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Editorial

Positive–negative asymmetry or 'When the heart needs a reason'

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INTRODUCTION

For many years psychologists reported surreptitious data showing that there exists an asymmetry in the way in which people handle evaluatively positive and negative phenomena. These data concerned a correlation between evaluative meaning (goodness, pleasantness, positiveness, favourableness, likeability, etc) of stimuli, psychological processes, and action outcomes, on the one hand, and other properties such as frequency, intensity, weight, differentiation, reaction time, concreteness, informativeness, etc., on the other hand. In the beginning the phenomenon was treated as an artifact of the methods used and various attempts were made to eliminate it by improving the measurement instruments. A classical example is Role Construct Repertory Test, for which a frequency balance between positive and negative poles was seen as a criterion of psychometric goodness (Bannister and Mair, 1968). In the late 60s and early 70s the presumed artifact was given theoretical significance and became known under a variety of labels: POLLYANNA HYPOTHESIS (Boucher and Osgood, 1969), VIGILANCE HYPOTHESIS (Irwin, Tripodi and Bieri, 1967), LENIENCY EFFECT (Bruner and Tagiuri, 1954), the widely acknowledged POSITIVITY BIAS and its pendant the NEGATIVITY EFFECT or NEGATIVITY BIAS (Kanouse and Hanson, 1971). The term POSITIVE–NEGATIVE ASYMMETRY (abbreviated: PNA), which is heading the present issue, was introduced 21 years ago in this journal (Peeters, 1971). At present it embraces a wide range of empirical phenomena as well as theoretical concepts advanced in order to explain them.

PNA as an empirical category

As an empirical category, PNA includes those differences, observed between affectively positive and negative phenomena, that are not directly implied by differences in valence. Examples are the more frequent formulations of positive than negative judgments, and the dominant tendency in people to attach greater weight to possible

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losses than to comparable gains in decision-making. The majority of empirical demonstrations of the asymmetry fall into two large classes of data. The first, called POSITIVITY BIAS, may be included, after Markus and Zajonc (1985), in a larger category of OUTPUT BIASES, along with response biases and functional fixedness. The other, called NEGATIVITY EFFECT, should be subsumed under INPUT BIASES, along with availability, anchoring, primacy, perseverance, and vividness effects.

Positivity bias means the human tendency to generate evaluatively positive hypotheses about reality and the readiness to generate positive affective states. This bias is most clearly observed in relatively neutral situations when evaluated targets are relatively novel or do not directly influence the individual during the process of evaluation (Matlin and Stang, 1978; Czapinski, 1985).

In contrast, the negativity effect is a reaction to specific stimuli and means HIGHER IMPACT of negative than of positive stimuli of the same intensity on behaviour, affect and cognitive representations of evaluated objects. Recently two kinds of negativity effects were distinguished: AFFECTIVE AND INFORMATIONAL (Peeters and Czapinski, 1990). The affective negativity effect concerns a higher affective impact of negative stimuli over equally intense positive stimuli on the overall evaluation of the whole stimulus configuration and/or on related approach–avoidance behaviour.

The informational negativity effect concerns a higher cognitive elaboration of negative than of positive information. The latter includes among others: stronger cognitive curiosity manifested for negative than for positive stimuli (Fiske, 1980), higher linguistic sophistication of negative than positive category labels (Clark and Clark, 1977), higher informativeness of negative than of positive personality trait labels (Czapinski, 1986), more rational and normatively appropriate character of inferences applied to negative than to positive targets (Lewicka, 1989).

PNA as a theoretical concept

As a theoretical concept, PNA includes hypotheses which assume differences in processing positive and negative information and which refer to the causes and/or functions of the empirical manifestations of positive–negative asymmetry. Parallel to the abovementioned distinction between affective and informational negativity effect, there are two main theoretical approaches which were present from the early beginning but took only recently the form of two distinct developments. First there was, mainly in the U.S.A., a COLD or COGNITIVISTIC approach focusing on informational aspects, suggesting that the affective negativity effect might be just another manifestation of the informational negativity effect (e.g. Fiske, 1980; Reeder and Brewer, 1979; Skowronski and Carlston, 1989). Then there was the WARM approach which stressed the primacy of action-directed emotive and motivational forces which are most manifest in the affective negativity effect but which also would be at the origin of the informational negativity effect. The function of the latter 'informational' effect would be to reduce the non-adaptive psychological reactions associated with the affective negativity effect (Czapinski and Peeters, 1990; Peeters and Czapinski 1990), an idea also consistent with the mobilization–minimization hypothesis of Taylor (1991).

Some of the more recent data suggest that the incidence of the affective negativity effect may be restricted to some classes of stimuli, distinguished either by formal

features (for instance it is more likely to occur for highly intense than for mildly intense stimuli, *cf.* Czapinski, 1982, 1988), or by their content (more frequent when descriptions refer to moral or other-profitable personality dimensions than to ability or self-profitable ones: Reeder and Brewer, 1979; Peeters, 1989). In the remaining cases, the negativity effect is less likely to occur (Peeters and Czapinski, 1990).

PNA and emotion

Some time ago, the phenomenon of PNA, previously observed in processes of EVALUATION, has been generalized to the domain of EMOTIONS, and it now refers also to the observed systematic differences in processing information under the impact of positive versus negative AFFECT. These may be summarized as a more SYSTEMATIC processing and more ACCURATE perception of reality under negative than under positive mood. For instance, it has been found that subjects who are in an (induced) sad mood or who are clinically depressed require more information to make a decision (Isen and Means, 1983; Forgas, 1989) and search for information in a more objective and less biased way (Lewicka, Piegat and Krzyzak, 1990) than do subjects who do not suffer from depression. In other studies, subjects being in an (induced) sad mood were more accurate in estimating the magnitude of correlation from presented scatter plots and provided more veridical interpersonal judgments (Sinclair and Mark, in press). In the classical studies (Alloy and Abramson, 1979) depressed subjects provided more accurate judgements of actual contingency between own responses and outcomes than non-depressed subjects. In studies on self perception and attribution, depressed subjects were found to be less biased and more even-handed in handling positive and negative self information than non-depressed subjects (Ruehlman, West and Pasahow, 1985; Taylor and Brown, 1988) and less prone to the self-serving cognitive illusions (Taylor, 1980). Isen (1987) reviewed a large body of data suggestive of a more heuristic and creative but less systematic and analytic thinking under positive than under negative mood. Although there have been found limitations to these clear-cut predictions related among others to the type of task (*cf.* Abele, 1989), the general conclusion that mood influences the choice of a processing strategy seems well established now (Fiedler, 1988; Schwarz, 1990; Sinclair and Mark, in press).

OVERVIEW OF CONTRIBUTIONS

In this Special Issue we have collected 12 papers which represent authors from different geographical areas (Europe, United States, Australia, Japan) and which are also representative in terms of the topics of the PNA research. Unfortunately, not all manuscripts belonging to this issue can be published together. Using criteria unrelated to quality but the more to editorial constraints such as numbers of pages and, in the last resort, even to drawing lots, three papers (Claeys and Timmers, Lindeman, Ikegami) will be published separately in regular issues of the *EJSP* but they belong to the Special Issue and will be discussed here.

The authors come from different theoretical backgrounds and one can easily notice the difference in the terminology used to denote the same phenomena (for instance: negativity EFFECT or negativity BIAS?). Only in rare cases these differences can

lead to theoretical misunderstandings the meanings attached to the terms used being clear. Hence, it was decided not to press the authors for uniformity of terminology. Agreement in this regard may be reached in due course by itself.

The first two papers in this issue (Skowronski and Carlston, Martijn, Spears, van der Pligt, and Jacobs) concern the question of the universality of the negativity effect in impression formation. They refer to the discussion which has been initiated by Glenn Reeder and his colleagues, which concerns differences in rules of integrating information from the personality domains of morality and ability. Reeder and his coworkers (e.g. Reeder and Brewer, 1979) have claimed that immoral behaviours are more diagnostic than moral behaviours for the overall judgment of morality, and hence when the inference concerns the dimension of morality, one should expect a negativity effect in impression formation. The reverse should hold for the domain of abilities: since positive behaviours (testifying to high ability) are more diagnostic than negative behaviours, we should expect a positivity effect in dispositional judgments made along this dimension. Skowronski and Carlston (1987, 1989) have generalized this concept by relating the positive–negative asymmetry to the concept of categorical diagnosticity of judgmental cues. The theory, which they presented and tested, predicts that a negativity effect should take place whenever the negative information given is more diagnostic than the positive information given. However when the positive information is more diagnostic, a positivity effect should be expected. The two experiments described in their present paper have provided additional evidence corroborating this prediction, although it has also been noted that highly diagnostic cues are not sufficient for category membership and that increasing the subject's involvement enhances the negativity effect for morality judgments and (otherwise than predicted) weakens the positivity effect in ability judgments. This last result is consistent with the data obtained by Wojciszke and Brycz (Wojciszke, 1991) who showed that increased polarization of cues accompanies an increase in the negativity effect for morality traits but a decrease in the positivity effect for the inferences of ability. The studies leave unresolved a more important question: can the differences in cue diagnosticity explain the PNA in overall evaluative judgments (for example likeability of the stimulus person). Were this so, then in the controversy between the 'cold' and 'hot' explanations of the PNA effects, adherents of the 'cold' explanations would receive a very strong argument.

The latter issue is handled partly in the next paper (Martijn, Spears, van der Pligt and Jacobs). The first experiment corroborates the predictions ensuing from the theory of Reeder and the category diagnosticity model of Skowronski and Carlston. In Experiment II the authors checked the application of the model to the overall evaluative judgments. They have demonstrated that information which is negative is more influential, irrespective of whether it concerns morality or ability, and that negative information which concerns morality is more weighted, compared to the positive information and information about ability. This study, however, does not conclusively settle the issue of the generality of Skowronski and Carlston's model. Specifically, the cues were not behaviours but traits and they were not controlled for diagnosticity. A final conclusion is possible only when diagnosticity and affective valence of cues are orthogonally controlled.

Ikegami (in press) investigated the effect of valence of primed categories and found that priming of a negative category (hostility) resulted in assimilation of a subsequent ambiguous behavioural information into the primed category. Priming of a positive

category (friendliness) did not enhance the positive interpretation of a subsequent information. Actually it led to contrast effects (a more negative interpretation), but this effect was weaker than the effect of assimilation after negative priming. The underlying mechanism of this strong negativity effect is unclear. In search for an explanation, the author suggests that an important factor may be social expectancy making that friendliness is expected as normal, hostility being abnormal.

The four subsequent papers refer to the phenomenon of positivity bias and its relation to the negativity effect. Specifically, they search for mechanisms responsible for the structure of evaluations in which positive elements from a background against which negative elements stand out as figures relating to the positive background in proportion to the golden section. This maximizes the informational content of the negative elements, in terms of contribution to average uncertainty. The paper by Adams-Webber proves that this structure is related to self-esteem. The proportion in which different poles of personal constructs (positive or negative) are used for evaluation of an other depends on the pole to which the self is assigned. The author argues that the positive poles of constructs (e.g. happy) apply to larger amounts of things than do the negative poles if the self is assigned to the positive poles. When the self is assigned to the negative poles, then the latter poles apply to larger amounts of things than if the self is not assigned but still to smaller amounts than are assigned to positive poles to which the self is assigned.

A crucial question concerns the higher frequency, lower differentiation and lower complexity of positive than negative judgments. Are these phenomena produced by the positivity bias, that is the tendency to initiate beneficial relations with the environment? Or are they manifestations of the informational negativity effect, that is the tendency to maximize an informational content of detrimental aspects of the environment in order to avoid them? Tuohy and Stradling check a third possibility: that both sources are operative and therefore that some negativity biases (when positive elements are figures on the negative background) are implicated with the same psychological mechanism as some positivity biases. The conclusions formulated by the authors suggest that the structure of representation with a majority of positive and a minority of negative elements enhances the informational content of the unpleasant elements and therefore can be seen as a manifestation of the informational negativity effect. On the other hand, the reverse structure, with major negative and minor positive elements, will enhance the informational content of the positive element and may be connected with the approach behaviours. Since Tuohy and Stradling's findings are based on a higher-order analysis of normative linguistic data and effects of familiarity are not consistent, these conclusions have to be approached as an interesting hypothesis which requires further empirical tests.

Claeys and Timmers (in press) analyse some asymmetrical properties of negative and positive trait adjectives in terms of the informational negativity effect. They gathered data showing that undesirable trait adjectives, as compared to desirable ones, (a) are estimated to be less similar in meaning and less likely to co-occur in the same person, (b) are less intercorrelated in the memory-based self-ratings, (c) have a lower category breadth and higher discriminative value. The authors further demonstrate that some manifestations of the higher informativeness of the negative adjectives, such as their lower similarity in meaning, are not confounded with the lower category breadth of those adjectives.

Results of the study run by Lindeman (in press) show a similar informational

asymmetry in the domain of political attitudes. She has found that such aspects of attitudes like intensity, centrality and behavioural commitment to them are intercorrelated in positive attitudes but not in negative attitudes. This finding suggests that the structure of negative attitudes may be more complex than the structure of positive attitudes.

A separate group is formed by three papers which refer to the asymmetrical effects of mood on cognitive processes (Bless, Hamilton and Mackie, Bohner, Crow, Erb and Schwarz, Forgas). Although the theoretical approaches presented in these papers are somewhat interrelated and the authors refer to each other, they tend to represent two distinct views on the psychological channels through which mood may influence judgment and cognition. The paper of Forgas bears on the rather traditional view according to which affect, irrespective of its valence, biases perception and judgment. This view has received a rich empirical and theoretical base with the work of Bower (1981), and the present author (Forgas and Bower, 1988). According to this view, the strength of the biasing effects of mood on cognition and judgment depends on the amount of cognitive effort which has to be invested. This means that 'mood effects on cognition and judgment are most likely to be significant when the information base is complex and elaborate, selective and constructive proceeding is required, and the evidence is capable of supporting alternative interpretations' (Forgas, 1992). In line with these predictions, the author has received evidence showing that mood effects are much stronger in the perception of atypical, non-prototypical target persons than prototypical ones. The asymmetrical effects of mood, however, have been revealed in a higher recall of atypical objects under negative than under positive mood and typical objects under positive than under negative mood. This result modifies the assumption on the barely nonspecific influence of mood, and prepares ground for the two other papers.

The paper of Bless, Hamilton and Mackie provides evidence for the widely acknowledged claim that mood influences cognition through a selective choice of an information processing strategy. Positive moods facilitate the choice of a heuristic implying more superficial information processing; negative moods lead to a more analytic and systematic way of information processing. Specifically, the authors found that a positive mood facilitated higher clustering of person information suggesting that comparable levels of recall in different mood conditions are mediated by different underlying processes. In this way they add to the body of evidence reviewed by Sinclair and Mark (in press) and parallel Lindeman (in press) who shows that negative attitudes (attitudes revealing negative emotions) are less structured than positive attitudes.

The paper of Bohner, Crow, Erb, and Schwarz presents a theory, developed by Schwarz (1990) according to which the asymmetrical effects of mood on information processing may be understood within the concept of mood-as-information, according to which feelings play the adaptive function of signalling to the organism the state of the environment the organism is in. The positive mood signals a safe environment and hence no need for a systematic and effortful processing strategies, while the negative mood reflects a problematic environment and hence calls for a more detail-oriented, analytical processing. This view on the function of emotions is not entirely new in psychology (*cf.* Simonov, 1970; Mandler, 1975) but it has not been so often recognized in the contemporary research on the relationship between mood and cognition. Schwarz, together with his colleagues have collected a considerable body

of evidence corroborating this view. In the present paper the asymmetrical effects of mood on the choice of information processing strategies are approached in the light of theories stressing two channels of persuasion: central versus peripheral (*cf.* Petty and Caccioppo, 1986) or systematic versus heuristic (Chaiken, 1980). It is demonstrated that a positive and a negative mood facilitate the choice of respectively a peripheral and a central channel.

Finally, the last two papers (Leyens and Yserbyt, McGuire and McGuire) deal with the cognitive, as contrasted with the affective, forms of asymmetry (affirmation–negation in the paper by McGuire and McGuire, and confirmation–disconfirmation in the paper of Leyens and Yzerbyt). As such, they relate to the important and empirically rich domain of cognitive psychology which investigates cognitive biases committed in lay inductive reasoning. The tendency to ignore negative information in thinking and in hypothesis testing is perhaps the most spectacular cognitive bias committed by people (*cf.* Wason, 1960; Evans, 1989). This bias was recently related to the concept of the affective PNA by Lewicka (1989) within a framework which predicts differences in the logical reasoning schemata used to infer causes of positively versus negatively evaluated events. The two papers in this issue contribute to these very fresh attempts to build a bridge between both types of asymmetry.

Leyens and Yzerbyt show that subjects request more evaluatively positive and more confirming information than negative and disconfirming information in order to decide that a target person is a member of their own group. Apparently, the higher informativeness of evaluatively negative information (informational negativity effect) is paralleled by higher informativeness of disconfirming evidence. The authors put their findings in a theoretical context of social stereotyping and intergroup relations stressing an 'ingroup overexclusion effect' — that is the tendency to apply stricter criteria when categorizing somebody as a member of one's own group than as a member of an outgroup. It is not yet clear whether this effect is a genuine irreducible intergroup phenomenon or just another manifestation of a more general bias concerning decision-making. Further research is required in order to isolate effects of group (ingroup versus outgroup) from effects of decision-type (belonging versus not-belonging to the group).

McGuire and McGuire define COGNITIVE asymmetry as a difference in the ease of thinking about the properties which an object has versus the properties which it has not, and AFFECTIVE asymmetry as a difference in the ease of thinking about desirable versus undesirable characteristics. On the basis of a review of the literature and an impressive series of 10 own experiments, the authors find overwhelming evidence confirming the 'cognitive' but not the 'affective' asymmetry, symmetry appearing the rule on the affective level. The latter conclusion may surprise readers who are acquainted with the numerous affective positivity biases and negativity effects reviewed, for instance, by Czapinski (1985), Kanouse and Hanson (1971), Matlin and Stang (1978), and Peeters and Czapinski (1990). However, a closer examination of the material presented reveals that a number of subtle distinctions and preconditions regarding affective asymmetry were not taken into account. Firstly, the distinction between input- and output-bias (see above) was disregarded. Hence affective negativity effects and positivity biases were considered as symmetrical opposites rather than as distinct psychological phenomena that are functionally related to each other without being mutually exclusive. Secondly, evaluative (affective) and descriptive (cognitive) dimensions are confounded in experimental tasks requiring

subjects to generate (un)desirable properties of a given object rather than to provide a pure overall evaluation of the object. As explained elsewhere (Peeters, 1991), similar tasks are not very suitable to demonstrate pure affective–evaluative asymmetry. Only in the two last experiments, the dependent variable was a pure desirability rating — without descriptive component — which allowed to expect an affective negativity effect. Specifically one could expect that asking a subject to think of undesirable characteristics of an object would produce a negative change of the subject's evaluation of the object that would be larger than the positive changes produced by asking a subject to think of desirable characteristics. However, this sort of asymmetry was not investigated by McGuire and McGuire. The symmetry they report concerns evaluative effects of having versus lacking certain characteristics, the effects being symmetrical in that they are about equal in magnitude (and, of course, in opposite direction) for desirable as for undesirable characteristics.

Ultimately, the point of McGuire and McGuire's study is that cognitive asymmetry is quite straightforward in comparison with affective asymmetry which involves a number of distinctions and restrictions without which it dissolves into an apparent symmetry. To put it simply: if 'to be or not to be?' is the question, 'to be' seems the answer. However, if 'to love or to hate?', is the question, then the answer is not that simple. Apparently the heart hates and loves as well, but in order to hate it needs a reason, while it needs no reason to love.

REFERENCES

Abele, A. (1989). 'Mood effects on creative performance. A test of the mood by task interaction hypothesis'. Unpublished manuscript, University of Erlangen-Neurnberg, Germany.

Alloy, L. B. and Abramson, L. Y. (1979). 'Judgment of contingency in depressed and non-depressed college students: Sadder but wiser?' *Journal of Experimental Psychology: General*, **108**: 441–485.

Bannister, D. and Mair, J. M. M. (1968). *The Evaluation of Personal Constructs*, Academic Press, London.

Boucher, J. and Osgood, C. E. (1969). 'The Pollyanna Hypothesis', *Journal of Verbal Learning and Verbal Behavior*, **8**: 1–8.

Bower, G. H. (1981). 'Mood and memory', *American Psychologist*, **36**: 129–148.

Bruner, J. S. and Tagiuri, R. (1954). 'The perception of people'. In: Lindzey, G. (Ed.) *Handbook of Social Psychology*, 1st edn., Vol. 2, Addison-Wesley, Reading, Mass. pp. 634–654.

Chaiken, S. (1980). 'Heuristic versus systematic information processing and the use of source versus message cues in persuasion', *Journal of Personality and Social Psychology*, **39**: 752–766.

Claeys, W. and Timmers, L. (In press). 'Some instantiations of the informational negativity effect: Positive–negative asymmetry in category breadth and in estimated meaning similarity of trait adjectives', *European Journal of Social Psychology*.

Clark, H. H. and Clark, E. V. (1977). *Psychology and Language: An Introduction to Psycholinguistics*, Harcourt, New York.

Czapinski, J. (1982). 'Positive–negative asymmetry at group and individual level. Further evidence and new interpretation', *Polish Psychological Bulletin*, **13**: 153–158.

Czapinski, J. (1985). *Wartosciowanie — zjawisko inklinacji pozytywnej. O naturze optymizmu* (Valuation — The positivity bias phenomenon. On the nature of optimism), Ossolineum, Warszawa.

Czapinski (1986). 'Informativeness of evaluations in interpersonal communication: Effects of valence, extremity of evaluations and ego-involvement of evaluator', *Polish Psychological Bulletin*, **17**: 155–164.

Czapinski, J. (1988). *Wartosciowanie — Efekt negatywnosci. O naturze realizmu* (Valuation — The negativity effect. On the nature of realism), Ossolineum, Warszawa.

Czapinski, J. and Peeters, G. (1990). '"Cold" and "Hot" explanations of the negativity effect'. Unpublished manuscript.

Evans, J. St. B. T. (1989). *Bias in Human Reasoning: Causes and Consequences*, Lawrence Erlbaum, London.

Fiedler, K. (1988). 'Emotional mood, cognitive style, and behavioral regulation'. In: Fiedler, K. and Forgas, J. (Eds) *Affect, Cognition and Social Behavior. New Evidence and Integrative Attempts*, C. J. Hogrefe, Inc., Zurich, pp. 100–119.

Fiske, S. T. (1980). 'Attention and weight in person perception: The impact of negative and extreme behavior', *Journal of Personality and Social Psychology*, **38**: 889–906.

Forgas, J. P. (1989). 'Mood effects on decision making strategies', *Australian Journal of Psychology*, **41**: 197–214.

Forgas, J. P. (1992). 'Affective influences on interpersonal perception'. In: Stroebe, W. and Hewstone, M. (Eds) *European Review of Social Psychology*, Vol. 3, Wiley, Chichester.

Forgas, J. P. and Bower, G. H. (1988). 'Affect in social and personal judgments'. In: Fiedler, K. and Forgas, J. P. (Eds) *Affect, Cognition, and Social Behavior*, Hogrefe, Toronto, pp. 183–208.

Ikegami, T. (In press). 'Positive–negative asymmetry of priming effects on the impression formation', *European Journal of Social Psychology*.

Irwin, M., Tripodi, T. and Bieri, J. (1967). 'Affective stimulus value and cognitive complexity', *Journal of Personality and Social Psychology*, **5**: 444–448.

Isen, A. M. (1987). 'Positive affect, cognitive processes and social behavior'. In: Berkowitz, L. (Ed.) *Advances in Experimental Social Psychology*, Vol. 20, Academic Press, New York, pp. 203–253.

Isen, A. and Means, B. (1983). 'The influence of positive affect on decision making strategy', *Social Cognition*, **2**: 28–31.

Kanouse, D. E. and Hanson, L. R. Jr. (1971). 'Negativity in evaluations'. In: Jones, E. E., *et al.* (Eds) *Attribution: Perceiving the Causes of Behavior*, General Learning Press, Morristown.

Lewicka (1989). 'Toward a pragmatic perspective on cognition: Does evaluative meaning influence rationality of lay inferences?' *Polish Psychological Bulletin*, **20**: 267–285.

Lewicka, M., Piegat, A. and Krzyzak, K. (1990). 'Mood related differences in predecisional information search strategies'. Unpublished manuscript, University of Warsaw.

Lindeman, L. (In press). 'Strength in positive and negative political attitudes', *European Journal of Social Psychology*.

Mandler, G. (1975). *Mind and Emotion*, Wiley, New York.

Markus and Zajonc (1985). 'Cognitive perspective in social psychology'. In: Lindzey, G. and Aronson, E. (Eds) *Handbook of Social Psychology*, Vol. 1, Random House, New York, pp. 137–230.

Matlin, M. W. and Stang, D. J. (1978). *The Pollyanna Principle. Selectivity in Language, Memory and Thought*, Schenkman Publishing Company, Cambridge, Mass.

Peeters, G. (1971). 'The positive–negative asymmetry: On cognitive consistency and positivity bias', *European Journal of Social Psychology*, **1**: 455–474.

Peeters, G. (1989). 'Evaluative positive-negative asymmetry in adjective-noun compounds', *Polish Psychological Bulletin*, **20**: 255–266.

Peeters, G. (1991). 'Evaluative inference in social cognition: The roles of direct versus indirect evaluation and positive–negative asymmetry', *European Journal of Social Psychology*, **21**: 131–146.

Peeters and Czapinski (1990). 'Positive–negative asymmetry in evaluations: The distinction between affective and informational effects'. In: Stroebe, W. and Hewstone, M. (Eds) *European Review of Social Psychology*, Vol. 1, Wiley, Chichester, pp. 33–60.

Petty, R. E. and Cacioppo, J. T. (1986). *Communication and Persuasion. Control and Peripheral Routes to Attitude Change*, Springer, New York.

Reeder, G. D. and Brewer, M. B. (1979). 'A schematic model of dispositional attribution in interpersonal perception', *Psychological Review*, **1**: 61–79.

Ruehlman, L. S., West, S. G. and Pasahow, R. J. (1985). 'Depression and evaluative schemata', *Journal of Personality*, **53**: 46–92.

Schwarz, N. (1990). 'Feelings as information: Informational and motivational functions of

affective states'. In: Sorrentino, R. and Higgins, E. T. (Eds) *Handbook of Motivation and Cognition: Foundations of Social Behavior*, Vol. 2, Guilford Press, New York, pp. 527–561.

Simonov, P. V. (1970). 'The information theory of emotions'. In: Arnold, M. B. (Ed.) *Feelings and Emotions: The Loyola Symposium*, Academic Press, New York, pp. 145–149.

Sinclair, R. C. and Mark, M. M. (In press). 'The influence of mood state on judgment and action: effects on persuasion, categorization, social justice, person perception, and judgmental accuracy'. In: Martin, L. L. and Tesser, A. (Eds) *The Construction of Social Judgment*, Erlbaum, Hillsdale, N.J.

Skowronski, J. J. and Carlston, D. E. (1987). 'Social judgment and social memory: The role of cue diagnosticity in negativity, positivity, and extremity biases', *Journal of Personality and Social Psychology*, **52**: 689–699.

Skowronski, J. J. and Carlston, D. E. (1989). 'Negativity and extremity biases in impression formation: A review of explanations', *Psychological Bulletin*, **105**: 131–142.

Taylor, S. E. (1989). *Positive Illusions: Creative Self-Deception and the Healthy Mind*, Basic Books, New York.

Taylor, S. E. (1991). 'Asymmetrical effects of positive and negative events: The mobilization–minimization hypothesis', *Psychological Bulletin*, **110**: 67–85.

Taylor, S. E. and Brown, J. D. (1988). 'Illusion and well-being: A social psychological perspective on mental health', *Psychological Bulletin*, **103**: 193–210.

Wason, P. (1960). 'On the failure to eliminate hypotheses in a conceptual task', *Quarterly Journal of Experimental Psychology*, **12**: 129–140.

Wojciszke (1991). *Procesy oceniania ludzi* (person evaluation processes), Nakom, Poznan.