self-names by hypothesising how context-dependent factors (e.g., nonverbal signs and speaker's stance), and self-related factors (e.g., the referential intention) may work together in determining the possible emotional consequences of self-name perception.

5.2 Associative learning in self-name processing
The claim that processing self-names involves multiple steps of inferences seems to conflict with the automatic, unconscious processing of self-names that was identified by Koole and colleagues (2001). However, the ALC model (Van Berkum, 2018) asserts that words themselves can acquire valence via associative learning if they are sufficiently selectively, and sufficiently reliably. As self-names have a very unambiguous, exclusive, and emotionally competent referential meaning, this section argues that self-names acquire a particular word valence, such that it encompasses all affective representations as identified in Figure 3. In other words, self-names become ECS themselves.

Associative learning is the process of several components becoming linked to one another in the LTM. Since self-names are perceived already from birth on, their affective processing, as shown in Figure 3, has been repeated extremely frequently over one's lifespan. As a result, associative learning might have associated all stable ECS (e.g., typical referential intention and typical social intention) to the self-name as a mere linguistic sign. Hence, the sign becomes a powerful Emotionally Competent Stimuli in itself, meaning that self-names are words that trigger emotions. They acquire an affective meaning, determined by all typical inferential layers that are ECS. Every time when one's name is said, the brain immediately, unconsciously activates the whole emotional package that is associated with one's name. In other words, "the appraisal leading to the emotional response is nothing more than automatic associative memory retrieval" (Van Berkum, 2018:7), leading self-names to evoke emotions very early in processing.

Nevertheless, this automatic retrieval does not dismiss that their processing is context-dependent. Due to their high frequency, only the most stable subsets of the process might get linked to the self-name. Typically, the self-name refers to the listener, the speaker's eyes are directed towards the listener, and the speaker requests the listener's attention. By contrast, facial expressions, prosody, speaker's stance, and the communicative project are variable, and thus do not get associated with the self-name itself. Consequently, when

perceiving one's self-name, the listener has to infer from those variable factors how well the speaker knows him and what he thinks of him. For familiar speakers, these variable subset of factors may be individually stored as subsets of affective self-name memory traces (e.g., positive valence for one's mother leading to a feeling of happiness, but negative valence for one's strict teacher leading to a feeling of tension), explaining the role of familiarity in self-name processing. Thus, associative learning via the ALC model acknowledges both the stable high arousal of self-names and their variable valence.

If variable factors determine the valence of a self-name, then how does the ALC model account for the self-positivity bias (Section 4)? In the first years of one's life, a self-name may be processed most frequently by one's parents. Typically, parents' attitudes towards their newborn baby are positive. One could speculate that they will produce one's self-name with positive prosody and affectionate stances. These representations may form a foundation for the affective, associative learning process of one's self-name in early infancy. Since these are clearly positive ECS, the ALC model predicts a basic positive valence for self-names, in line with the self-positivity bias.

Finally, the ALC model also tears apart the roles of frequency and self-reference in self-processing biases. On the one hand, the ALC model accounts for self-processing biases by the inference of the referential intention. When perceiving self-names, the referential intention will always be one's own self, which might be a very powerful ECS. On the other hand, the ALC model presumes a major role for frequency in light of associative learning: due to the extremely high frequency of the self-name already from birth on, multiple emotional inferences get attached the self-name itself, as discussed before.

6. Conclusion

The goal of the current paper was to determine why and how self-names affect their owner. A literature review provided two main arguments that formed the basis for the answer on this question. First, section 3 showed that self-names are highly arousing words, located in the upper half of the circumplex model. They are processed with major cognitive advantages, but studies are inconclusive in the roles herein for self-reference, significance to one's own self, their high frequency, and familiarity. Second, section 4 indicated that the valence of self-names correlates positively with implicit self-esteem and is highly context-dependent. Nevertheless, the factors that determine self-name valence are not yet studied and it remained unclear how these potential factors get associated with self-names. To address these issues, Section 5 applied self-names into the Affective Language Comprehension model (Van Berkum, 2018). The model connected major previous findings by viewing self-names as an interface between language and emotion. It suggested that self-names affect their owner because of associative learning: affective memory traces have become part of word meaning, making self-names highly arousing words that are processed automatically and unconsciously. How self-names affect their owner was hypothesised to be dependent on several variable levels of representations, including inferences of social intentions and bonus meanings. Besides, it was able to tear apart the roles for familiarity, frequency, and self-reference.

Viewing self-names as Emotionally Competent Stimuli on the interface of language and emotion has thrown up many new questions in need of further investigation. More research is required to explore the hypotheses put forward in this paper. It needs to be established whether one's first name has indeed a general positive valence. Additionally, future studies should systematically compare and quantify the emotional responses that different self-name stimuli (e.g., first names versus mispronounced names or nicknames) are able to yield. This may provide insight in the roles of familiarity, frequency, and self-reference. One could, for instance, establish a zero baseline for frequency (and hence, associative learning) by giving participants new (nick)names and test their response times in a visual search paradigm. For a more natural experiment, people that underwent a name-change could be investigated. The present study established a comprehensive framework for future investigations of the affective consequences of self-name processing. By taking a linguistic, rather than social perspective to self-names, this study added an interesting object for investigation to the rapidly expanding field of emotion and language processing. ∎

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