Colorful spleeny ideas speak furiously[1]
A passionate question at the interface of language and emotion

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A core question in the study of human language is whether it is well designed for the interaction with other systems within the broader architecture of the mind/brain (Chomsky 1995). It is assumed that these language-external but mind-internal systems impose conditions that language must satisfy to be usable at all (Chomsky 2000). This interface-approach towards the study of the language faculty obviously raises the question which neigboring systems it interacts with. In view of the traditional assumption that language is a relation of sound and meaning, it has always been assumed that there are at least two points of access from external systems. The representation of sound (PF) is accessed by the sensorimotor (i.e., articulatory and perceptual) systems and the representation of meaning (LF) by the conceptual-intentional systems (i.e., systems of thought). The nature and internal organization of these language-external systems and the ways in which they interact with the language faculty are obvious topics for continuous research. The same holds for the question what other systems the language faculty possibly interacts with (see Chomsky 2000:9, 2002:155-56).

An obvious candidate for a language-external system that also interacts with the language faculty is the emotion system, a system that deals with the assignment of (positive or negative) value (valence; "emotional meaning") to some object, event or situation (cf. Aristotle 2002, Arnold 1960, Ortony, Clore and Collins 1988), where the value can have different intensities (Spinoza's (1677/1989) "strength of an emotion", i.e., its degree of being a passion (cf. Frijda (2005:153)). Being valenced states that are about something, emotions are considered to be intentional states (Frijda 1994:199, Clore & Ortony 2000:26). The mental evaluation (so-called appraisal; see Ellsworth and Scherer 2009) of the surrounding external world (but also "inner world", as in the case of the memory of some event or person) plays a prominent role in our mental life, as is also implied by the following statement by Damasio (1999:58): "The consequence of extending emotional value to objects that were not biologically prescribed to be emotionally laden is that the range of stimuli that can potentially induce emotions is infinite. In one way or another, most objects and situations lead to some emotional reaction." This property of unboundedness has also been hinted at in connection with the emotional states that are "generated" by the emotion system. The property of unboundedness has also been referred to by Scherer (1994:28) in the context of the range of emotions that can be produced by the emotion system: "[...], many different combinations of results from stimulus evaluation checks are possible (especially since evaluation is thought to occur in a graduated fashion, determining not only the type but also the intensity of the emotional arousal). In consequence, the number of potential emotional states ([...]) is virtually infinite."

Being emotional and displaying emotional behavior is something we share with many other animals (Darwin 1872/1998). As Damasio (1999:35) suggests, however, there is

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[1] In ancient times it was thought that the spleen was the seat of emotions and passion.

something special about human emotions: "At first glance, there is nothing distinctively human about emotions since it is clear that so many nonhuman creatures have emotions in abundance; and yet there is something quite distinctive about the way in which emotions have become connected to the complex ideas, values, principles, and judgments that only humans can have, and in that connection lies our legitimate sense that human emotion is special."

Given the prominence of emotion (appraisal) in our daily life and the distinctive nature of human emotion (i.e., the ability to connect valence to an infinite range of elements and a great variety of elements), the question arises as to how the human emotion system interacts with this other special mental system of human beings: the language faculty. Thus, the following general research question can be formulated: *How is affective information formally packaged (coded) in human language? That is, what linguistic devices are available for affectively coloring linguistic expressions?* And if we narrow down this question to the domain of (morpho)syntax, this interface question can be formulated as: *How is affective information packaged (morpho)syntactically in human language? That is, what are the morpho-syntactic design properties involved in the expression of affect in human language?*

Interestingly and maybe unexpectedly given our emotive nature, the coding of emotion in language has been argued to be quite poor. Of course, we can speak about emotions such as anger and happiness in descriptive terms (i.e., what we say), as in *I am angry at you* or *This book pleases me*, but emotions seem to manifest themselves poorly in how we say things. As Edward Sapir (1921:232) formulates it: " [...] the emotional aspect of our psychic life is but meagerly expressed in the build of language." According to him, "Ideation reigns supreme in language, [...] volition and emotion come in as distinctly secondary factors;" (1921:40). Roman Jakobson (1960) acknowledges the supremacy of the expression of thought (i.e., ideation) but emphasizes "[...] that this supremacy does not authorize linguistics to disregard the 'secondary factors'." According to Jakobson, "The emotive function, laid bare in the interjections, flavors to some extent all our utterances, on their phonic, grammatical and lexical level. If we analyze language from the standpoint of the information it carries, we cannot restrict the notion of information to the cognitive aspect of language." Of course, the claim that language is primarily a tool for the expression of thought has also been made by Chomsky, both in his early work (e.g., Chomsky 1996/2009b:79) and in his more recent work: "[...] it appears that language evolved, and is designed, primarily as an instrument of thought;" (Chomsky 2009a:29).

The acknowledgment that language is primarily a tool for the expression of thought does not dismiss us from addressing the question what the supposedly meager expression of affective information in the build of human language looks like. More specifically, the following question could and should be raised: *If the linguistic expression of emotion is secondary with respect to the expression of thought, how does this secondariness manifest itself in the build of human language?*

A "linguistic engineer" who gets assigned the problem "implement (as good as you can) the affect property in language" —see Picard (1997) who raises the question about the implementation of affect in the context of computers— could implement "secondariness" by using the formal devices that are used for the expression of thought in a secondary way. That is, affective coloring of linguistic expressions involves the reuse or alternative use of available formal means. Interestingly, Pos (1935:329) already hints at this secondary nature of the expression of affect in language. First of all, he characterizes language as "une complication de la raison: Je crois que pour comprendre la sphère affective en matière de linguistique, il faut se fonder sur la langue prise comme instrument de la raison. Sur cette base, le sens

affectif apparaîtra comme une complication du langage rationnel."[2] Secondly, he characterizes this "complication de la raison" in terms of the inverse use of functional material (i.e., functional categories; "les particules"): "Mais la fonction logique des particules n'est pas la seule qui leur appartienne. Elles ont un autre emploi qui suit un sens inverse: l'usage émotif et affectif." (ibidem:328)[3]

Do we find any support for this secondary use of functional material? Since an in-depth discussion is far beyond the scope of this chapter, I will restrict myself to giving some illustrative phenomena/constructions that involve the secondary/inverse use of formal devices that are used for the expression of thought: (1) The Dutch N of N-constructions (e.g., *die etter van 'n Jan*; that jerk of a Jan), which has an expressive, evaluative meaning displays the secondary use of a singular indefinite article in front of a proper name. Normally, indefinite articles do not precede proper names (cf. Bennis *et al* 1998, Den Dikken 2006). (2) In nominal expressions involving an evaluative demonstrative (**die Jan van jullie, hoe durft ie!**; that Jan of you$_{plural}$, how dares he), the demonstrative *die*, which normally has a referential meaning and does not combine with a proper name in Dutch, has an evaluative-affective meaning and cán combine with a proper name (see also Potts & Schwarz 2010 on affective *this*). (3) Monosyllabic attributive adjectives in Afrikaans, which as opposed to bi- or polysyllabic adjectives lack inflectional morphology in their attributive use (e.g., *'n mooi kind* 'a beautiful child'; compare *'n lelik*(-e) kind* 'an ugly child'), can carry an inflection *-e* (a display of secondary use) when used affectively (e.g., *'n mooie kind!* 'a really beautiful child'). (4) The Dutch subordinator *dat* 'that', which normally introduces an embedded declarative clause, shows up in exclamative root clauses (*Aardig **dat** ze was!* nice that she was; 'She was so nice!'). (5) The Dutch diminutive morpheme *-je*, which normally only appears on nouns (*roos-je*, rose-DIM, 'a small rose'), can be attached to an adjective used adverbially, yielding an affective meaning (*Jan keek boosjes*, Jan looked angry-DIM-Adv). (6) In certain Dutch dialects (Overdiep 1937:290), a non-subject (accusative) case can appear on a subject-DP if this DP is used affectively/emphatically (**Den dònder wil vrée!**; the$_{ACC}$ wretch wants peace; 'Now the bloody guy wants peace!')

Sometimes this inverse use displays agreement/concord-like behavior in the sense that a change in the form of a word occurs depending on some property/feature of another word. In a certain way, the "coloring" property spreads over different elements in the affectively used linguistic expressions. This duplication of linguistic material typically encodes intensity. Again I will simply give a few illustrations here: (1) In colloquial Dutch it looks as if the adjectival inflection *-e* (schwa) can spread leftwards onto degree words designating a high degree (compare *een heel erg dure fiets* (a so very expensive bike) and *een hele erge dure fiets*. (2) In Kutchi Gujarati (Pritty Patel, p.c.), extreme anger situations can give rise to case-spreading: *John-**ne** rolti-**ne** khavi-**ne** ko-**ne** kidthu?* (John-acc/dat bread-acc/dat eat-acc/dat who-acc/dat said; "Who told John to eat the bread?!!"). (3) In Brabantish-Dutch, the indefinite article can be duplicated in nominal constructions expressing an extremely high degree on the evaluative adjectives: *zó'n schón 'n klèin 'n skilderééjke!* (such a pretty a small a drawing-DIM!, 'such a pretty small drawing!'); see also Kallulli and Rothmayr (2008) for determiner doubling phenomena in German dialects. (4) In Bavarian-German, we find duplication of definite articles in exclamative noun phrases like **die bsuffane Sau die!** the drunken swine the!); cf. Plank 2003. (5) The Dutch interjective expression *jee mienee!*

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[2] Translation of Pos's French text: "a complication of reason: I believe that in order to be able to understand affective mood linguistically, it is necessary to base oneself on the conception of language as an instrument of reason/thought. On that base, affective feelings will appear as a complication of the language of reason/thought."

[3] Translation of Pos's text: But the logical function of particles [where particles equals function words; NC] is not the only function they have. They have another use which follows an inverse/opposite direction: the emotive and affective use."

('Gee/unbelievable!), which designates surprise or disbelief, can have the "affective" diminutive on the last item (*jee mieneetje*) but also on both items, which represents a "spreading" pattern (*jeetje mieneetje*); see also Corver (to appear) for spreading phenomena in Dutch curse expressions.

Inverse behavior of the functional system also becomes manifest in different ways. For example, while English wh-interrogative constructions trigger V-to-C movement (*How many books did he read?'*), wh-exclamatives do not (*How many books he read!*). Also, while a "normal" wh-phrase can occur *in situ*, as in the multiple wh-construction *Who bought what?*, it is impossible to have an affectively colored wh-phrase like *what the hell* in that same position: **Who bought what the hell*?! (Pesetsky1987). Another illustration of inverse behavior comes from Gapping: in contrast with neutral declarative statements (*Jan heeft een dikke BUIK en Piet -- een lange NEUS*; Jan has a thick belly and Piet a long nose —small caps designate the word receiving sentence stress), Dutch exclamative statements with emphasis on the finite Verb in C$^\text{o}$ seem to block gapping ($^{??}$*Jan HEEFT een dikke buik en Piet -- een lange neus!*). As a final illustration of inverse behavior, we mention here coordination by means of the coordinator *en* 'and' in Dutch: this coordinator typically coordinates semantically identical elements (e.g. argument + argument, or predicate + predicate). In the following coordinated structure expressing disbelief, however, it looks as if an argument and a predicate are coordinated: *[Jan en verantwoordelijk gedrag vertonen], ik dacht het niet!* (Jan and responsible behavior display, I think it not; 'Jan displaying responsible behavior?! I don't think so!'); see also Foolen (1997).

Instead of simply coding the property necessary for affective use of some linguistic expression E directly on the functional category itself (say, F$_{[+affect]}$), one could explore the hypothesis, quite in the spirit of Reinhart (2007), that affective linguistic expressions are somehow 'deviations' from perfect representations (i.e., representations fully interpretable at the interface with the 'thought' system). The use of these 'imperfect' linguistic representations enables the expression of a particular type of information which cannot otherwise be expressed, *in casu* affective information. In a way, then, the affective linguistic expression is adjusted in the course of the derivation by 'illicit/deviant' use of lexical atoms (i.e. functional categories) and grammatical devices (agreement, displacement, coordination, lexical insertion, etc.) that are available in and recruited from the lexicon and the grammar. Compare at this point, for example, the 'illicit' use of the dummy verb *to do* in declarative clauses in order to obtain a special pragmatic effect: *John DID eat an apple!* (Chomsky 1991). From this perspective, affective linguistic expressions could possibly be characterized as formally *marked* constructions; a lexical atom or computational rule (agreement, displacement, coordination, etc.) is used in a "non-core-grammatical" (i.e., secondary/peripheral) way (see Kean 1975, Van Riemsdijk 1978 for markedness). Interestingly, Chomsky (2004:132; see also Chomsky 1981:8) characterizes this markedness as "relaxing some of the conditions of core grammar." Possibly, the morphosyntactic expression of affective information also involves relaxing the system of grammar (i.e., atoms and operations) that is at the basis of the expression of thought. In other words, the linguistic coloring (i.e., affect) of ideas (i.e. thought) is made possible by using the lexical atoms and grammatical tools for the expression of thought in a secondary way. In a certain way, linguistic encoding of affective information involves effective (maybe optimal) use of available means. A question that obviously arises in this context is the following: Is there a system that underlies this secondary (i.e. inverse/deviant/marked) use of atoms and devices in the grammar, and if so, what does it look like?

Let me close off by briefly addressing the question why the study of language at the interface with emotion is also interesting from a somewhat broader cognitive science perspective. This interface perspective forces us to take a comparative view on two systems

(the language system and the emotion system), which makes it possible to identify similarities and differences between the two systems, which again may help us in getting a better understanding of the nature and architecture of each system and the interaction between the two systems. Interestingly, some of the characterizations of the language faculty made in the generative-linguistic literature are quite similar to characterizations of the emotion system in the affective sciences. *First of all*, just like language, the emotion system is a biological system, as we can read in Damasio's (1999:51) statement that "Notwithstanding the reality that learning and culture alter the expression of emotions and give emotions new meanings, emotions are biologically determined processes, depending on innately set brain devices, laid down by long evolutionary history;" see also Scherer (2008:31). *Secondly*, just like the language system, the emotion system seems to display very limited variation. Cross-cultural manifestations of the emotion system can be characterized as minor variants on a largely uniform theme, as one can read in Damasio's (1999:53) words: "Surely enough, there are variable expressions and there are variations in the precise configuration of stimuli that can induce an emotion across cultures and among individuals. But the thing to marvel at, as you fly high above the planet, is the similarity, not the difference;" see also Ellsworth (1994:30, 45-46) and Posner, Rothbart & Harman (1994:214). This statement clearly parallels Chomsky's (2000:119) statement about variation across languages: "A rational Martian scientist would probably find the variation rather superficial, concluding that there is one language with minor variants." *Thirdly*, the characterization of being a generative, computational system —a characterization which generative linguists are familiar with for the language system— has also been given for the emotion system by certain researchers within the affective sciences. Clore and Ortony (2000:29), for example, characterize the appraisal process as an "[..] on-line computation of whether situations are or are likely to be good or bad for us [...]." And Panksepp (1994:24) argues that "Emotional systems also generate characteristic internal feeling states (which may have been the most efficient neurosymbolic way to encode incoming information with values)." *Fourthly,* the idea that a cognitive system has a certain optimal character, an idea familiar from Chomsky's (1995) Minimalist Program, can also be found in certain studies on the emotion system. Scherer (2008), for example, states the following: "But the most important type of regulation was suggested by Aristotle: one has to be angry at the right time, in response to the right thing, to the right intensity, et cetera. Therefore the emotions do have an optimalisation criterion: there is an appropriate way of feeling and expressing emotions in a given situation, because our emotions are determined by our appraisal of the situation." *Finally*, the following statement by Picard (1997:146) statement has a "third factor" flavor: "Like emotions, moods cannot be of unbounded intensity. Physiological limits are imposed at some point." There are constraints external to the emotion system proper (in casu: a physical constraint) that constrain the externalization of the intensity of an emotion.

Mister Spock, the mixed human-Vulcan character in the Star Trek series, expresses his stance on emotions by saying: "Emotions are alien to me. I am a scientist," a statement that characterizes his attempt to live by reason and logic with no interference from emotion. Of course, given Sapir's statement about the meager expression of emotion in the build of human language, linguists could take a similar stance on the study of language and investigate language purely as a tool for thought with no interference from emotion ("The study of the linguistic encoding of emotions is alien to me. I am a linguist."). However, with Jakobson, it could be argued that for a more complete understanding of the nature of human language, we will also have to include the "more peripheral" build of human language, more specifically the linguistic properties and devices that are used to encode affective information. As I have tried to show above, there are quite a number of morphosyntactic phenomena that hint at the presence of affective information in the build of human language (see also Bally 1913,

Overdiep 1937, Stankiewicz 1964, Ochs and Schieffelin 1989, Besnier 1990, Potts 2007, Corver to appear; see also Reilly and Seibert (2009) for the encoding of affect in sign language). Of course, much more descriptive and analytical work needs to be done. Keeping in mind the following quote attributed to Bertrand Russell: "the degree of one's emotions varies inversely with one's knowledge of the facts," let's hope that an increase in our knowledge of the facts regarding the linguistic encoding of emotion/affect will lead to a less emotional stance on whether or not affective information should be included in the study of human language.

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