

Negativity bias in language: A cognitive-affective model of emotive intensifiers

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Abstract

The repeated confirmation of the hypothesis of a negativity bias in cognitive psychology invited an assumption that the general asymmetry in the automatic processing of affective information should bear linguistic consequences, for language is inseparable from human cognition and emotion. This paper shows that the lexical semantics of emotive intensifiers in German, English and Chinese can be best explained in a cognitive-affective model of negativity bias. The parallel between a higher sensitivity to potentially threatening events at the neural level and the predominance of emotive intensifiers based on threat-relevant negative emotions at the linguistic level provides further evidence of the embodiment of linguistic conceptualisation. Ultimately, because the negativity bias is a vital component of our adaptive behaviour, the corresponding linguistic behaviour must be viewed as part of our dynamic system of adaptation.

Keywords: negativity bias; emotive intensifiers; threat-relevant negative emotions; metaphorical mapping; metonymic highlighting; adaptive behaviour.

1. Negativity bias

In the preface to his famous analysis of Yiddish psycho-ostensive expressions, Matisoff (2000: 119) points at the frequently encountered “deep psycho-semantic similarity” among the proverbs in very different languages. He suggests, for instance, that fear based on past experience underlies such proverbs as ‘If you’re scolded by the hot, you blow on the cold’ in Yiddish, ‘If you’ve been stung by a bee, you fear even a fly’s coming’ in Lahu, and ‘One day bitten by a snake, for ten years you fear the well-rope’ in Chinese. Critically, as we notice, the past experience named

in these metaphors is invariably unpleasant, harmful and threatening. As such it enters the victim's "emotional memory", or "implicit memory", and exercises tremendous impact on future behaviour by way of fear conditioning (LeDoux 1998: 179–182; Kihlstrom et al. 2000: 31). The enormous impact of the negative experience as illustrated by the metaphors in these proverbs captures the essence of a pervasive cognitive-affective pattern known as the negativity bias.

Generally, the negativity bias is an automatic tendency to pay significantly more attention to unpleasant than pleasant information. To put it otherwise, negative events have a greater impact on people's behaviour than positive events. This asymmetry has been repeatedly confirmed by empirical evidence (Peeters and Czapinski 1990; Skowronski and Carlston 1989; Pratto and John 1991; Taylor 1991; Cacioppo and Berntson 1994; Cacioppo et al. 1997, 1999). Furthermore, the negativity bias has been shown to occur at the earliest stage of affective processing where the "evaluative categorization", that is, the differentiation between the negative and the positive valence, takes place (Ito et al. 1998; Smith et al. 2003). In addition, two comprehensive reviews (Rozin and Royzman 2001; Baumeister et al. 2001) have noted the pervasiveness of such a cognitive-affective pattern in human existence.

Rozin and Royzman (2001) observe four manifestations of the negativity bias across a wide range of phenomena: (1) negative events are more potent than the equivalent positive events; (2) "the negativity of negative entities grows more rapidly with approach to them in space or time than does the positivity of positive events", (3) "combinations of negative and positive entities yield evaluations that are more negative than the algebraic sum of individual subjective valences would predict", and (4) "negative entities are more varied, yield more complex conceptual representations, and engage a wider response repertoire". They consider the contagiousness of negative events as the primary reason for their strength and dominance. Baumeister et al. (2001) show evidence from multiple areas including reactions to events, close relationships, social interactions in general, emotion, learning, neurological processes, child development, social support, information processing, memory, self-concept, etc. and come straight to the conclusion that "bad is stronger than good". They state:

By good we understand desirable, beneficial, or pleasant outcomes including states or consequences. Bad is the opposite: undesirable, harmful, or unpleasant. Strength refers to the causal impact. To say that bad is stronger than good is thus to say that bad things will produce larger, more consistent, more multifaceted, or more lasting effects than good things (Baumeister et al. 2001: 325).

Baumeister et al. reason that the pattern is so pervasive that it cannot be maladaptive at the evolutionary level. They argue that bad is stronger than good because bad signals the need for change which generally enhances evolutionary fitness. This idea of the negativity bias as an adaptively meaningful mechanism has been expressed by other scholars also. Pratto and John (1991), for example, argue that it is of evolutionary advantage that our attention is selective and is directed toward negative social information. They consider this attention bias towards the bad an “automatic vigilance strategy”.

2. Role of emotion in negativity bias

The notion of a negativity bias is a cognitive-affective concept. Most scholars writing about it emphasize the affective aspect of the bias which calls for a consideration of the role played by emotion in selective attention. We follow Cosmides and Tooby (2000: 93) in taking an evolutionary psychological perspective and consider an emotion as “a superordinate program whose function is to direct the activities and interactions of the subprograms governing perception; attention; inference; learning; memory; goal choice; motivational priorities; categorization and conceptual frameworks; physiological reactions [...] and so on.” On this view, emotion “orchestrates” all of our adaptive programs and, as Cosmides and Tooby argue, “is not reducible to any one category of effects, such as effects on physiology, behavioral inclinations, cognitive appraisals, or feeling states, because it involves evolved instructions for all of them together, as well as other mechanisms distributed throughout the human mental and physical architecture.” This view acknowledges the motivating and coordinating function of emotion in the individual’s interaction with the world. See also Arnold (1960: 182), Frijda (2004: 162–163), on the motivational function of emotion.

The motivational and coordinative nature of emotion is crucial to understanding the role it plays in the negativity bias. It is important to note that the greater strength, or causal impact, of bad experience is primarily due to the negative emotions unavoidably triggered by the experience. To recall the metaphors in the proverbs, being scolded by the hot, being stung by a bee and being bitten by a snake are experiences that evoke the raw emotion of fear. It is this emotion that motivates overcautious avoidance of any stimuli reminiscent of the cause of the previous harm as a self-protection strategy. Cosmides and Tooby (2000: 93) point out that in the emotional state of fear the thresholds of threat detection shift, which explains the low degree of resemblance between the trigger of the previous harm and a stimulus reminiscent of it (e.g., bee vs. fly; snake vs. well

rope in the proverbs). They state, “Less evidence is required before you respond as if there were a threat, and more true positives will be perceived at the cost of a higher rate of false alarms.”

Research on disgust by Rozin and Fallon (1987) and Rozin et al. (2000: 637–638) suggests that disgust plays a crucial part in the negativity bias. Defined as “fear of oral incorporation”, disgust is a strong emotion (a specific kind of fear!) that motivates self-protection by means of active avoidance of contagion.

Hansen and Hansen (1988: 922–923) found that an angry face in a crowd of benign or happy faces was more easily identified than a happy or benign face in a crowd of angry faces. They call such an asymmetry the “anger superiority effect” and explain it in terms of vigilance towards threat. Öhman et al. (2001: 392–394) reconfirmed Hansen and Hansen’s result and emphasize the “threat advantage” as the motivating force of the negativity bias. Critically, they point out that fear-relevancy differentiates emotional angry face from non-threatening sad face and explains the greater impact of the former. This observation enables an explicit claim that the negativity bias pertains to the threat potential rather than the negative valence of events. Our mind is tuned to threatening entities, i.e., objects, persons, and events that cause fear in us, so that we can best mobilize our attention and other bodily resources to avoid potential hazards. In this sense, we may speak more specifically of a threat bias.

Psychological research informs us that emotions that call for high action readiness are of immediate survival relevance. This point has already been made by Cannon (1929) who emphasized the greater impact of threatening stimuli on action tendencies as compared with appetitive stimuli. Anger and fear are two threat-related emotions which motivate the fight-or-flight response (Cannon 1929; Arnold 1960; Izard 1977; Frijda 1986). As can be inferred from the experiments conducted by Öhman et al. (2001), anger is eventually threat-related in that it tends to generate fear on the part of the recipient (victim) at which anger is directed. Thus, in addition to its unique ability to mobilize energy for self-defence, anger might also be regarded as a deterrence strategy from the perspective of evolution. The obvious adaptive advantage of the threat-relevant emotions anger, fear and disgust seems to give rise to the assumption that the survival relevance of the threat-related emotion associated with a negative event determines the strength of that event’s causal impact. In fact, if the negativity bias is real, it makes sense to assume that threat-related emotions that motivate our self-protection from immediate danger must be more deeply entrenched: Each time a potentially threatening event is processed, a particular negative emotion is activated in response to the perceived nature of the threat and with each activation, the degree

of its entrenchment increases. Given the role played by emotions in selective attention, the negativity bias logically boils down to the asymmetrical entrenchment of emotions: threat-relevant negative emotions are more entrenched than positive emotions.

This assumption has found physiological evidence in a number of studies (Cannon 1929; Tomaka et al. 1997; Cacioppo et al. 2000). Cacioppo et al., for instance, conducted moderated meta-analyses of the results provided by previous studies concerned with the physiological measures of discrete emotions. The results of these meta-analyses and follow-up meta-analyses suggest that the negative emotions being examined are associated with “significantly greater activation” of somatovisceral processes.

Apart from the experimental evidence, subjective evidence has been found to support the greater impact of threat-relevant negative emotions than other negative emotions or positive emotions. Parkinson (1995: 92–94) reports that very specific bodily changes are felt by informants to accompany threat-relevant negative emotions: Anger is felt to be accompanied by bodily tension, rising temperature, and feeling hurt; fear is said to be associated with feeling nausea (which is also a symptom of disgust!), cold sweat, and increased heart rates. Specific physiological symptoms are less related to happiness and sadness, two emotions that are less related to adaptively significant action readiness.

By now, the role of threat-related emotions in the negativity bias must have become obvious. Yet why do threat-related emotions have such cognitive-affective potency that they may be held responsible for the principle of the negativity bias? The answer lies in the primitive mechanism called the “system of defensive behaviour” (LeDoux 1998). Defence against danger, LeDoux argues, is probably the number one priority of any organism. Furthermore, LeDoux discusses the constant role played by the amygdala in defence against danger across all species possessing an amygdala.¹ He states:

The remarkable fact is that at the level of behavior, defense against danger is achieved in many different ways in different species, yet the amygdala’s role is constant. It is this neural correspondence across species that no doubt allows diverse behaviors to achieve the same evolutionary function in different animals. This functional equivalence and neural correspondence applies to many vertebrate brains, including human brains. When it comes to detecting and responding to danger, the brain just hasn’t changed much. In some ways, we are emotional lizards (LeDoux 1998: 174).

The primitiveness of vigilance toward threat transcends not only species, but culture as well. Matisoff’s observation of the common fear effect in

the proverbs in diverse languages is a case in point. Wierzbicka (1999: 286–287) shows that all languages have FEAR-like and ANGER-like words because these two categories document two universal impulses, namely to run away from danger and to fight in order to prevent threat. Bugenhagen (1990: 208, quoted in Wierzbicka 1999: 286) observes that in the Austronesian language Mbula, “out of all the different emotions, fear appears to have the broadest range of encodings” and he explains the linguistic phenomenon in terms of the salience of threat in the animistic society in question. In the following sections, we will address the cross-linguistic phenomenon of emotive intensification pertaining to negativity bias as a result of the entrenchment of threat-related emotions. Before we do so, however, we consider it necessary to address a closely related socio-psychological phenomenon that bears on language use, which is that of the Pollyanna effect, also known as the POSITIVITY BIAS. Specifically, we shall clarify the following issues: (i) Precisely at what levels are the two biases observed? (ii) Is there any psychological connection between the two patterns by which they may be plausibly reconciled within a coherent frame of human existence under the pressures of evolution?

3. The Pollyanna effect in relation to the negativity bias

Boucher and Osgood published a paper entitled “The Pollyanna Hypothesis” in the *Journal of Verbal Learning and Verbal Behavior* in 1969. Drawing on available data on qualifier usage, they concluded, “that there is a universal human tendency to use evaluatively positive (E+) words more frequently, diversely and facily than evaluatively negative (E–) words” or, as they put it more simply, that “humans tend to ‘look on (and talk about) the bright side of life.’” This hypothesis has been echoed by subsequent research concerned with more specific asymmetries in the use of positive and negative words (Cooper and Ross 1975; Zou 1986, 1988; Kelly 2000).

Note that these studies do not offer any explanation for the phenomenon they have discovered, but simply refer to optimism as an explanation. However, it is obvious that optimism is what the data suggest, thus it is the observation and not the explanation. One has to look outside the “box” for an explanation. Moreover, from the perspective of evolution, optimism intuitively presents more survival disadvantages than advantages and therefore requires a deeper motivation that is in keeping with the principles of adaptation. Scholars unsatisfied with optimism per se as an explanation for the Pollyanna effect have made alternative proposals. Shen (1994, 2004), for example, following Bierwisch (1967), suggests that the positivity bias can be explained by people’s tendency to consider the

good as the normal state of life and the bad as the abnormal. This explanation is problematic because the unsaid assumption, namely that what is deemed normal gets communicated more than what is considered abnormal, is untenable. If the good were the normal, then it would have been taken for granted. And what would explain all the linguistic efforts people take to talk about the good if it were something to be taken for granted? As will be argued later in this section, the opposite is more plausible—we create and use more good words in the hope that we can verbally construct a safer world for ourselves precisely because the good cannot be taken for granted in the real world. Moreover, because we use good words far more frequently, as Boucher and Osgood show, the higher frequency of good words contributes to the “entrenchment” of these words in our mental lexicon. In this sense, we may say that good words are more expected and thus it is more normal to use good words than to use bad words; but this does not mean that the good side of life in real world is normal. Also, as we know, what is considered normal varies greatly from culture to culture.

Returning now to the two questions about the distinction and relation between the negativity bias and the Pollyanna effect, raised in the closing paragraph of the last section, we shall point out a number of facts that will guide us towards a unitary explanation for the two seemingly contradicting phenomena.

First, the negativity bias has not only been observed in self-report investigations and task-based psychological experiments. More importantly, it has been found in process-based experiments to be a rapid (occurring within 100 milliseconds after stimulus onset) automatic affective processing pattern that is quantifiable in terms of attention allocation at the neurophysiological level (Smith et al. 2003). The Pollyanna effect, on the other hand, is observed at the level of language use. The fact that the negativity bias takes place at the neural level of attention allocation and that it operates at the evaluative-categorization stage (Ito et al. 1998) implies that it is part of our biological heritage that operates automatically and is largely unfiltered by higher level cognitive processes, social norms and cultural imperatives (Cacioppo et al. 1999). By contrast, language use and especially the choice of qualifiers wherein the Pollyanna effect has been found to be pervasive, primarily reflects learned symbolic behaviour that is oriented to the construction of a meaningful social world in the sense of social semiotics (Schütz 1932; Cohen 1985; Hodge and Kress 1988). Thus, this level of observation pertains to social factors such as the maintenance of face, politeness, the presentation of self, etc. that constrain symbolic interaction in general and language use in particular (Brown and Levinson 1978; Halliday 1978; Goffman 1959, 1967, 1969,

1981). In the sense that language use is subject to social norms, our lexical behaviour must be viewed as what Goffman (1959: 22–76) calls “social front” or “performance” that presupposes an audience whose reactions are of social importance to us. According to Goffman, people tend to “select” suitable fronts in their performance by avoiding undesirable actions to embody certain “ideal standards”. He states, “If an individual is to give expression to ideal standards during his performance, then he will have to forgo or conceal action which is inconsistent with these standards.” (p. 41).

Thus, it seems logical to assume that we prefer the use of positive words over negative words because they conform with shared social standards and expectations. This assumption leads us to the question regarding the relationship between the negativity bias and the Pollyanna effect. It is crucial to understand that, although the two patterns are observed at two empirically distinct levels, they are not two separate matters at the phenomenological level. Instead, as will be discussed in the subsequent paragraph, they are related with regard to the fundamental human affective experience crucial to our survival as a species. The meaning of such a relation lies without each individual phenomenon and points to the more general domain of a universal subjective reality (Luckmann 1992; Soeffner 1987).

Specifically, we may argue that the Pollyanna effect is in principle a reflection of a larger socio-semiotic theme that also encompasses other forms of linguistic behaviour such as euphemism and the language of political correctness. Crucially, the central mechanism underlying these verbal strategies is the avoidance of what David Crystal calls “taboo vocabulary” (Crystal 2006: 127–133). That is, these positive strategies are based on the presupposition of the negativity of certain codes that are considered harmful, embarrassing or offensive.

In the sense that universally verbal choice is shaped by an awareness of *wordrisks*, to adopt Crystal’s concept, and a desire for auspiciousness, harmony and other things along similar lines, the Pollyanna effect, very much like the eternal “euphemism treadmill”, to use Steven Pinker’s (1994) words, is ultimately motivated by fear and avoidance of the negative.² Thus, while the Pollyanna effect does mean that humans tend to talk about the bright side of life, this is not the same as *looking on* the bright side of life. Positive words help us construct the bright side of life and protect us from the uncomfortable truth of the dark side. We use more positive words than negative words hopefully to stay out of trouble. On this risk avoidance view, our aversion to negative words in language use is best understood as being motivated by our instinctive vigilance towards potential threats. Consequently, the positivity bias must be

thought of as derivational and inexplicable without reference to the negativity bias.

On the other hand, the Pollyanna effect might contribute to the “success” of certain “bad” words in creating desired interpersonal effects in speech. Specifically, because good words are “entrenched” and normal in the world of language use, particular “bad” words are likely to stand out as “thrillers” with heightened illocutionary force. See Wierzbicka (2002) on the non-adjectival use of *bloody* in Australian English and its sociocultural indications. This point will be further addressed in 4.2 with regard to the metonymic mapping of the semantics of negative emotion words into the semantic intensity they express.

4. Negativity bias in language—the case of emotive intensification

Having discussed the pervasive negativity bias and its threat-relevant emotional nature, we shall now turn to language to seek reflections of this cognitive-affective pattern. While the phenomena discussed by Matisoff, Wierzbicka and Bugenhagen should certainly be regarded as linguistic evidence of the negativity bias, these scholars did not explain their observations in explicitly cognitive-affective models. As will be reported in this section, we encountered an asymmetrical representation of emotions as the affective resource of the linguistic system of emotive intensification. Specifically, threat-related negative emotions more than any other emotion predominate the process of emotive intensification. This asymmetry can be observed cross-linguistically and it resists explanation at the lexico-semantic level. We cannot fully understand such a pattern without reference to the cognitive-affective reality of the negativity bias or, more concretely, the threat bias as a vital component of our adaptive behaviour.

Before setting out to analyse the emotive intensifiers, a note about their functions in language is in order. Emotive intensifiers are linguistic signs that are used (1) to boost the speaker’s illocutionary force and especially to maximize the dramatic effect in communication and (2) to elicit attention from the hearer in conversation and, under certain circumstances, (3) to establish rapport between interlocutors. In serving these functions, their meanings are non-descriptive and resist a literal reading. Because of their intersubjective nature, emotive intensifiers must be distinguished from common degree words that are used ideationally for the purpose of evaluation. For an example, consider the emotive intensifier *schrecklich* in (1):

- (1) *Das Essen muss heiß sein. Und wenn meine Latte nicht genug Milchschaum hat, bin ich persönlich beleidigt. Aber ansonsten bin eigentlich*

die meiste Zeit über schrecklich gut gelaunt. Vor kurzem fragte mich mein Freund, ob etwas nicht stimmt. Ich sei so normal . . . (Teleschau, der Mediendienst, January 2007)

‘The food has to be hot. And if my latte doesn’t have enough froth, I’m personally insulted. But otherwise most of the time I’m in a terribly good mood. Recently my friend has asked me if something was wrong. He said I was so normal . . .’

Here, the literal sense of *Schreck* ‘fright, horror’ is latent while the high emotive intensity associated with fright and horror is active. Because of this emotionality, the utterance enacts the speaker’s attitude towards, and emotion about, his state of being in a good mood. By contrast, a common degree word such as *sehr* ‘very’, as in (2), communicates a positive evaluation that is more or less accountable.³

(2) *Alle diejenigen, die nur wenig abspecken möchten und sich halbwegs gesund ernähren, können das mit Hilfe solcher Eiweißdrinks sehr gut erreichen.* (www.apotheke2u.de, January 2007)

‘All those who wish to slim down only a little bit and eat halfway healthy, can very well reach this goal with the help of such protein drinks.’

Note also that example (1) and (2) also differ in terms of discourse type. Example (1) is a personal account of subjective experience and example (2), by contrast, is an impersonal instruction typical of a health guide issued by a pharmacy. The difference in discourse type corresponds to the difference between emotionality and the lack thereof as signalled by the respective signs. Like the German degree word *sehr*, English *pretty*, *fairly*, *quite*, *very* and many others and Chinese *xiangdang* ‘quite’, *hen* ‘very’, *shifen* ‘completely’, etc. do not work to enact the speaker’s emotion but provide accountable subjective evaluations of measurable degrees and thus are not considered as emotive intensifiers. This distinction may be mapped onto the distinction between “ideational subjectivity” and “interpersonal subjectivity” in terms of de Smet and Verstraete (2006). The unaccountability of the literal sense of the emotive intensifiers distinguishes them from other “boosters” defined in scalar terms (Bolinger 1972: 17).

Given the distinctive function and the high degree of intersubjectivity of the emotive intensifiers, they stand out as one of the most obvious linguistic categories in which we can expect reflections of the pervasive cognitive-affective pattern known as the negativity bias.

Because the goal of this paper is to explore the conceptual connection between the cognitive-affective principle of the negativity bias and the lexical semantics of the emotive intensifiers in language, we are not primarily

concerned with the quantitative distributions of the linguistic items being discussed. We do, however, try to use available authentic examples as illustrations of the phenomenon at hand.⁴

4.1. *Threat-relevant emotive intensifiers*

We investigated emotive intensifiers in Chinese, German and English and found that the lexico-semantics of emotive intensifiers in these languages are overwhelmingly motivated by threat-relevant negative emotions, namely fear, disgust and anger.

4.1.1. *Fear.* Fear-motivated emotive intensifiers fall into three types: (1) pronouncing fear; (2) naming cause of fear and (3) depicting bodily symptoms of fear. In the paragraphs that follow, we shall examine each type in detail and attempt to make cultural inferences from the psychosemantics of the emotive intensifiers wherever appropriate.

The first type typically contains a morpheme denoting a fear-like affective state, as in the English items *terribly*, *dreadfully*, *awfully*, *an awful lot*, and *horribly*, German *furchtbar* ‘terribly’, *fürchterlich* ‘terribly’, *schrecklich* ‘horribly’, and Chinese *de-kepa* ‘frighteningly’, *de-xiaren* ‘scary’.

The second type contains a morpheme denoting a perceived cause or elicitor of fear such as ‘monster’, ‘giant’, ‘burglar’, ‘non-home’, ‘violence’, ‘murder’, ‘sin’, ‘hell’, ‘blood’ and ‘death’. These elicitors of fear are featured in the English items *monstrously*, *gigantically*, *murderously*, *a hell lot*, *sinfully*, *bloody* (adv.), and *deadly*, the German items *Riesen-* ‘giant, gigantic’, *monströs* ‘monstrous, monstrously’, *unheimlich* ‘unhomelike, awfully’, *gewaltig* ‘violently, extremely’, *mörderisch* or *Mords-* ‘murderously’, *höllisch* ‘like hell, hellish’, *sünd-/sündhaft* ‘sinfully’, *teuflisch* ‘devilish’, *wahnsinnig* ‘crazy, insanely’ and *irre* ‘crazy, insanely’, and the Chinese *zei* ‘burglar-like’, *de-yaoming* ‘life-taking, life-demanding’, *de-yaosi* ‘will die’ and *sile* ‘to death, dead’. English and German correspond rather neatly in most cases, taking monsters, giants, murder, sin, and hell as causes or elicitors of fear. Such a correspondence reflects to a great extent shared cultural tradition. Individual differences between these two languages, however, do exist. For example, consider the German item *unheimlich* in (3):

- (3) *Die Zeichnungen sind unheimlich süß und für Kinder von 9 Monaten bis 99 Jahren richtig schön anzusehen.* (www.amazon.de, January 2007)

‘The drawings are terribly sweet and really nice to look at for children between 9 months and 99 years.’

The word *unheimlich* meaning literally ‘un-home-like’, does not have an English cognate. This invites the inference of the extraordinary value assigned to the familiar or, for that matter, an extreme aversion towards the unfamiliar. On the other hand, German has two emotive intensifiers that are lexico-semantically associated with the absence of sanity, i.e. *irre* ‘crazy’ and *wahnsinnig* ‘insane’, as in (4):

- (4) *suche gepflegte nette Unterhaltung bis irre viel Spaß bei Freizeitaktivitäten.* (www.cluburlaub.de, January 2007)

‘looking for cultivated nice entertainment to the extent of an insanely lot of fun in spare time activities.’

Here we may argue that mental disorder is perceived as a source of great concern and even threatening in the German-speaking world. It seems that the vague fear of loss of control assigns emotional weight and intensity to the state of insanity.

In some Old Germanic dialects, the word denoting ‘sinful deed’ is used as an emotive intensifier. The Old Saxon prefixoid *firin-* (the nominal is *firina* ‘sinful deed’) is a case in point.⁵ Stevens (2000, 2002) shows that *firin-* contributes to the meaning of the second element to which it is attached, but not as a noun. For examples, *firinquâla* means ‘great torment’ (*quâla* ‘torment’) and *firinsundia*: means ‘great, severe sin’ (*sundia* ‘sin’). Therefore, he concludes that *firin-* is an intensifier, comparable to modern English *sinfully* and German *sündhaft*, as, for example, in (5):

- (5) *Sündhaft lecker, aber keines Wegs sündhaft teuer ist unser Torten-und Kuchensortiment.* (www.dahlback.de, January 2007)

‘Sinfully delicious, but in no way sinfully expensive is our offer of cakes and pies.’

Morphologically, the Old Saxon *firin-* very much resembles the prefixoid *sünd-* in the Austrian dialect, as in *Anfahrtskosten bei Handwerkern sündteuer* (www.wcm.krone.at, January 2007) ‘It’s sinfully expensive to send for a craftsman.’ From the perspective adopted in this paper, it is not surprising that the word meaning ‘sinful deed’ could develop into an emotive intensifier. Its semantics is emotional and especially threat-relevant in the sense that a sinful deed is a serious offense against the law of a certain higher power, thus threatening at the religious and/or moral level.

Compared to German and English, Chinese employs a more limited lexical resource for emotive intensification. The most used emotive intensifier in Chinese has to do with the threat posed by death more than anything else, e.g. *sile* ‘dead-PFV’, as in (6) and *de-yaoming* ‘life-threatening’, as in (7), both being used as postverbal extentatives. The use of the fear-

related intensifiers *de-kepa*, *de-xiaren* is limited to the language of the youth.

- (6) *renshi ta zhenshi mei sile!* (www.ynet.com, January 2007)

‘To know her was wonderful to death!’

- (7) *Mai lou shi dui women hao de-yaoming*, *ke zhu jinlai chuchu shi xian-jing!* (www.junjing.net, January 2007)

‘When we were buying the building, [they were] terribly kind to us, but after we moved in, there were traps everywhere!’

It seems that the Chinese dread nothing more than mortality which is naturally the ultimate fear factor besetting humanity because, as Becker (1973) and Rozin (1999) suggest, it is the most unknown and threatening factor to humans. Death as the conceptual source of emotive intensification is also known to speakers of English and German as in *They're frightened to death of water* (Andersen, 1992: 202), though the use is rarely extended to describe positive events as can be frequently observed in Chinese.

Taken together, most entities denoting elicitors of fear can be categorized as the unknown which is naturally perceived as scary, though they may be felt to represent varying degrees of threat. The strange nature of the fear stimuli has long been acknowledged in the psychology of fear where novelty or strangeness is considered one of the natural clues of fear (Izard 1977: 358–359). In this sense, despite the cross-cultural variation in the perception of triggers of fear among the languages, the emotion of fear can be identified as the shared motivation.

The third type of fear-motivated emotive intensifiers describes the experiential and especially the bodily symptoms of fear such as freezing or constriction, a bodily experience resulting from and accompanying fear as embedded in *stupendously*. Tremor, another fear symptom, can be uncovered in *tremendously*, as in the following example from *The Emperor's New Clothes*:

- (8) *Many years ago there lived an emperor so tremendously fond of fine new clothes that he spent all his money on rigging himself out.* (Andersen 1992: 103).

Though the literal sense of the fear symptoms is bleached or lost in the intensifiers which have come to signal high emotive intensity, the affective source can be reconstructed.

4.1.2. *Disgust.* Disgust is a resistant reaction to threat posed by an offensive or contagious object. It is an innate emotion to protect us from

eating dangerous substances (such as spoiled meat, excrement etc.). Disgust has been considered an emotion closely related to fear. Rozin and Fallon (1987) define core disgust as “fear of oral incorporation of an offensive object”. The term *core disgust* refers to disgust at the physical as opposed to the social, psychological or moral level. Animals (including humans) and their body products are considered the central and universal offensive entities as elicitors of disgust (Rozin et al. 2000).

In the linguistic domain of emotive intensification, we observed two German prefixoids, *stink-* ‘stink’ and *sau-* ‘sow, pig’, that seem to be motivated by the emotion of disgust. Both prefixoids have developed from full lexical entities whose referents can be categorized as associated with animals or their bodily products, thus denoting elicitors of disgust. The Germans say *bin stinksauer über Werbemails* (www.forum.golem.de, January 2007) to mean ‘I’m terribly angry about junk mail’. The English expressions *stinking rich* and *filthy rich* are equivalents to German *stinkreich*. Obviously, the use of the morpheme *stink* demonstrates that the olfactory intensity of foul odour in the sensory domain of smell is mapped into the realm of emotive intensity.⁶ The intimate connection between smell and emotion underlying the mapping from the domain of olfaction to that of emotion, in fact, holds up to empirical evidence found in brain research. Herz et al. (2004) provide neuroimaging evidence for the emotional potency of odor-evoked memory. Herz (2001) points out that “only two synapses separate the olfactory bulbs from the amygdala, which is involved in the expression and experience of emotion”. This uniquely direct neuroanatomical connection, she argues, is crucial to understanding why associations between smell and emotion are readily formed. In this sense, the German language, it seems, is very much in touch with our bodily, specifically our olfactory, experience of emotion.

While the negative connotation of offense and repulsiveness remains in the semantics of the emotive intensifier *stink-*, the prefixoid *sau-* has completely risen above its lexical origin *Sau* ‘sow, pig’, a widely held prototype of filthy, disgusting creatures, to signal high emotive intensity without any negative aftertaste. Thus the advertisement logo *billiger als saubillig und saugut* ‘cheaper than dirt-cheap and awfully good’ (www.forum.geizhals.at, January 2007) is apt to express the attitudinal intensity with which the advertisement is aimed to impress the consumer.

4.1.3. *Anger*. In the context of evolution, anger has great functional significance related to self-defence. In the civilized world, however, anger has acquired a negative reputation as the most destructive emotion in the context of an individual’s social transactions with his relevant others. From the viewpoint of the recipient, anger can be frightening and the

fear on the part of the recipient may contribute to the perceived emotional potency of anger, as has been discussed in Section 2. Display rules in different cultures require appropriate expressions of anger and especially in the Western cultures, anger is subject to management. As far as the linguistic device of emotive intensification is concerned, however, the emotion of anger is found to play an important role in English and German. The expression *damn(ed)* in English and its German cognate *verdammt* are two favourite emotive intensifiers. Consider (9) and (10) below:

- (9) *It was a heady, exciting time in Washington. The days had the tang of high adventure, and the men around him found the President's enthusiasm contagious. He had learned how to take it and catch on quickly, explained Jack Kennedy, for two reasons: "Going through that campaign and being in the Senate." For the young President it was the best of times. "This," he said, "is a damned good job."* (www.time.com, January 2007)
- (10) *Hier in der Hütte über dem Fluss ist es verdammt schön und gemütlich.* (www.br-online.de, January 2007)

'Here in the hut over the river it is damned nice and cozy.'

These two emotive intensifiers are unique in origin. They originate from the verbal act of invoking a higher power to inflict calamity on some indefinite other. That is to say, they originate from impersonal cursing or what Matisoff (2000: 71–88) kindly terms “allo-malo-petitive”, which is by nature an expression of anger more than anything else. The identification of the speech act of cursing as the origin of the intensifiers in question is crucial to understanding the emotion of anger as the underlying motivation of the intensifier, for anger is associated with the impulse toward aggressive and punitive actions. According to Frijda (1986) and Frijda et al. (1989), anger pertains to the action-readiness mode *antagonism* defined as the tendency to remove obstacle, hurt, oppose or resist. Such a tendency can be verbal as well as physical and kinetic. Parkinson (1995: 77) argues that verbal action tendencies are an important component of action tendencies associated with emotion. With regard to anger, he maintains that “anger may involve a tendency to hit out at someone either using your fists or by saying something hurtful to them.” Within the cognitive model proposed by Lakoff and Kövecses (1987), emotion concepts are considered as containing a scenario structure. In the case of *damn(ed)* / *verdammt*, the act of damning as an act of retribution seems to fit into the final stage of the anger scenario. It is arguable that nothing can be more hurtful than the outspoken wish of damnation. The

connection between the lexico-semantics of the intensifier and the emotion of anger is established via the pragmatization of the particular speech act of cursing. It is the severity characteristic of anger and the anger-oriented notion of damnation that enables the emotive use of *damn(ed) / verdammt* as an intensifier.

It is noteworthy that German speaking informants report that *verdammt* is more appropriately used by male than by female speakers. Native speakers of English tend to share the same judgment with regard to the use of *damn(ed)*.⁷ This is an interesting point because it reveals, though indirectly, gender difference in cultural display rules regarding verbal expressions of anger. Are males more tolerated than females for their verbal leakage of anger? Given the conceptual connection established between anger and the intensifier in question, the answer is likely to be positive, even though the contrast in tolerance seems to work at the unconscious level. Studies of socialization of anger expression corroborate this claim. Radke-Yarrow and Kochanska (1990) report that girls were more likely to be ignored for their anger while boys were more likely to be rewarded by receiving attention for their anger. This gender-related asymmetry in the socialization of anger concurs with the gender-specific use of the anger-motivated emotive intensifier *damn(ed) / verdammt*.

In contrast to English and German, Chinese does not have a distinct morpheme corresponding to *damn* or German *(ver)dammt*-. The foreign concept commonly translates to *gai-si* 'deserving death', thus again confirming the prominent emotional potency of fear of mortality in this culture. The unavailability of anger as a conceptual source of Chinese emotive intensifiers may be link to the unacceptability of anger-related behaviour as determined by the need to maintain face in relation to the cultural preference of interdependency and harmony (Xiao 2004: 22–24; see also the contributions in Huang 2004). Here, the role played by culture in linguistic conceptualisation seems to suggest itself (Kövecses 2005; Yu 1998). In fact, culture specific religious approaches, philosophies, display rules, and even cultural priorities concerning health strategies may all provide clues to understanding the typological difference between Chinese and the two European languages (Yu 1995; see also the contributions in Matsumoto 2001). Yet to draw any inference about such cultural constraints would require substantial studies of all the possible cultural variables and the way they interact in exercising influence on the conception of affect and the linguistic consequences of the emotional unconscious to which the lexical semantics of the emotive intensifiers apparently pertains. Such a task is beyond the range of this paper and will have to be undertaken elsewhere.

In this section, we have discussed the critical role of threat-relevant negative emotions in the conception of linguistic emotive intensification. Specifically, we have made the important observation that fear, disgust, and anger, three most negative emotions, serve as the affective motivations of the linguistic system of emotive intensification. This observation provides linguistic evidence of the pervasive cognitive-affective principle known as the negativity bias. The motivational role played by these raw emotions in language is attributable to the overwhelming intensity with which they are experienced as an automatic response to potential dangers and threats, which suggests the great impact of emotion on our linguistic behaviour.

4.2. *Metaphor and metonymy*

The primary cognitive mechanisms that are operative in the conception of emotive intensification are metaphor and metonymy. On the one hand, emotional intensity is metaphorically mapped onto semantic intensity. This metaphorical mapping between the emotional domain and the linguistic is made possible by the metonymic understanding of both domains in terms of their most noteworthy element—HIGH INTENSITY. In this sense, it is conceptually plausible to speak of a metonymic motivation of the metaphorical mapping as proposed by Barcelona (2000) and Radden (2002). On the other hand, an emotion is metonymically activated by a cause/trigger or symptom/effect of a negative emotion. This metonymic mapping is succeeded by a trans-domain metaphorical mapping from emotional intensity onto semantic intensity. In any case, it seems that it is the joint operation of metonymy and metaphor that underlies the linguistic conceptualisation of emotive intensifiers. Let us now consider the details of the two processes.

As has been discussed in the previous sections, threat-relevant negative emotions serve as the cognitive-affective source of emotive intensification in language. This process is known as metaphorical mapping between conceptual domains within the framework of cognitive linguistics (Johnson 1987; Lakoff and Johnson 1980; Lakoff 1987, 1990; Lakoff and Turner 1989; Sweetser 1990; and many others). Threat-relevant negative emotions belong to the emotional domain which is the source or donor domain. Emotive intensification belongs to the linguistic domain which is the target or recipient domain. The transfer of attributes from the source domain to the target domain is a metaphorical mapping. In the process of metaphorical mapping, the transfer of attributes from the emotional domain to the linguistic domain can only be partial. The selection of attributes to be transferred is termed “metaphorical highlighting” (Kövecses 2002: 79–91). Metonymic mapping, also called metonymic highlighting

or domain highlighting, refers to the cognitive mechanism whereby a mapping occurs between two (sub)domains within a domain matrix. That is, the source domain and the target domain are located within the same domain matrix (Croft 2003; Barcelona 2003a, 2003b).⁸

It is important to note that for the process of trans-domain metaphorical mapping via metaphorical highlighting to be effective, the abstract similarity or structural correlation between the two domains must be *recognized*. The recognition of similarity and correlation involves a source-internal and a target internal metonymic mapping. That is, the conceptual link between the emotional domain and the linguistic domain is established by understanding both domains metonymically in terms of their most salient quality—HIGH INTENSITY (Barcelona 2000; Radden 2002). For example, the conception of *schrecklich* ‘horribly’ as an emotive intensifier involves the following conceptual processes: Within the source domain the emotion of fear (horror) is metonymically reduced to the high emotional intensity it entails by the principle of the negativity bias, i.e., NEGATIVE EMOTION IS EMOTIONAL INTENSITY. Within the target domain the semantics of a negative emotion word is metonymically reducible to its emotive intensity (thus the deactivation of the literal sense), i.e., MEANING OF NEGATIVE EMOTION WORD IS SEMANTIC INTENSITY. This metonymic highlighting of the semantic intensity of negative emotion words may be directly enabled by a negativity bias whereby negative emotion words automatically elicit heightened attention, as suggested by Holt and her colleagues (Holt et al. 2005) and Pratto and John (1991). It is nevertheless possible that the Pollyanna effect contributes to the heightened attention paid to negative emotion words: Positive words are more entrenched and more expected in verbal communication than negative words such that negative words come as a shock and receive more attention. With the common feature of HIGH INTENSITY being recognized metonymically, the emotional intensity in the source domain is metaphorically mapped onto linguistic intensity in the target domain.

As for the type of emotive intensifiers that are based on a certain trigger/symptom/act of an emotion as the conceptual source, similar cognitive processes are at work. For an example, let us consider the German intensifier *Riesen-* ‘giant’ as in *Riesenerfolg* ‘gigantic success’. In this case, a ‘giant’ in the subdomain of fear stimuli, which is the source domain, is metonymically highlighted and mapped into the emotional subdomain of fear, which is the target domain. The mapping takes place within the domain matrix of emotion. This type of metonymic mapping has been referred to as metaphor by Kövecses (2000) who suggests that many emotion metaphors fit into the schema EMOTION IS THE CAUSE OR EFFECT OF EMOTION. Such a schema describes part of the conceptual operation of

this type of emotive intensifiers. The other part of the cognitive operation is, again, a metaphorical mapping from the emotional domain into the linguistic domain, whereby emotional intensity is metaphorically understood as linguistic intensity. This metaphorical process, in turn, is enabled by the double domain-internal metonymic mapping that “recognizes” HIGH INTENSITY as the abstract correlation between the two domains in question, as has been explained in the previous paragraph.

The discussion in regard to the cognitive processes operative in the conceptualisation of emotive intensifiers shows that the interaction between metaphorical mapping and metonymic mapping is at work both in those intensifiers that directly name the underlying negative emotion and in those that contain a related entity which is either an elicitor (e.g., monsters, giants, hell, death etc. elicit fear; stench and dirty pigs elicit disgust) or a symptom (e.g., tremor and constriction accompany fear) of the negative emotion or an act motivated by an emotion (e.g., damnation as motivated by anger).

In this section, we have explained the cognitive processes enabling the conception of emotive intensification in language by showing how metaphorical mapping and metonymic mapping and their interaction serve to bridge the conceptual gap between the experience of negative emotions and the linguistic behaviour of emotive intensification.

5. Summary and implications

Negativity bias is a pervasive cognitive-affective pattern. Threat-relevant negative emotions including fear, anger and disgust exercise greater power on our cognition and linguistic behaviour. In the light of the negativity bias that characterizes our selective attention in affective processing, the lexico-semantics of the emotive intensifiers under investigation are no longer arbitrary. The asymmetrical entrenchment of emotions motivates and explains the peculiar lexico-semantics of emotive intensifiers that are otherwise inexplicable. Metaphorical mapping and metonymic mapping are two cognitive processes that enable the bridging between the domain of emotional experience and the linguistic domain of emotive intensification. The bodily and especially the neurophysiological reality of the negativity bias soundly evidences the mind-body connections in the linguistic phenomenon of emotive intensification, thus pointing towards a universalism in asymmetrical emotion experience and its impact on the linguistic conceptualisation of emotive intensity. The implicit connection between the negativity bias as a biological mechanism of vigilance towards threats and the Pollyanna effect as a sociolinguistic pattern of avoiding social risks suggests a continuum between nature and nurture.

The cognitive-affective model of emotive intensification in language adopted here has the following implications for linguistic research. First and foremost, theories of linguistics cannot be constructed in isolation from empirical research on human psychology, especially principles that govern our cognitive-affective behaviour. The latter affords us powerful tools to analysing linguistic phenomena that must otherwise be considered arbitrary. There seems to be a great methodological necessity and urgency to consult neuroanatomical findings concerning cognition and emotion in linguistic research (Dąbrowska 2004).

The second implication is closely related to the first one but focuses on the more concrete analytical process. Cognitive linguistics in the tradition established by Langacker, Lakoff and their followers has taken particular linguistic structures as a starting point from which to make various inferences about human cognition. Such a process has brought forth important insights regarding human cognition. One of the most influential findings is embodiment, i.e., abstract concepts are understood in terms of bodily experience. Metaphorical mapping and metonymic mapping have been identified as the mechanisms operative in embodiment. However, this analytical direction can be limited by individual linguists' intuition and introspection in the absence of actual neuroanatomical findings about cognition (Evans and Green 2006: 780–781). The study conducted in this paper works in the reverse direction. Critically, the knowledge of a certain cognitive-affective pattern based on empirical research is taken as the starting point from which to build a working hypothesis with regard to language, namely that such a pattern as part of a dynamic adaptive system would have had linguistic consequences. This analytical process proves fruitful because it offers a deeper grounding of the linguistic phenomenon in question by putting it in the broader context of the dynamic human adaptive system including cognition and emotion. In addition, such an approach actually leads to the identification of metaphorical and metonymic mapping without solely relying on intuition with regard to the embodiment of linguistic conceptualisation. Therefore, we may suggest that the direction taken here, i.e., that from cognitive patterns toward linguistic patterns, can be complementary to the analytical direction adopted by cognitive linguists in the Langacker and Lakoffian tradition. Gibbs has convincingly argued for the importance of treating cognition as dynamical systems that “cut across brain-body-world divisions”. He writes:

[... A] dynamical view aims to describe how the body's continuous interactions with the world provide for coordinated patterns of adaptive behaviour, rather than focusing on how the external world become represented in the inner mind (Gibbs 2006: 10–11).

The analysis conducted in this paper undoubtedly confirms the explanatory strength of the dynamical approach advocated by Gibbs. Such an approach can explain language use as part of the adaptive cognitive-affective system in which neurophysiological activities and communicative intents together shape patterns of linguistic conceptualisation.

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1. For detailed neurological findings on the role of the amygdala in vigilance and emotion, see Aggleton (1992), Davis and Whalen (2001), Whalen (1998), and Rasia-Filho et al. (2000).
 2. In his discussion of the avoidance of “harmful” words, Crystal (2006: 130) states, “We are all suspicious about some names, even if we don’t really believe we are superstitious. Which of us would call our new boat *Titanic*?” The same reasoning applies to the statistic fact that after 1942 the popularity rank of the male first name *Adolf* to give to a newborn drastically plummeted from top 50 in 1933 to somewhere between 300 and 400 around 1945 and almost entirely disappeared from the statistics after 1953 (www.beliebte-Vornamen.de, January 2007).
 3. The word *sehr* is interesting in its own right because of its affective source and its developmental history. Obviously it has developed from the Old High German noun *sēr* ‘pain, sore’ (cf. Old English *sār* ‘sore’), which, according to the cognitive-affective approach adopted here, suggests that the negativity bias must have been at work in the initial step of change whereby fear of a physical threat, namely pain or sore, motivated the use of that word to communicate high emotive intensity. The fact that *sehr* communicates accountable, relatively high degree rather than emotive intensity in contemporary German allows the inference that the emotive force of the adverb has diminished. This change may be due to frequent uses and/or the obscurity of the lexical origin of the word in modern German.
 4. As suggested by authoritative dictionaries such as the *Duden* (1996) which lists the usage of emotive intensifiers under an extra entry marked as “colloquial”, most emotive intensifiers are favoured in casual situations. Because of the register-bound tendency of the emotive intensifiers, we consider on-line forums and blogs a suitable source of data for the purpose of this study. Accordingly, most of the authentic examples used in this paper have been found in informal discourses provided by this resource.
 5. See Stevens (2000, 2002) for detailed discussions of the terminological controversy about “prefix” versus “prefixoid”. Essentially, the latter exhibits less syntagmatic flexibility and less productivity and is therefore considered as less grammaticalized than the former.

6. It is true that the etymology of *stinkreich* 'stinking rich', which is associated with the medieval custom of burying the deceased, suggests its particular socio-cultural origin. Yet the fact that *stink-* could be removed from that particular socio-cultural context and be used in a more general sense of emotional intensity implies its conceptual potential for fulfilling such a semantic-pragmatic need.
7. This native-speaker intuition would be a good point of departure for future research with regard to the gender-specific quantitative distributions of emotive intensifiers.
8. See Barcelona (2003a: 223–228) for a discussion of the terminological and definitional issue concerning metonymy and whether it is viable to use the term *mapping* in describing the metonymic process.

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