

EVALUATIVE MEANINGS OF ADJECTIVES IN VITRO
AND IN CONTEXT: SOME THEORETICAL IMPLICATIONS
AND PRACTICAL CONSEQUENCES OF POSITIVE-NEGATIVE
ASYMMETRY AND BEHAVIORAL-ADAPTIVE
CONCEPTS OF EVALUATION

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Consistent with a theory stressing the behavioral-adaptive function of cognitive-affective biases, evaluative meanings of adjectives in isolation were found to reflect the meanings endorsed by the adjectives in positive rather than in negative contexts. Dramatic shifts of meaning were observed in negative contexts. However, those negative context effects seemed restricted to one specific evaluative dimension (good/bad for the self or "self-profitability") that was to be distinguished from another, more genuinely evaluative, dimension (good/bad for others or "other-profitability"). The psychological relevance of both dimensions is established and practical implications regarding the construction and interpretation of evaluative rating scales are presented.

It seems obvious that the meaning of a term "in vitro" can be considered as a conglomerate of the meanings carried by the term in the various contexts in which it is used. However, are all contexts equally relevant? Are there no privileged contexts from which the terms "in vitro" take their meanings more than from other contexts, and if there are, can they be identified on the basis of general principles? In the present paper one possible principle underlying the relationship between meanings of terms in isolation and in context is explored. Thereby we shall stick to the E-meaning (evaluative meaning) of adjectives which is highly relevant for research on evaluative attitudes, stereotypes, social judgment, and impression formation.

We are most grateful to the late Willem Claeys who has encouraged us, not only by showing a keen interest in our work, but above all by engaging himself in active research and keeping us informed of the progresses he made. Thank to his frank openness and cooperative attitude we are now able to honour him by referring in this article to part of his work which otherwise might have slumbered for ever in the archives. Further we are greatly indebted to Nadia Belsack and Suzanne Gabriels for assistance in the research on the empirical validation and scaling of SP and OP. To Eddy De Greef we owe thanks for help with typing and text processing.

THEORY AND FIRST EVIDENCE

The evaluative PNA-concept as underlying principle

The evaluative PNA (Positive-Negative Asymmetry) theory was an attempt to account for cognitive-affective biases by demonstrating their behavioral-adaptive value for a subject dealing with a world with a much larger potential for harmful than for beneficial outcomes — as if the subject were a fungus eater who has to survive in a world in which few mushrooms grow among many toadstools (Peeters, 1971). PNA implies two complementary subjective dispositions: (1) a *positivity bias* which is basically a tendency to form positive hypotheses about reality that are functional to reach the mushrooms, and (2) an *overemphasis of the negative* making that the positive hypotheses are vehemently rejected given the slightest counterevidence, which is functional to avoid the toadstools. The positivity bias corresponds to the numerous ditto biases, leniency effects and pollyanna phenomena reported in the social-psychological and psycholinguistic literature, while the overemphasis of the negative corresponds to the negativity effects discussed by Kanouse and Hanson (1971). PNA theory accounts for a lot of research data and it has numerous applications which are beyond the scope of this paper. For reviews, the reader is referred to Peeters and Czapinski (1990) and Lewicka, Czapinski, and Peeters (1992).

In order to apply the PNA concept to the E-meanings of adjectives in vitro and in context, we should take into account the following points: 1.- The evaluative meaning of an adjective can be defined as an approach-avoidance related evaluative response. However, this response is primarily not associated with the eliciting linguistic stimulus (the adjective) but with the referent (the state of affairs depicted by the adjective).

2.- Adjectives are “modifiers” which means that they “modify” or “limit” the reference of another term. For instance, in “friendly person” the adjective limits the range of referent stimuli of “person” by excluding “unfriendly people”. The E-meaning of an adjective is defined as “positive” if it modifies the range of referent stimuli in a way as to elicit proportionally more positive evaluative responses (as in “friendly person”), while the E-meaning of an adjective is defined as “negative” if it modifies the range of referent stimuli in a way as to elicit proportionally more negative evaluative responses.

When an adjective is presented “in vitro”, relevant information concerning the referent is lacking. However, in that case PNA implies

that subjects proceed from a positive hypothesis which means that the adjective is processed as if the referent were positive. Hence, the PNA concept suggests the hypothesis that E-meanings of adjectives in vitro reflect the meanings carried by the adjectives in a positive rather than in a negative context. A first test of this hypothesis was the so far unpublished "friend-enemy experiment" (Peeters, 1976) of which a concise report is presented below.

The friend-enemy experiment

Forty undergraduate students from various faculties of the K.U. Leuven answered two questionnaires presented in two orders counter-balanced between subjects. One questionnaire contained items such as:

"Which kind of friend do you consider the best one: a lazy or an industrious one?"

While in the other questionnaire items took the following form:

"Which kind of enemy do you consider the worst one: a lazy or an industrious one?"

In this way the E-meaning (or evaluative modifying power) of 34 trait-opposites was obtained in both a friend- and enemy-context. When considered in vitro each pair contrasted a positive against a negative trait as was evident from previous favorability ratings. Each subject's answers allowed for four possible outcomes per trait-pair:

- i.- " $V = G = B$ ": the evaluative positions of the traits with respect to each other are the same in the Friend or "Good" (G) and Enemy or "Bad" (B) contexts as in vitro (V) — e.g.: *polished friend* better than an *impertinent friend* and *impertinent enemy* worse than *polished enemy*.
- ii.- " $V = G \neq B$ ": the evaluative positions of the traits with respect to each other are in vitro (V) the same as in the Friend context (G) but reversed as compared to the Enemy context (B) — e.g.: *polished friend* better than *impertinent friend* but *polished enemy* worse than *impertinent enemy*.
- iii.- " $V = B \neq G$ ": the evaluative positions of the traits with respect to each other are in vitro (V) the same as in the Enemy context (B) but reversed as compared to the Friend context (G) — e.g.: *impertinent enemy* worse than a *polished enemy* but *impertinent friend* better than *polished friend*.
- iv.- " $V \neq B = G$ ": the evaluative positions of the traits with respect to each other are the same in the Friend (G) and Enemy (B) contexts but

Table 1. — *Adjective Pairs (translated from Dutch) and Frequency Data*

+ in vitro / - in vitro	i V = G = B	ii V = G ≠ B	iii V = B ≠ G	iv V ≠ B = G	D _{i-ii}
<i>FRIEND-ENEMY EXP.</i>					
quick/slow	5	32	1	2	-26
self-confident/shy	4	29	1	6	-22
ambitious/unambitious	5	28	1	6	-21
powerful/weak	0	22	6	12	-18
practical/clumsy	9	28	1	2	-18
industrious/lazy	12	28	0	0	-16
intelligent/stupid	10	26	1	3	-15
careful/careless	12	23	1	4	-11
likeable/dislikeable	15	25	0	0	-10
independent/conforming	15	23	0	2	-8
cheerful/despondent	14	23	0	3	-7
interesting/boring	16	24	0	0	-7
friendly/stern	16	24	0	0	-7
calm/nervous	16	24	0	0	-7
directive/docile	8	16	4	12	-4
serious/frivolous	18	20	1	1	-3
realistic/unrealistic	18	20	2	0	-2
self-controlled/impulsive	12	13	9	6	-1
polished/impertinent	17	18	1	4	-1
gregarious/seclusive	17	19	1	3	-1
firm/fickle	18	18	1	3	+2
noble/reprehensive	27	10	2	1	+16
open/introvert	27	11	2	0	+16
faithful/perfidious	28	11	0	1	+18
generous/selfish	29	10	0	1	+19
easy/difficult	28	8	3	1	+19
lenient/flexible	28	8	3	1	+20
trusting/suspicious	29	9	2	0	+20
simple/conceited	29	9	0	2	+21
sensitive/impassive	32	7	1	0	+23
not envious/envious	31	8	0	1	+23
trustworthy/untrustworthy	32	7	1	0	+24
tolerant/intolerant	32	8	0	0	+25
conciliatory/vindictive	36	4	0	0	+32
<i>SEMANTIC DIFFERENTIAL EXP.</i>					
strong/weak	12	71	1	12	-59
active/passive	29	58	3	6	-29
light/heavy *	63	13	18	2	50
quick/slow	18	19	45	14	-1
calm/violent *	53	12	24	7	41
quiet/impetuous *	47	9	27	13	38
big/small	0	55	3	38	-55
deep/shallow	19	55	10	12	-36

are reversed in vitro (V) — e.g.: *polished enemy* worse than *impertinent enemy* and *impertinent friend* better than *polished friend*.

Frequency distributions of Ss over the four outcomes are presented in Table 1. Among the Ss' responses, 6 omissions were observed. In those cases the Ss were equally divided over the outcomes they could have produced.

All distributions — except one — differed significantly by χ^2 tests ($p < .05$) from the random distribution. On the basis of the PNA principle one could expect high frequencies for ii, while constancy of evaluative meaning irrespective of context (constancy principle) would result in high frequencies for i. The data are consistent with the PNA principle for some trait-pairs (quick/slow, self-confident/shy, etc.), with the constancy principle for some others (conciliatory/vindictive, tolerant/intolerant, etc.) while partly consistent with either principle for still other trait-pairs (serious/frivolous, realistic/unrealistic, etc.).

The trait-pairs in Table 1 are ordered following the magnitude of D_{i-ii} (i minus ii, however without incalculating omissions this time) which if negative indicates dominance of the PNA principle, while if positive: dominance of the constancy principle. The rank correlation (over trait-pairs) of the present D_{i-ii} values with those from a modified replication amounted to .90 (Peeters, 1976) which suggests that the susceptibility of E-meaning to the context is a relatively stable trait-characteristic. Anyway, consistent with the hypothesis, E-meanings "in vitro" corresponded to those in the friend-context but, for many traits, to those in the enemy-context as well in that the modifying power of the traits did not vary over contexts.

The traits with positive D_{i-ii} 's constituted a dimension that seemed unambiguously associated with good/bad adaptive consequences for "others" that are dealing with the owners of the traits rather than for the owners themselves. For that reason it was called "*other profitability*" (OP). The traits for which E-meanings were reversed in the enemy-context (negative D_{i-ii} 's) constituted a dimension that seemed unambiguously associated with good/bad adaptive consequences for the owners of the traits themselves rather than for the owner's socii. For that reason it was called "*self-profitability*" (SP). The interaction between SP and context can be readily understood in that my friend's + SP (positive self-profitability) is not only good for my friend but also indirectly for me, while my enemy's + SP, which is good for him, is indirectly bad for me. Considering that "friend" and "enemy" seem respectively + OP and -OP valued concepts, one might generalize that

the OP valence of SP aligns with the SP valence in +OP contexts but is reversed in -OP contexts.

A somewhat surprising result may be the apparent presence of a substantial SP-component in terms such as likeable/dislikeable, cheerful/despondent, friendly/stern, which seem intuitively affiliated with OP rather than with SP. A possible explanation may be found in Peeters (1983) where it was shown that perceivers associate SP with "being liked by an other without having to reciprocate the other's feelings". Hence traits that increase a person's attractiveness without requiring altruistic acts may endorse +SP.

EMPIRICAL VALIDATION AND SCALING OF SP AND OP

SP and OP are trait-dimensions that were originally established by distinguishing between trait-adjectives of which the evaluative meaning varied over the contexts "friend" and "enemy", and trait-adjectives of which the evaluative meaning remained constant. Hence the question arose whether these dimensions would still be relevant beyond the context of the friend-enemy experiment. In this respect, the definitions in terms of "profitability" suggested that the given dimensions would have "relational" relevance. Specifically, it could be expected that perceivers would assign either +OP or -OP traits to a target person as a function of whether the target's feelings and acts relative to an "other" were either positive (prosocial) or negative (antisocial). In an analogous way, it could be expected that +SP and -SP traits would be assigned as a function of how the target felt or acted, either positively or negatively, relative to the self. Empirical evidence confirming both expectations has been reported elsewhere (Peeters, 1983). The latter study included also a method for scaling SP and OP. However a simpler method has been used by Claeys (personal communication; cf. also De Boeck & Claeys, 1988). Both scaling methods, henceforth referred to as the PEETERS and CLAEYS methods, are presented and discussed below.

Scaling SP and OP: The Peeters method

The SP valence of terms denoting people or features of people (traits) are rated using the rating scale presented in the upper part of Schema 1. Judges have to use the 9-point scale (which of course can be expanded or reduced up to a dichotomy) in order to indicate for each target term to which extent it belongs to (is best described by) either the left

(negative) or the right (positive) cluster of key-traits. The OP valence of terms is rated in an analogous way using the rating scale presented in the lower part of Schema 1.

SP Scale	
ZWAK (<i>WEAK</i>)	MACHTIG (<i>POWERFUL</i>)
AMBITIELOOS (<i>AMBITIONLESS</i>)	AMBITIEUS (<i>AMBITIOUS</i>)
SCHUCHTER (<i>SHY</i>)	ZELFVERZEKERD (<i>SELF-CONFIDENT</i>)
ONHANDIG (<i>CLUMSY</i>)	PRAKTISCH (<i>PRACTICAL</i>)
TRAAG (<i>SLOW</i>)	VLUG (<i>QUICK</i>)
Trekken die nadelig zijn voor het eigen zelf in de eerste plaats (<i>Traits that are disadvantageous for the own self in the first place</i>)	trekken die voordelig zijn voor het eigen zelf in de eerste plaats (<i>Traits that are advantageous for the own self in the first place</i>)
-4 -3 -2 -1 0 +1 +2 +3 +4	
OP Scale	
ONVERDRAAGZAAM (<i>INTOLERANT</i>)	VERDRAAGZAAM (<i>TOLERANT</i>)
ZELFZUCHTIG (<i>SELFISH</i>)	EDELMOEDIG (<i>GENEROUS</i>)
GEVOELLOOS (<i>IMPASSIVE</i>)	GEVOELIG (<i>SENSITIVE</i>)
ONBETROUWBAAR (<i>UNTRUSTWORTHY</i>)	BETROUWBAAR (<i>TRUSTWORTHY</i>)
ACHTERDOCHTIG (<i>SUSPICIOUS</i>)	VERTROUWEND (<i>TRUSTING</i>)
trekken die nadelig zijn voor de socius in de eerste plaats (<i>Traits that are disadvantageous for the socius in the first place</i>)	trekken die voordelig zijn voor de socius in de eerste plaats (<i>Traits that are advantageous for the socius in the first place</i>)
-4 -3 -2 -1 0 +1 +2 +3 +4	

Schema 1. Rating scales for SP and OP used in Peeters (1983). Original Dutch text with literal English translation printed between brackets and in italics.

The key-traits were selected because they seemed representative for SP and OP in both the above friend-enemy experiment and the "relational" experiments (Peeters, 1983). Moreover, when used as scale markers, they had never confronted the experimenter with the kind of bizarre outcomes that sometimes are found to haunt experiments as a consequence of some unknown factors. In Schema 1, the original Dutch adjectives are presented together with a rather literal English translation. There is no absolute guarantee that the validity of the Dutch version of the scale generalizes to the translated version. However, it is promising that the translated version could be used with good result in a reanalysis of data from an American experiment requiring an American judge to rate the original English trait-adjectives for SP and OP (Peeters, 1983).

The validity of the key-traits is further illustrated by other investigators who included them in person-descriptive questionnaires of the

"semantic differential" type used in their own research. For instance, R. Peeters (1982) — not the author of this article — ran an experiment on the impact of the perceived personality of the experimenter upon learning. At the end of the experiment, the subjects (79 students from various faculties) completed a questionnaire asking for their impressions of the experiment as a whole and of the personality of the experimenter in particular. The latter was described using rating scales marked by traits among which were the present key-traits in addition to a variety of other traits. Factor analysis of correlations between scales with varimax rotation yielded four outstanding and five minor factors. They seemed largely determined by idiosyncratic aspects of the experiment, indeed, but at the same time they confirmed the representative value of the key-traits in that OP and SP key-traits loaded on different factors.

OP key-traits loaded high on Factors 1 and 2. Specifically factor 1 combined *tolerant* and *sensitive* with agreeable, warm, sympathetic, friendly, etc.; factor 2 combined *trusting* and *trustworthy* with serious, intelligent, industrious, careful, firm. Only *generous* did not load high on any factor which is after all still better than loading high on a wrong factor. SP key-traits loaded high on factors 3, 4, and 7. Specifically factor 3 combined *self-confident*, *quick*, and *powerful* with shrewd, taking the lead, cheerful and liking company; factor 4 concerned mainly characteristics attributed to the experimental situation but combined also *practical* with interesting as experimenter's traits; finally factor 7 was only represented by *ambitious*.

Notice that the composition of the factors is not always obvious. For instance, intelligent, industrious, careful and firm may appear SP traits that should not combine with OP traits such as trustworthy and trusting. However in spite of their seeming SP character, none of those traits had passed through the filters by which the SP key-traits were selected. Further the reader may be surprised to find cheerful loading high on an SP dimension except if he has read carefully the friend-enemy experiment where the SP nature of cheerful was yet revealed by a negative D_{1-11} (cf. Table 1).

In another study (Pelgrims, 1980) students rated a still unfamiliar peer (and future collaborator) for the present SP and OP key-traits and also for helpfulness which can be considered as an OP trait by definition. The OP key-traits correlated systematically higher with helpful ($Me = .56$) than did the SP traits whose correlations fluctuated around zero ($Me = .05$). However, the latter became outstandingly

positive ($Me = .62$) in a condition where the peer had presented himself as "helpful". This is in agreement with the idea that +SP corroborates +OP as in the friend-enemy experiment where +SP added to the positive valence of the "friend". Presenting himself as helpful, the peer may be perceived as a potential friend rather than as a potential enemy making that the +SP traits that are attributed to him add to his +OP. Indeed, a powerful person can be expected to have a larger potential for effective help than a weak person. Finally, the correlations of helpful with SP decreased again and turned even into negative ($Me = -.23$) in a condition where the peer had declared that it depended on the situation whether he was helpful or not. This result may reflect that helpful was no longer handled as a personal disposition of the peer but as an effect of situational pressure whereby +SP personalities (powerful, self-confident) are expected to resist situational pressure better than -SP personalities (weak, shy). Moreover, in this condition, the loss of trait-status of helpfulness transpired also in lower positive correlations of helpful with the OP key-traits ($Me = .29$).

So far we considered only the validity of simple key-traits as SP and OP scale markers. In order to test the reliability of the entire scales presented in schema 1, 222 Personal attributes, drawn from the research literature on national stereotypes, were rated by two groups of 20 judges (students), one group rating for OP, the other for SP. Each group was divided into four subgroups of five judges as a function of gender and the order in which the target attributes were presented. Ratings of attributes were averaged over judges within subgroups and product moment correlations (r) between the averages were computed over attributes. The r 's between OP ratings of subgroups ranged from .89 to .92 ($Me = .91$), which is pretty high. The SP ratings, however, seemed somewhat less reliable with r ranging from .67 to .82 ($Me = .74$). In an additional reliability test 10 other judges provided both OP and SP ratings of 76 attributes sampled from the previous 222 ones. Again ratings were averaged over judges and correlated with the ratings from the previous test averaged over all of the 20 judges. When the new ratings were averaged over all 10 judges, then r amounted to .95 for OP and .91 for SP. Using only five of the new judges, the r 's decreased only slightly to .94 for OP and .88 for SP suggesting that only five judges suffice to get about the same outcome as 20 judges. Even when ratings were averaged over only two of the new judges, the r 's of the pairs with the group of 20 judges ranged from .87 to .91 for OP and from .73 to .86 for SP, which is still fairly good.

Scaling SP and OP: The Claeys method

An attribute's SP is scaled by asking judges straightforwardly to rate how advantageous versus disadvantageous they consider the attribute for the person who has the attribute. Claeys introduced the rating-task in the following way (translated from Dutch):

"The description of a person can refer to a personality attribute that is advantageous for the person who has that attribute, while an other personal property can refer to a personality attribute that is disadvantageous for the person who has this attribute. For instance, it is advantageous for oneself to be 'intelligent', and disadvantageous for oneself to be a 'worrier' or a 'wobbler'. Other descriptions of a person concern attributes that are neutral from the point of view of the self which means that they involve neither advantages nor disadvantages (or as many advantages as disadvantages) for the person who has the attribute, for instance: to be 'expressive' or 'reserved'."

In an analogous way, attributes were scaled for OP by rating how advantageous versus disadvantageous they were for the "fellow-men" (medemensen), the rating-task being introduced as follows:

"The description of a person can refer to a personality attribute of a person that involves advantages for the fellow-men with whom that person goes about (is in contact with), while other descriptions of a person refer to a personality attribute that is disadvantageous for the fellow-men. For instance, being 'tactless' is very disadvantageous (or disagreeable) for the fellow-men, while being 'trustworthy' is very advantageous for the others. Some attributes, e.g.: being 'conventional', involve neither advantages nor disadvantages (or as many advantages as disadvantages) for the fellow-man and for that reason they can be considered as neutral attributes from the point of view of the fellow-man."

This method can be argued to have face validity and it was shown to be extremely reliable. Cronbach alpha coefficients concerning the agreement between nine post-graduate students who rated 280 Personal attributes (soft, independent, young, etc.) amounted to .96 for both OP and SP (De Boeck & Claeys, 1988).

Comparison of both methods

In the *Peeters method* the judge's attention is focussed on representative key-traits while "profitability" notions are only added as secondary cues providing a common denominator for the traits. In the *Claeys method*, however, the judge's attention is focussed directly on the

profitability notions. At a first glance the more simple Claey's method with its high reliability and apparent face validity seems preferable. However, just this face validity may be questioned. Originally SP and OP were conceived of as two independent categories: Pure OP should be (dis)advantageous for the other irrespective of how (dis)advantageous it is for the self; analogously pure SP should be (dis)advantageous for the self irrespective of how (dis)advantageous it is for the other. This may be so on a primary level of interpretation, indeed, but on a secondary level involving subjective expectations about cause-effect sequences associated with traits, SP and OP may no longer be unrelated. For instance, primarily "generous" may be a purely positive OP attribute. However, secondarily "generous" may endorse a good deal of positive SP in that others may be expected to reciprocate generosity which is advantageous for the generous person. Hence one could expect that using the Claey's method, the SP ratings do not only tap primary SP but also the secondary SP associated with primary OP. In the Peeters method this flaw may be conjured by the use of empirically selected key-traits as scale markers.

If the latter rationale is right, one could expect a more positive correlation between SP and OP when scaled by the Claey's method than when scaled by the Peeters method. This hypothesis was tested in an experiment with two sessions separated by a time interval of one month. In session 1 the 76 personal attributes that had been used to test the reliability of the Peeters method (see higher) were rated for SP and for OP by 10 judges: 5 students instructed following the Claey's method and 5 students following the Peeters method. Session 2 was an exact replication of session 1. The same judges were involved but those who had used the Claey's method in session 1 were now instructed following the Peeters method and vice versa. For each subject r between SP and OP was computed over the 76 attributes and r 's were averaged over subjects using Fisher's z -transformation.

ANOVA yielded no significant main effect of order of presentation of methods (either Claey's first or Peeters first) but a significant main effect for method (Claey's versus Peeters: $F(1,8) = 12.06$, $p < .01$) which, however, was qualified by a significant interaction with order of presentation: $F(1,8) = 6.46$ $p < .03$. Specifically, the mean r 's between SP and OP obtained with the Claey's method were quite high (.79 in each session), while the mean r obtained with the Peeters method was low in session 1 ($r = .16$) but high in session 2 ($r = .73$) where it approached the size obtained with the Claey's method. This means that, consistent with the

hypothesis, there was a positive correlation between SP and OP ratings made using the Claey's method which was not observed when the Peeters method was used. However, this was only the case when the Peeters method was used by subjects who had not used the Claey's method before. The reason may be that subjects who have used the Claey's method in the past may pay less attention to the key-traits and focus directly on the advantageousness of the traits for self or other which is only a secondary element of the Peeters instructions but is central in the Claey's instructions.

The higher r between SP and OP obtained with the Claey's method was predicted on the basis of a rationale assuming that SP measures obtained with this method did not only cover primary SP but also secondary SP associated with OP. If this is indeed the case, then one could predict that the discrepancy between both methods is limited to the scaling of SP and does not extend to OP. Consistent with this prediction, the SP-ratings of the 76 above attributes by the 10 judges who used the Claey's method correlated only $r = .60$ with the SP-ratings of the same attributes by the group of 20 judges who used the Peeters method, while the correlation for OP ratings was indeed much higher ($r = .93$).

The latter result has high practical relevance in that it implies that at least for scaling OP the very simple and straightforward Claey's method can be substituted for the more complex Peeters method. Unfortunately this seems not the case for SP. However, considering that the difference shown by the Claey's method is probably due to secondary SP associated with OP, the Claey's method should agree with the Peeters method for SP-ratings of attributes that are neutral for OP and that can be selected using the Claey's method. This was tested out by selecting attributes neutral for OP from the list rated by 10 judges who used the Claey's method (see higher). The ratings were made on scales from 1 to 9 with 5 as middle point. An attribute was selected as neutral if the average OP rating was higher than 4 and lower than 6. In this way 19 attributes were selected (e.g.: conventional, conservative, superstitious, poor, ambitious). Their SP values obtained with the Claey's method (10 judges) correlated $r = .83$ with those obtained with the Peeters method (20 judges). Apparently the Claey's method can be used instead of the Peeters method for selecting a set of attributes that are representative for SP while neutral for OP. In this respect it is worthwhile to mention that the attribute with the highest SP value among the 19 OP-neutral attributes was "ambitious" which is one of the SP key-traits of the

Peeters method and, moreover, the only of those traits that had slipped by chance into the list of 76 attributes. It seems obvious that traits scoring by the Claeys method extremely high (positive) or low (negative) for SP while neutral for OP, may be used as key-traits in the Peeters method. In this way, investigators who want to use the Peeters method for scaling SP of terms in other cultures than the Dutch-speaking Flemish community, can use the Claeys method for selecting appropriate sets of SP key-traits.

Finally, if the troubling secondary SP that is tapped by the Claeys method derives from OP, one could try to correct the SP scaled with the Claeys method on the basis of the terms' OP values. In a rough attempt we used again the SP and OP values of the 76 attributes rated by 10 judges following the Claeys method. The SP ratings (on an advantage-ness scale from 1 to 9) were corrected by subtracting 2 from the SP-ratings of attributes rated above 6 for OP, and adding 2 to the SP-ratings of attributes rated below 4 for OP. SP-ratings of attributes scoring between 4 and 6 for OP (the 19 neutral attributes) were left unchanged. By this correction the r between the SP values obtained with the Claeys method and the SP values obtained with the Peeters method increased from .60 to .75, which is a promising outcome.

Conclusion and generalization to Osgood's semantic differential

It may be safely concluded that the relevance of the SP and OP dimensions as evaluative categories extends beyond the specific context of the friend-enemy experiment. The "profitability" interpretation seems valid. The convergence of two methods for scaling SP and OP and the high reliability of the scalings suggests that SP and OP form real psychological categories rather than being artificial constructions of a theorist. Hence it should not surprise to find SP and OP related to other established psychological categories. For instance links with concepts regarding "implicit personality theory" and "social motivation" were demonstrated elsewhere (Peeters, 1983). In all these cases, SP and OP were handled as categories of "person" perception. However one could wonder whether these categories do not generalize beyond the social-perceptual realm including the way people experience non-human objects.

A positive answer to the latter question has been suggested by Peeters (1986) reinterpreting the semantic differential (Osgood, Suci and Tan-

nenbaum, 1957) in the light of the present categories of SP and OP. In everyday life people would be disposed to dealing with objects in an animistic way taking the person as a basic metaphor. Using expressions such as "friendly house" and "aggressive wine", we assign personalities to inanimate things as if they were humans. The semantic differential could be defined as a kind of implicit personality theory underlying the perceived "personalities" of objects in general. Hence, being basic categories of person perception, OP and SP could be expected to underlie the semantic differential.

Proceeding in this way it was demonstrated that the dimension E(valuation) of the semantic differential reflected two evaluative categories both characterized by stable valences varying little or not at all over contexts. The first was "direct evaluation" represented by terms such as good-bad, "favorable-unfavorable" that express valences directly without referring to a fixed descriptive content, the descriptive content varying over contexts (e.g., "good" may refer to "warm" in "good coffee" and "cold" in "good beer"). The second is the present OP which implies a fixed descriptive component specifying that the valence is defined from the perspective of the "other" rather than of the "self". Further, SP was shown to have affinities with the semantic differential dimension D(ynamism) which is a combination of A(ctivity) and P(otency). The latter implies that the apparently nonevaluative character of A and P is an artefact due to aggregating contrasting E-meanings endorsed by adjectives in various contexts. However, when presented in isolation, those adjectives should have evaluative connotations as was effectively observed by Osgood (1979) who found A and P to align with E when referents were not specified. Thus A and P are not evaluatively neutral but endorse E-meanings that vary between contexts.

Given the unconditional evaluative character of adjectives loading high on E in the semantic differential, and the conditional evaluative character of adjectives loading high on A and P, one could hypothesize that A and P adjectives *in vitro* have the same evaluative meanings as they have in contexts described by +E adjectives rather than in contexts described by -E adjectives. Because of the affinity of A and P with SP, one could even hypothesize that the evaluative meanings of contrasting A and P adjectives would be reversed in the -E contexts, +A and +P adjectives being more favorable than -A and -P adjectives when the context is positive (+E) but less favorable when the context is

negative (-E). These hypotheses were tested in the Semantic-Differential experiment.

THE SEMANTIC-DIFFERENTIAL EXPERIMENT

Evaluative meanings in context: method

Four groups of Ss were run: (1) 27 female and (2) 18 male psychology undergraduates, (3) 25 male and female science undergraduates and (4) 26 women enrolled in a one-year program of welfare work. Groups 1-3 were university students (K.U.Leuven) while group 4 was of a lower educational level. The Ss answered a questionnaire with 16 test- and 6 filler-items presented in two orders varying between Ss. Each item presented two alternatives out of which the S had to mark the one he/she preferred (liked most, disliked least). Examples of items are:

- "Something good that is strong / Something good that is weak"

- "Something bad that is strong / Something bad that is weak"

'Good' and 'bad' are called *context terms* while 'strong' and 'weak' *test terms*. Both context- and test-terms were taken from the Flemish version of the Semantic Differential (Jansen & Smolenaars, 1966). Context terms loaded high on E while test terms loaded high either on A or on P making them representative of D(ynamism) or SP (Self-profitability). Each of four pairs of opposite E-loaded terms provided contexts for one A pair and one P pair as indicated in Schema 2. In this way each A and P pair was judged one time in a +E and one time in a -E context.

Context terms	Test terms	
	+ A / - A	+ P / - P
+ E / - E		
good/bad	impetuous/quiet	strong/weak
agreeable/disagreeable	active/passive	big/small
magnificent/horrible	violent/calm	heavy/light
beautiful/ugly	quick/slow	deep/shallow

Schema 2. Context terms and test terms (translated from Dutch).

Evaluative meanings of test terms "in vitro"

The eight pairs of test terms were presented in a random order (and counterbalanced between Ss) to another sample of 78 psychology undergraduates with the request to mark the more favorable term of each pair. It was expected that the positive dynamism terms (+ A and + P) would be more favorable than their negative opposites. Chi² tests

revealed significant preferences within 7 out of the 8 pairs. The significantly preferred terms ($p < .05$) are italicized in Schema 2. It is evident that not all of the significant preferences align with dynamism. The exceptions are quiet, calm, and light while the preference for deep was not significant. The product moment correlation between the number of times that each term was marked "favorable" and the term's "dynamism" value (1 for +A and +P terms and -1 for -A and -P terms) amounted only to $r = .28$.

The number of "favorable" marks constituted reliable indexes of the terms' E-meanings in vitro. Indeed, r 's (computed over 16 terms) between 2 orders of item-presentation amounted to .98 and between male and female subjects to .93. It could be objected that those indexes were biased in that each term was compared with only one other term (dichotomous method). For that reason 6 judges (psychologists and a law student) ranked the 16 terms from most to least favorable. The average r between judges was .79, and the sum of ranks assigned to each trait correlated $r = .87$ with the evaluative index obtained by the dichotomous method. Hence it was decided to rely further on the latter index the more in that it was obtained by a procedure that resembled most the procedure in the context conditions.

Relationship between evaluative meanings in vitro and in context

In the same way as described higher for the terms in vitro, E-meaning indexes were obtained also for each term in each context by counting the number of Ss who preferred the term to its opposite. For instance, if 20 Ss of group 1 preferred "something good that is strong" to "something good that is weak" while 7 Ss preferred "something good that is weak" to "something good that is strong" then 20 and 7 were used as E-meaning indexes for respectively "strong" and "weak", both in the +E context "good". Table 2 (columns a,b) shows r 's of evaluative meanings in vitro with those in positive contexts (r_{vp}) and negative contexts (r_{vn}). As hypothesized, the r_{vp} 's are manifestly positive and much higher than the r_{vn} 's, and this in all groups of Ss.

Analogous r 's were computed over the 68 trait-terms of the friend-enemy experiment. E-meanings of terms in vitro were quantified by assigning the values +1 and -1 to the traits qualified in Table 1 respectively as "+ in vitro" and "- in vitro". These E-meaning values "in vitro" were correlated with E-meaning values in positive (r_{vp}) and negative (r_{vn}) contexts whereby the latter values were rendered by

evaluative indexes again obtained by counting for each trait the number of Ss who preferred the trait to its opposite respectively in the +E context "friend" and the -E context "enemy". As shown in Table 2, the obtained r 's were in agreement with those from the Semantic-Differential Experiment.

Table 2. — SEMANTIC-DIFFERENTIAL and FRIEND-ENEMY Experiments: r Between Evaluations In Vitro (v) and in Positive (p) and Negative (n) Contexts

	r_{vp}	r_{vn}	with Dynam. (d) constant	
			$r_{vp,d}$ c	$r_{vn,d}$ d
<i>SEM.-D. EXP.</i>				
Group (1)	.62	.15	.62	.50
Group (2)	.68	-.06	.68	.41
Group (3)	.61	-.21	.62	.00
Group (4)	.92	.06	.95	.60
<i>FR.-EN. EXP.</i>	.97	.03		

The results of the friend-enemy experiment were accounted for assuming two E-meaning components: OP which is constant over contexts and SP the valence of which is reversed in negative contexts as compared to positive contexts and in vitro. As in the negative enemy context SP reversals were compensated for by OP constancies, r_{vn} in Table 2 is not negative but about zero (.03) for the friend-enemy experiment. However, in that P and A (Dynamism) were associated with SP, we could expect negative r_{vn} 's in the Semantic Differential experiment, but those seem hardly to occur (Table 2, column b). A possible explanation is that the test terms are not purely loaded with Dynamism but carry also a "genuine" E component (presumable OP) that is constant over contexts. In negative contexts this constant E component and the reversed E associated with Dynamism may cancel each other which results in the low r_{vn} 's in column b. Support for this interpretation is provided in that r_{vn} 's become more positive when Dynamism is partialled out and thus the other E component is no longer masked (column d). It is interesting that the r_{vp} 's are hardly affected by partialling out Dynamism (column c). This suggests that the agreement between E-meanings in vitro and in positive contexts may rely primarily on the genuine E component rather than on E endorsed by Dynamism, while the disagreement between E-meanings in vitro and in negative contexts just follows from the reverse E meanings endorsed by Dynamism.

Results concerning Separate Terms

The same frequency analysis as in the friend-enemy experiment was also applied to the present data. The results are presented in the bottom part of Table 1. The adjective pairs are ordered from most (strong/weak) to least (deep/shallow) discriminating for favorability in vitro and data were pooled over groups. (Notice that the pooled frequencies showed the same pattern as the combined groups 1 and 2 and that these groups were drawn from the same subject population as the group that provided the evaluations "in vitro".)

As expected, frequency patterns obtained for adjective-pairs with evaluative meanings aligned with dynamism are very alike to patterns for SP trait-pairs in the friend-enemy experiment (with negative Di-ii's). A noteworthy exception is the high iii frequency for quick/slow (45) which contradicts the PNA principle the E-meaning in vitro corresponding to that in the negative or "bad" context (B) rather than to that in the positive or "good" context (G). However, this anomaly was only produced by the university groups and not by the welfare workers. It may be an idiosyncrasy partly due to the specific evaluative context (beautiful/ugly) which may have induced an interpretation of quick/slow in terms of duration, Ss liking beautiful things to endure but ugly ones to pass over as quickly as possible.

Another anomaly on the account of only the university students is the relatively high frequency of iv for big/small suggesting an overall preference for "small". Possibly it is an effect of the "small-is-beautiful" doctrine propagated by the ecological movement that is quite popular among students.

Adjective pairs for which E-meaning in vitro is inversely related to Dynamism (marked by *) show the typical pattern of the OP trait-pairs (with positive Di-ii's). However, relatively high frequencies of iii may reveal the presence of the SP-like evaluative component that is directly related to Dynamism in the positive context but reversed in the negative context. Thus most Ss prefer always light, calm and quiet things but some Ss like good things to be heavy, violent and impetuous.

Finally, the high negative Di-ii for "deep/shallow" surprises because it lets us expect a great evaluative contrast in vitro, while "in vitro" deep is not significantly more preferred than shallow. This and the other exceptions suggest that, in spite of its general validity, the PNA principle may only partly account for E-meanings of terms in vitro, other, presumably idiosyncratic, factors being interfering.

CONCLUSIONS AND PRACTICAL IMPLICATIONS

First of all, both experiments provide strong support for the hypothesis that, consistent with the PNA principle, evaluative meanings of terms "in vitro" are more alike to those in evaluatively positive than in evaluatively negative contexts. Hence many adjectives show an apparent *negative-context effect*: the familiar evaluative connotations carried by the adjectives in isolation persist in positive contexts but seem reversed in negative contexts. Further, there is evidence that evaluative meaning does not have a monolithic character but involves at least two components that are differentially susceptible to differences between contexts: (1) a genuine evaluative component, presumably related to "other-profitability" (OP), which seems quite constant over contexts, and (2) a component the evaluative valence of which reverses in negative contexts, and that is presumably connected with "self-profitability" (SP) and related constructs such as the A and P or "*Dynamism*" of the semantic differential.

A practical conclusion is that one may rely quite safely on terms that are highly saturated with one component such as the key-traits in Schema 1. This may especially be the case for the genuine evaluative component related to OP or the E-factor of the semantic differential.

As to the component related to SP or Dynamism one should take into account that its valence reverses in negative contexts.

The evaluative interpretation of terms loaded with both components may be precarious in that it is uncertain how both components combine together within one term. An investigator may select a term for a rating scale on the basis of one component without being aware that he discounts the other while just that other component may be the most salient one for some of his subjects. In this way the investigator may obtain odd outcomes such as the strange composition of factor 2 in the study of R. Peeters (1982) reported higher. In this factor a well-established OP key-trait was combined with seemingly SP traits such as (the Dutch equivalents of) intelligent, industrious, etc. Apparently these traits have a strong OP connotation. For instance, the term "intelligent" may be associated with OP dispositions such as understanding and considerate. A more genuine SP variant of intelligence may be represented by the term "shrewd" which loaded high on the same factor as self-confident, quick and powerful which are well-established SP key-traits. Another example from the same study was the association of apparent social traits such as "cheerful" with SP traits

such as "quick" and "shrewd" rather than with more manifestly social OP traits and which was explained by the SP character of traits that make a person attractive without requiring altruism.

Relying on norms based on general favorability ratings of adjectives in vitro may be O.K. for descriptions of positive objects but not for descriptions of negatively valued objects. However, the norms may apply to negative contexts as well if the favorability ratings were, for instance, not made in terms of mere "good/bad" but in terms of one or another variant of "good/bad for the other" (OP).

Finally, in order to neutralize idiosyncratic exceptions (occurring especially in more sophisticated subject groups) it may be recommendable not to rely on one single term or rating scale, but on redundant sets of terms or scales.

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