

Unrealistic Optimism and Positive–Negative Asymmetry: A Conceptual and Cross-cultural Study of Interrelationships between Optimism, Pessimism, and Realism

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Using a variant of Weinstein's (1980) technique for the measurement of unrealistic optimism, subjects were classified as optimistic, realistic, or pessimistic about their chances of being confronted in the future with problems such as divorce, nervous breakdown, etc. On the basis of previous theory and research on cognition and affect, it was hypothesized that, across problems, subjects would alternate optimism with realism rather than with pessimism. Cross-cultural data obtained from 19 samples of Belgian, Moroccan, and Polish subjects not only confirmed the hypothesis but also showed high agreement about the nature of the problems that were selectively associated with optimism, realism and pessimism.

Au moyen d'une variante de la technique de mesure de Weinstein (1980) concernant l'optimisme dit irréaliste, des sujets sont classifiés comme optimistes, réalistes ou pessimistes quant à leurs chances d'être confrontés dans le futur à des problèmes tels que divorce, dépression, etc. Nous basant sur des recherches antérieures sur les processus cognitifs et affectifs, nous avons avancé l'hypothèse que d'un problème à l'autre, les sujets alterneraient l'optimisme avec le réalisme plutôt qu'avec le pessimisme. Des données obtenues sur 19 échantillons de sujets belges, marocains et polonais confirment l'hypothèse. En outre, elles révèlent une grande concordance quant à la nature des problèmes sélectivement associés avec des attitudes optimistes, réalistes et pessimistes.

INTRODUCTION

In a classic study, Weinstein (1980) asked subjects to rate their risks for certain negative life-outcomes (e.g. heart attack, car accident, etc.). He found that people tended to believe that the negative events were less likely to happen to them than to their peers. This optimism in comparative probability was called "unrealistic" because it implied that, on the average, subjects rated their risks as

"below average," which means that risks tended to be underestimated. Notice that "unrealistic optimism" can only be defined on a group level because, on the individual level, realism may sometimes be evidenced by perceiving that risks are lower for oneself than for others while at other times by perceiving that risks are greater for oneself. Meanwhile "unrealistic optimism" has become a popular concept, especially in psychology of health. For recent reviews, see Hoorens

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Part of the Polish data (1992) were gathered with support of the Polish Committee for Scientific Research (Grant # 1-1351-91-02).

(1994), Otten (1995), and Van der Pligt (1994). It is evident from the reviewed studies that unrealistic optimism can be both functional and dysfunctional. On the one hand, it adds to self-esteem, hence to mental health and ability to cope with diseases and other negative events (Scheier & Carver, 1992; Taylor & Brown, 1988; Weinstein, 1984). On the other hand, unrealistic optimism involves an illusion of invulnerability, which can hinder the prevention of those events.

The concept of unrealistic optimism can be related to theory and research on "positive-negative asymmetry" in cognition and affect reviewed by Peeters and Czapinski (1990) and further developed by them into a theory of subjective well-being (Czapinski, 1992; Czapinski & Peeters, 1991)¹ According to the theory, optimism is part and parcel of a biopsychological strategy to survive in an environment with a larger potential for negative than for positive life outcomes. Acting as if proceeding from the hypothesis that the outcomes of their actions will be positive, optimistic subjects may achieve a maximal portion of the relatively scarce potential of positive outcomes. At the same time, the subjects must be highly sensitive to environmental cues of imminent negative outcomes that are to be avoided, which results in what was called an "overemphasis of the negative" (Peeters, 1971) or "negativity effect" (Kanouse & Hanson, 1972). The latter implies that negative stimuli have more impact on a subject than positive stimuli, meaning, for instance, that the overall evaluation of a target is influenced more by the negative information one has about the target than by the positive information. A problem with the overemphasis of the negative would be that the ensuing avoidance reactions may interfere with the necessary approach behaviour. For instance, hiding all the time from predators, an animal may fail to search for food and therefore starve. This does not happen, however, because nonadaptive interference of avoidance reactions with approach behaviour is minimized by the operation of psychological processes involving an affective and a cognitive mechanism (Peeters & Czapinski, 1990).

¹ Analogous asymmetrical effects, such as those reviewed by Peeters and Czapinski with respect to positive and negative stimuli, have been reported with respect to positive and negative moods (e.g. Fiedler, 1990). In addition, the adaptive value of an optimistic bias was also

The "affective" mechanism operates by a steep decline of avoidance gradients when the physical or psychological distance of the negative stimulus increases. Hence, as soon as the predator is out of sight, the animal stops fleeing and hiding and can start to look for food. Evidently, a similar mechanism may not only contribute to unrealistic optimism but also detract from a willingness to undertake preventative actions against remote future evils.

The "cognitive" mechanism operates by a realistic appraisal of the negative potential as a means of adequate coping and control. This mechanism means that in the normal healthy subject, negative stimuli do not inspire pessimism but a sort of "realism." It is this "realism" that is on focus in the present study. Specifically, we will test the hypothesis that, contrary to the linguistic habit of contrasting optimism with pessimism, optimism rather alternates with realism. We will use operationalizations based on the widely used Weinstein technique for the assessment of unrealistic optimism.

Operational Definition of Realism

Operational definitions have to proceed from a theoretical definition. In common sense, a subjective view or judgement is called "realistic" if it reflects the true nature of things. However, this far-reaching epistemological definition is not the one used in the context of the psychological positive-negative asymmetry theory. When Peeters and Czapinski (1990) concluded that subjective judgements based on negative information are called more "realistic" than judgements based on positive information, it meant only that the former relied more than the latter on a rational account of the external stimulus information available. The judgements relative to positive information were more influenced by subjective propensities such as the subject's own feelings, desires, and tastes. Among the reviewed evidence supporting this conclusion were studies showing that judgements based on positive information involve more logical errors such as halo effects,

stressed by Taylor and Brown (1988), and the idea that positive and negative stimuli do not produce symmetric positive and negative affective reactions in normal psychological functioning is also implied by Taylor's (1991) mobilization-minimization hypothesis.

whereas judgements based on negative information are more in agreement with normative models of rational judgement (e.g. Lewicka, 1988). Another indication that subjects base negative judgements on a shared source of information such as objective stimulus input, rather than on idiosyncratic subjective propensities, is that subjects agree more on negative issues than on positive ones, even if the issues are as futile as preferences for letters of the alphabet (e.g. Nuttin, 1987).

Defining "realism" as an increased tendency to rely on a rational account of external information rather than on subjective propensities, the Weinstein technique allows for the following operationalization.

When subjects are completing Weinstein scales, they get external stimulus information from the experimenter saying that people like them have a certain chance of meeting certain negative events. Confronted with the question of estimating their chances, some subjects may dispose of idiosyncratic information, allowing them to estimate their chances realistically as higher or lower than those of their peers, but on the average one can expect that increased "realism" would involve an increased tendency among subjects to estimate the own chances as matching the plausible external standard offered by the experimenter. In terms of the Weinstein scale, this means that they would switch from the optimistic side of the scale to the neutral middle. Hence, our hypothesis that the alternative of optimism is realism rather than pessimism predicts that, given a group of presumably healthy subjects, a decrease of unrealistic optimism (less subjects rating their own chances better than those of peers) would result in increased realism (more subjects rating their own chances equal to those of peers) rather than increased pessimism (more subjects rating their own chances worse than those of peers). This means that the unidimensional continuum of the Weinstein scale would lodge two dimensions: (1) a dimension "optimism—realism" contrasting the positive side (optimism) against the neutral middle (realism), and (2) a dimension "pessimism" represented by the negative side without implying an unilateral contrast with either the positive or the neutral alternative.

The Cross-cultural Dimension

If unrealistic optimism is a manifestation of a biopsychological adaptive mechanism, as explained in the Introduction, then it may be culture-free, but the verbal method by which it is measured may not be so. For instance, current social norms prescribe optimistic talk in situations such as when people meet each other and one asks "How are you?" The expected answer is usually something like "Fine, and how are you?" However, in Polish culture, people may answer "bad" and start to complain; for this reason Polish culture has been characterized as a culture of complaint (Dolinski, in press). Also, in standardized questionnaire studies, reviewed by Dolinski (in press), Poles were often found to produce outstandingly pessimistic responses. For instance, Dolinski (1991) observed that Polish students expressed markedly lower belief in a just world than did their American, British, and Taiwanese peers. In addition, Czapinski (1992) observed that, using American and British norms of the Beck Depression Inventory (Beck, Ward, Mendelsohn, Mock, & Erbaugh, 1961) and the hopelessness scale of Beck, Weissman, Lester, and Trexler (1974), healthy Poles were diagnosed as mildly depressive and were not discriminated accurately from depressive patients. Finally, Dolinski (in press) observed that, in contrast with American students, Polish students (on average) define their mood of the day as worse than usual.

In the interpretations of their data, these authors do not suggest that Poles are pessimistic or depressive by nature. Dolinski (1991) pointed to the impact of recent historical experiences as well as to the influences of traditional Catholic religion, which stresses the positive value of humbleness and suffering and offers the perspective that misfortune and injustice will be compensated for in heaven. Czapinski (1992; Czapinski & Peeters, 1991) related the phenomenon to their "onion model" of well-being. The model stresses a biologically rooted optimistic core, "will to live," which is surrounded by more peripheral layers that are more susceptible to environmental influences such as bad events and cultural pressures. The verbal scales by which Poles were massively diagnosed as pessimists would tap only those peripheral layers, but not the core layer. The latter would be tapped by appropriate self-ratings of "will to live," asking for the intensity of the subjects' "desire to live" and "absence of breakdowns with suicide thoughts."

Consistently, the latter self-ratings were found to discriminate accurately between Polish normals and depressives.

Subsequent cross-cultural data obtained from male and female adults representing various educational and professional levels (Czapinski & Peeters, 1991) confirmed that healthy Poles score less favourably on Beck et al.'s hopelessness scale than do comparable American and Belgian subjects. Also in line with the previous findings and the assumed biological basis of "will to live," Poles joined Americans and Belgians in marking high scores on the "will to live" scales although absolute scores of Poles tended to be somewhat, but not consistently, lower than those of the other samples. As to unrealistic optimism, Dolinski, Gromski, and Zawisza (1987), as well as Czapinski and Peeters (1991), observed the usual optimistic bias. Moreover, the latter authors found that Poles showed about the same degree of unrealistic optimism as did Americans and Belgians. However, the distinction between realism and pessimism was not considered and is on focus in the present study.

METHOD

Subjects

Nineteen samples were composed in the following way.

In 1989, 670 Polish and 337 Dutch-speaking "Flemish" Belgian subjects were individually approached with a questionnaire "Study on Modern Living," which included a series of questions on general well-being and happiness, among which were the items used in the present study. As indicated in Table 1, Poles and Flemings were each divided into 6 parallel samples: female and male samples of high school pupils (about 17 years old), university students, and adults (aged 25 years or older and representing various levels of education and professional status). Another 4439 Poles completed the questionnaire in 1992 and were divided into 4 samples: male and female pupils and adults. In Poland, the data were gathered as part of a survey on well-being conducted by the Central Statistical Office, using a representative sample of the Polish population (based on probability sampling and stratified sampling of schools). Flemish subjects were recruited all over the country by graduate students of the KU Leuven, who volunteered to submit the questionnaire to a limited number of subjects selected on

the basis of specific criteria such as "male adult who is not a student," "female high-school pupil of the highest or highest-but-one class," etc. Finally, in the course of 1990-1991, the questionnaire was completed by 112 French-speaking Moroccan migrant girls who lived in Belgium and participated in a long-term cultural-anthropological research project on the life of Berber women in the Moroccan homeland and in Belgium after migration (Cammaert, 1985, 1992). They were divided into 3 samples: 43 Berber pupils, 34 Arab pupils, and a mixed group of 35 young adult women (aged 18 and 35) with a variety of educational level and professional status. Note that, in Morocco, Arabs form the dominant group whereas Berbers have a lower status. The families of most of the Arab subjects originated from towns, whereas in the Berber sample a large part had its origins in the country. In Belgium, as in the surrounding countries, Moroccan migrants belong to the lower socioeconomic classes. They are predominately Islamites, whereas Catholicism is the dominant and traditional religion in Belgium. Polish culture is also marked by Catholicism, but in addition by the Communist political system, which was only abolished after the 1989 data but before the 1992 data were gathered.

The differences in size and recruitment of samples could be a problem if the aim of the study had been to demonstrate differences between samples. The present aim being to demonstrate the generality of a hypothesized phenomenon across samples, the given differences work against the hypothesis and, in this way, add to the ecological validity of the study if the hypothesis is confirmed.

Questionnaire

The questionnaire "Study on Modern Living" belonged to a cross-cultural research project on subjective well-being (Czapinski, 1992; Czapinski & Peeters, 1991). It included a series of Weinstein scales for assessing "unrealistic optimism," which confronted the subjects with a list of possible problems they might meet in the future. The list included culture-specific items, such as "being given in marriage against one's will," which varied between samples and are thus disregarded, but also nine problems, presented in Table 2, which were submitted to all of the samples. For each problem, the subjects were asked to

estimate their chances of having the problem in comparison with the chances of others of the same age and sex. Ratings could range from 7 (chances much higher for the others than for oneself), through 4 (chances alike for self and others), to 1 (chances much lower for others than for oneself). Consistent with the operational definitions explained in the Introduction, subjects marking 5 or higher were classified as "optimists," those marking 4 as "realists," and those marking 3 or lower as "pessimists" (the scales presented to Moroccan subjects ranged from 5 through 3 to 1).

It could be objected that realism may be underestimated in that it was tapped by only one response alternative, whereas optimism and pessimism were tapped by more response alternatives. This objection is refuted, however, in that uneven distributions of response alternatives in Weinstein's early studies led to the same outcomes as the balanced response scales in subsequent studies (Hoorens, 1994). In addition, underestimating realism would not lead to false confirmation of the hypothesis because it would produce data alternating optimism with pessimism rather than with the predicted realism.

RESULTS AND DISCUSSION

Test of the Hypothesis

In order to demonstrate the way of testing the hypothesis, we consider a fictitious group of 100 subjects. We assume further that the group is optimistically biased with respect to a specific problem (problem 1) and hence can be subdivided into optimistic, realistic, and pessimistic subgroups in the following way:

	Optimists	Realists	Pessimists
Problem 1:	80	10	10

Imagine now that, relative to another problem (problem 2), the sample included only 60 optimists. This would mean that at least 20 out of the original optimists have switched either to realism or to pessimism (perhaps even more than 20 because among the 60 optimists there may be some former realists or pessimists). Our hypothesis predicts that more subjects switch to realism than to pessimism, resulting in an uneven distribution such as this one:

	Optimists	Realists	Pessimists
Problem 2:	60	30	10

When more problems are given, each subgroup is marked by a profile of frequencies across problems. Negative correlations between profiles indicate contrast between the corresponding subgroups. According to the hypothesis, most contrast should be observed between profiles of optimists and realists. Hence r between the number of optimists and the number of realists, computed across the nine problems used in the study, should not only be negative but also more negative than possible negative optimist–pessimist and realist–pessimist correlations.

In this way, each of the 19 samples was divided into 3 subgroups resulting in $19 \times 3 = 57$ profiles, which are displayed in Table 1. In order to avoid anomalies due to missing data, frequencies were transformed into proportions (presented without decimal points), which were computed for each problem separately. Hence the original frequencies are not perfectly reproduced by multiplying proportions by sample sizes (N). However, in general the deviations are minor in that the missing data (< 1% for Moroccan, < 2.4% for Polish, and < 2.6% for Flemish subjects) are widely spread over samples and problems. There are, however, some exceptions: 38% of Flemish and 23% of Polish "missing data" are restricted to responses of 1992 adult Poles and adult Flemish women to problems 5 and 6 (bad job and be fired).

The results show the usual dominance of optimism over pessimism. The scarce exceptions belong to Polish samples (e.g., young Polish females estimating their chances of confronting a nervous breakdown). As a whole, however, including Polish samples, optimistic responses outnumber pessimistic responses by far, confirming the generality of unrealistic optimism.

Product-moment correlations (r) were computed between the three profiles within each sample. The 19 r s between optimistic and realistic profiles ranged from -0.99 to -0.79 ($Me = -0.92$), those between optimistic and pessimistic profiles from -0.72 to 0.13 ($Me = -0.49$), and those between pessimistic and realistic profiles from -0.39 to 0.51 ($Me = 0.13$). Consistent with the hypothesis, all of the 19 r s between optimistic and realistic profiles were more negative than the two other r s [$f_e = 19/3 = 6.33$, $\chi^2(1) = 38.98$, $P = .00$]. Also r s between pessimistic and optimistic profiles were more negative than between pessimistic and realistic profiles for 18 out of 19 samples [$f_e = 19/2 = 9.5$, $\chi^2(1) = 15.21$, $P < .0001$], which indicates a stronger contrast

TABLE 1
 Sample Sizes (N), Proportions of Pessimists (Pe), Realists (Re) and Optimists (Op) per sample, and Outcomes of Component Analyses I and II with % of Variance Accounted for by Rotated Components (C) and Component Loadings (Decimal Points Are Omitted/F = Female, M = Male)

<i>Polish Samples (1989)</i>																		
Profile no.	<i>Pupils</i>						<i>Students</i>						<i>Adults</i>					
	<i>F (N = 144)</i>			<i>M (N = 110)</i>			<i>F (N = 76)</i>			<i>M (N = 80)</i>			<i>F (N = 165)</i>			<i>M (N = 95)</i>		
	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>
1 Drinking	03	05	92	07	17	76	11	04	85	20	09	71	05	03	92	08	01	91
2 Prison	03	10	87	06	15	79	03	13	84	10	27	63	01	05	94	07	16	77
3 Suicide	16	08	76	15	15	70	19	08	73	11	15	73	06	09	86	03	13	84
4 Divorce	18	34	48	20	30	50	24	28	48	18	32	51	15	21	63	20	13	67
5 Bad job	17	48	35	25	30	45	19	47	35	25	39	35	16	26	58	18	19	63
6 Be fired	13	37	50	24	26	51	21	29	49	29	33	38	07	21	71	06	24	70
7 Poisoned	20	67	13	15	66	19	12	69	19	11	71	18	17	61	22	12	62	26
8 Nerv. br.	54	23	23	41	29	30	56	19	25	30	29	41	46	27	27	28	22	49
9 Burglary	06	47	47	14	44	42	08	56	36	19	44	37	11	54	35	17	44	40
ANALYSIS I																		
C1 (54%)		96	-81		97	-86		97	-84		97	-93		97	-84		94	-94
C2 (30%)	92		-53	93		-48	95		-52	72			94		-49	78		
C3 (6%)																		
<i>Flemish Samples</i>																		
Profile no.	<i>Pupils</i>						<i>Students</i>						<i>Adults</i>					
	<i>F (N = 47)</i>			<i>M (N = 30)</i>			<i>F (N = 69)</i>			<i>M (N = 61)</i>			<i>F (N = 74)</i>			<i>M (N = 56)</i>		
	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
1 Drinking	05	05	90	07	10	83	03	12	85	16	15	69	01	23	76	13	16	71
2 Prison	02	14	84	00	13	87	01	10	89	10	18	72	01	09	90	00	21	79
3 Suicide	11	09	80	10	10	80	13	07	80	11	11	78	04	20	76	02	13	85
4 Divorce	07	37	56	04	18	78	09	43	48	09	31	60	05	30	64	04	21	75
5 Bad job	07	50	43	10	33	57	22	41	37	10	30	60	08	31	61	11	18	71
6 Be fired	10	66	24	08	54	35	09	58	32	05	39	55	08	19	58	09	16	74
7 Poisoned	04	78	18	07	67	27	04	76	20	07	64	29	04	80	16	05	62	33
8 Nerv. br.	20	30	50	10	47	43	30	30	40	25	15	60	29	36	35	27	23	50
9 Burglary	13	68	19	17	60	23	07	80	13	13	72	15	09	65	26	11	63	27
ANALYSIS I																		
C1 (54%)		93	-91		88	-85		93	-89		91	-89		90	-88		86	-82
C2 (30%)	77						92			73			95			86		
C3 (6%)	55			71														

(Continued)

TABLE 1 (Continued)

<i>Polish Samples (1992)</i>												
	<i>Pupils</i>						<i>Adults</i>					
	<i>F (N = 617)</i>			<i>M (N = 375)</i>			<i>F (N = 1805)</i>			<i>M (N = 1642)</i>		
	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>
Profile no.	37	38	39	40	41	42	43	44	45	46	47	48
1 Drinking	07	06	87	09	11	80	02	06	92	08	16	76
2 Prison	02	09	89	08	13	79	01	07	92	03	16	81
3 Suicide	08	09	83	09	09	83	04	08	89	03	11	86
4 Divorce	15	40	45	14	32	54	05	18	78	04	17	79
5 Bad job	25	51	24	24	45	31	15	26	60	18	30	52
6 Be fired	11	52	37	14	36	50	09	26	64	12	30	58
7 Poisoned	15	66	18	12	65	23	09	63	28	09	61	30
8 Nerv. br.	41	29	30	32	23	45	30	37	33	23	38	38
9 Burglary	09	56	35	12	54	34	10	50	40	11	47	42
ANALYSIS I												
C1 (54%)		92	-83		95	-91		96	-85		94	-84
C2 (30%)	96		-46	95			94		-48	85		-44
C3 (6%)												
<i>Moroccan Migrants (1990-1991)</i>										<i>ANALYSIS II</i>		
	<i>Berbers</i>			<i>Arabs</i>			<i>Mixed</i>			<i>(r between problems)</i>		
	<i>(N = 43)</i>			<i>(N = 34)</i>			<i>(N = 35)</i>					
	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>Pe</i>	<i>Re</i>	<i>Op</i>	<i>C1'</i>	<i>C2'</i>	<i>C3'</i>
										<i>(52%)</i>	<i>(27%)</i>	<i>(14%)</i>
Profile no.	49	50	51	52	53	54	55	56	57			
1 Drinking	00	00	99	03	06	91	00	00	99		97	
2 Prison	00	05	95	00	00	99	00	01	99		98	
3 Suicide	00	17	83	00	12	88	00	09	91		97	
4 Divorce	00	44	56	06	33	61	06	36	57		89	
5 Bad job	09	51	40	06	15	79	03	43	54		69	49
6 Be fired	02	58	40	03	45	52	11	43	46		69	58
7 Poisoned	02	51	47	00	41	59	03	56	41			94
8 Nerv. br.	16	42	42	12	26	62	26	37	37			95
9 Burglary	00	67	33	03	74	24	08	56	36			94
ANALYSIS I												
C1 (54%)		80	-75		74	-72		90	-80			
C2 (30%)	96		-45	92			87		-48			
C3 (6%)					63	-63						

between pessimism and optimism than between pessimism and realism. The latter outcome may not be surprising in the light of the common-sense contrast between optimism and pessimism and possible effects of the uneven distribution of response alternatives explained earlier. What may be surprising is that despite this, the data confirmed the hypothesis that, using the Weinstein operationalization, optimism contrasts more with realism than with pessimism. Moreover, this was a robust and reliable outcome. Indeed, it was replicated for 19 independent samples representing various levels of age and education, and drawn from three language-culture communities, one of which was marked by a habit of communicating pessimism.

Comparison of Groups

The confirmation of the hypothesis does not exclude variation between groups. For instance, let us imagine that the earlier hypothetical sample of 100 subjects are Belgians. Thus, in that example, the Belgians contrast optimism with realism by showing more optimism with respect to problem 1 than to problem 2, and more realism with respect to problem 2 than to problem 1. Imagine now a group of 100 Poles, who also contrast optimism with realism but do this by showing more optimism with respect to problem 2 than to problem 1, and more realism with respect to problem 1 than to problem 2. It may be evident that a similar set of data would not only confirm that both Poles and Belgians contrast optimism with realism, but it would also reveal that Polish optimism and realism differ from Belgian optimism and realism. Similar differences could be detected by computing correlations between profiles belonging to different groups. For instance, in this example, the difference between Belgians and Poles would be revealed by negative correlations between Belgian and Polish optimists and between Belgian and Polish realists (in this case accompanied with positive correlations between Belgian optimists and Polish realists, as well as between Belgian realists and Polish optimists). Thus, in order to explore possible differences between the 19 samples, we correlated each of the 57 profiles in Table 1 with each other profile, which resulted in a matrix with 1596 *rs*.

In order to reduce those data to manageable proportions, the matrix was subjected to a princi-

pal component analysis using the MULTISTAT statistical program. Notice that, by using component analysis rather than factor analysis, the part of the variance to be accounted for by unique factors, and the related error variance, was not discarded (Harman, 1976). In this way the proportion of variance that is accounted for by meaningful components reflects more accurately the prominence of those components than if irrelevant variance were to be discarded.

After inspection of eigenvalues, four components were retained (scree test) and subjected to varimax rotations. Loadings and percents of total variance associated with three of the rotated components (C1-C3) are presented in Table 1 (Analysis I). The fourth component (5% of the variance) was disregarded because loadings were low and the component was hard to interpret. For the sake of clarity, only component loadings at least as extreme as $\pm .40$ are reported.

The first component, C1, which accounts for 54% of the variance, reflects the hypothesized contrast between profiles of optimistic (positive loadings) and realistic (negative loadings) subgroups. The loadings being extremely high for all samples, C1 reveals that the contrasting profiles are very alike, not only across gender and age groups, but also across Flemish, Polish, and Moroccan groups.

The second component, C2, accounts for 30% of the variance. C2 reveals "pessimism" as a separate dimension with loadings beyond .70 for 18 out of the 19 pessimistic profiles, the only exception being the profile of Flemish male pupils. Thus the profiles of the pessimistic subgroups also seem very alike across the various samples. In addition, Table 1 shows that in 7 out of 10 Polish and 2 out of 3 Moroccan samples, the positive C2 loading of the pessimistic subgroup is accompanied by a noticeable negative C2 loading of the optimistic subgroup. This suggests that, contrary to the prediction of the theory, but in agreement with common sense, there is some contrast between optimism and pessimism after all. However, this contrast is consistently much weaker than the predicted contrast between optimism and realism. Indeed, the reported negative loadings on C2 hardly reach beyond the cut-off point of $-.40$ and are limited to only 9 out of the 19 samples (7/10 Polish samples and 2/3 Moroccan samples). It may be tempting to explain this outcome by referring to Polish sociocultural habits of expressing pessimistic attitudes, but in the light of extensive participant observation by

one of the authors (Cammaert, 1985, 1992), generalization of this interpretation to the Moroccan data seems unwarranted. The main point, however, in agreement with the hypothesis, is that the optimism–pessimism contrast is by far inferior to the optimism–realism contrast, with pessimism standing out as a separate dimension.

The third component C3 fills the hole left by the male Flemish pupils with a loading of $-.71$, suggesting that they have their own pessimistic profile. In addition, the same profile also transpires, to a limited extent, in the pessimistic responses of the female Flemish pupils. Finally, contrasting loadings on C3 are observed for subgroups 53 and 54, which confirm once more the hypothesis that optimism contrasts with realism.

It is noteworthy that components consistent with the hypothesis account for no less than 90% of the total variance. This high percentage may not be that exceptional, taking into account that groups rather than individuals were used as units of analysis and that group data are more reliable than individual data. The reason for having groups rather than individuals as units was that it was required by the operational definition of “realism” in contrast with “unrealistic optimism” (see earlier). However, Weinstein (1984) has also demonstrated unrealistic optimism on the individual level. Specifically, single individuals were found to underestimate their chances of confronting negative events as compared with the real chances that those events may occur. Generalizing from the present study, it may be worthwhile to consider the possibility of interpreting the middle scores of the Weinstein scale as manifestations of “realism” on the individual level. One implication is that, in the future, Weinstein scales should no longer be considered as unidimensional continua contrasting “optimism” (the belief that one is below average in risk) with “pessimism” (the belief that one is above average in risk). In addition, “realism” (the belief that the own risk equals the average of one’s peers) is to be taken into account as a third category. So far this has rarely been done: Welkenhuysen, Evers-Kiebooms, Decruyenaere, and Van den Berghe (1996) found realists outnumbering optimists (and pessimists) with regard to a genetic risk situation. Van der Velde and colleagues divided subjects into optimists, realists, and pessimists on the basis of the subjects’ perceived risk for future infection with AIDS. They found, for instance, more pessimism but not more realism in high-risk groups than in low-risk groups (Van der

Velde, Van der Pligt, & Hooykaas, 1994). More interesting was the observation that realists and pessimists contrasted with optimists in different psychological dimensions: Perceived Control for pessimists and Vigilance for realists (Van der Velde, Hooykaas, & Van der Pligt, 1992). It suggests that the trichotomization of the Weinstein scale may not only make sense on the group level but also on the individual level.

It is also noteworthy that the distinct profiles of optimistic, realistic, and pessimistic responses are very alike across samples, even if the samples belong to different cultures marked by different verbal habits concerning the expression of optimism and pessimism. Apparently, variety across problems is more important than variety between subject samples. Hence, in the last section we shall have a closer look at the possible role of the nature of the problems relative to which subjects manifested optimism, realism, and pessimism.

Exploring Content Aspects of Optimism, Realism, and Pessimism

As mentioned earlier, all optimistic profiles were contrasted with all realistic profiles on only one single component, C1. Although the limited number of problems might have led to spurious correlations between some profiles, it is extremely unlikely that spurious correlations would produce a component that would not only confirm our hypothesis but, in addition, would confirm it across 19 samples. Hence the question arises: What does this unique component mean? The same question can be raised concerning the “pessimism” component (C2), which unites 18 out of the 19 samples.

In order to provide answers we examined data profiles, displayed in Table 1, of the subgroups for which loadings obtained in ANALYSIS I reached beyond $\pm .40$. Average profiles of the 2 main components (83% variance) are presented in Table 2. In order to facilitate the interpretation of the profiles, another component analysis was first performed using product-moment correlations between the 9 problems (computed over the 57 subgroups in Table 1). Principal component analysis produced 3 salient components, which accounted for 93% of the variance. Subsequent varimax rotation produced the results reported in Table 1 as “ANALYSIS II”.

TABLE 2
Mean Scores over *N* Subgroups with Extreme Loadings on Components C1
(Realism–Optimism) and C2 (Pessimism–Optimism) from ANALYSIS I

	C1		C2	
	Pos. (Re) (<i>N</i> = 19)	Neg. (Op) (<i>N</i> = 19)	Pos. (Pe) (<i>N</i> = 18)	Neg. (Op) (<i>N</i> = 9)
1 Having a drinking problem	08	85	07	89
2 Being prisoned	12	85	03	89
3 Attempting suicide	11	81	08	82
4 Divorced few years after marriage	29	60	11	58
5 Having to take an unattractive job	35	51	16	45
6 Being fired from a job	37	50	11	52
7 Food poisoning	65	27	09	26
8 Nervous breakdown	30	40	31	32
9 Victim of burglary	58	32	10	38

N = Number of averaged subgroups; Re/Op/Pe = nature of averaged subgroups: Realists/Optimists/Pessimists.

ANALYSIS II suggests that the 9 problems can be reduced to 3 categories represented by components C1', C2', and C3'. C1' is marked by problems 1–4 (drinking, prison, suicide, divorce), which could be viewed as manifestations or consequences of more or less self-chosen but inadapative behaviour of the subject. C2' is marked by problems 7 and 9 (food poisoning and victim of burglary), which may be related to causal agents beyond the subject, such as unlucky coincidences and negative acts by others. Problems 5–6 (bad job, fired) are somewhat in between, although C1' dominates. Finally there is C3', marked only by problem 8 (nervous breakdown).

Bearing those problem categories in mind, we return now to the average profiles in Table 2, which represent components of ANALYSIS I.

The two profiles of C1 show that the general optimism–realism contrast involves mainly problem categories C1' versus C2'. Specifically, most optimism and least realism are reported for the problems 1–3, which would relate to the subjects' own behaviour. However, the subjects are predominantly realistic concerning problems 7 and 9, which would relate to external agents. Problems 5 and 6 (bad job, fired) take a somewhat intermediary position. They load on both C1' and C2', which may indicate that they trigger conflicting response tendencies: To the extent professional status is related to one's own effort, subjects may be tempted to optimism, but to the extent it is related to economic and other vicissitudes, they may be tempted to realism. Unable to choose, many of them may not respond, which may

explain the numerous nonresponses by Polish adults in 1992, which was after the introduction of the new regime with a free market economy, and by Flemish women, who are worse off on the labour market than their male fellows².

As to C2, we should not contrast "pessimism" straightforwardly with "optimism" because the positive "pessimism" loadings were very high and involved all but one of the pessimistic subgroups, whereas the contrasting negative loadings were much lower and reached the level of .40 for only 9 out of the 19 optimistic subgroups. Hence, in order to establish the content of "pessimism" as a separate dimension distinct from "realism," we should focus primarily on the average profile of the 18 subgroups with positive loadings. Table 2 (3rd data column) shows that this profile is characterized by low pessimism concerning all problems except "nervous breakdown," which elicited about as much pessimism as realism. The last profile (4th column), then, is based on the nine groups with negative loadings on C2 and represents "optimism" as far as it was contrasted with "pessimism." Actually there seems no noteworthy difference with the optimism of C1 that was contrasted with "realism."

Altogether the data may suggest that subjects are most optimistic with respect to possible problems caused by their own behaviour, most realistic with respect to problems caused by external

² Alternatively, a number of nonresponses may reflect irrelevance of job problems to married Flemish women who do not pursue a profession.

agents, and most pessimistic with respect to nervous breakdowns.

The association of optimism with problems caused by one's own behaviour might fit into the numerous studies that have related "unrealistic optimism" to perceived control (Hoorens & Buunk, 1992; Van der Pligt, 1991; Van der Velde et al., 1992; C.S. Weinstein, 1988; N.D. Weinstein, 1982, 1984, 1987). In line with the theory presented in the Introduction, overestimating one's ability to avoid problems caused by one's own behaviour may be adaptive in that it enhances self-esteem (Hoorens, 1994). Perceiving oneself as a source of problems may detract from self-esteem, but self-esteem may not really be at stake if problems are perceived as being caused by external agents. Consistently less unrealistic optimism and more realism were observed concerning the problems caused by external agents. In line with the interpretation of realism as openness to external stimulus information, this realism could be explained in that problems caused by external agents may not be perceived as uncontrollable but as controllable provided extra vigilance is invested. Support for this interpretation can be found in the study of Van der Velde et al. (1992), already mentioned, where it was observed that subjects showing realism with respect to the comparative probability of catching AIDS scored lower on vigilance than did optimists. The contrast between optimism and realism would then be related to the perceived degree of effectively exerted control rather than to perceived controllability as such. In agreement with this interpretation, Otten (1995) observed that subjects who were optimistic with respect to various problems perceived themselves as engaging in more preventive behaviours than others.

If both optimism and realism are associated with controllability, then pessimism should be marked by uncontrollability. In the study by Van der Velde and colleagues, pessimists were indeed found to score lower on perceived control. In addition, the link between pessimism and uncontrollability was manifest in a study by Fenigstein (1984), who observed that subjects were more likely to see themselves, compared to others, as the target of a negative event, such as a bad exam, that had already occurred and thus could not be altered. The idea that nervous breakdowns may also be perceived by many subjects as uncontrollable is not without appeal, and may explain why it is associated with pessimism.

CONCLUSION

The data confirm the cross-cultural generality of the phenomenon of unrealistic optimism. In addition they offer cross-cultural evidence that psychological relationships between optimism, realism, and pessimism, operationalized using Weinstein's technique to assess unrealistic optimism, are marked by a contrast between optimism and realism rather than between optimism and pessimism. This outcome argues against a common practice to deal with the Weinstein scale as a unidimensional continuum ranging from extreme optimism over realism to extreme pessimism. The present theory and data suggest a bidimensional model: one bipolar dimension contrasting optimism with realism, the other representing "pessimism" as a separate dimension that seems rather unipolar, although a minor contrast with "optimism" is not to be excluded.

Somewhat unexpectedly, cross-cultural agreement was found to extend to the ways in which amounts of optimism, realism, and pessimism varied across different problem issues. The issue still needs to be explored further before an interpretation can be proposed. Meanwhile, considering the present data and reviewed evidence, one may speculate that pessimism is associated with perceived uncontrollability of negative outcomes, whereas the contrast between realism and optimism would not be related to the subject's perception of having control as such but to the expectation that the control will be exerted effectively. This expectation would inspire optimism that is qualified as unrealistic if the subject overestimates the amount of exerted control, for instance, because it adds to his or her self-esteem.

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