Beliefs About Consciousness and Reality of Participants at 'Tucson II'

Imants Barušs, Department of Psychology, King's College, University of Western Ontario
266 Epworth Avenue, London, Ontario, Canada N6A 2M3
Robert J. Moore, Department of Psychology, Campion College, University of Regina
Regina, Saskatchewan, Canada S4S 0A2

Abstract: In previous studies we had found correlations between the material-transcendent dimension underlying the Western intellectual tradition and the diversity of ideas concerning consciousness. In the course of our work we developed the Beliefs About Consciousness and Reality Questionnaire that could be used for measuring fundamental beliefs about consciousness and reality. A survey of participants at the scientific meeting Toward a Science of Consciousness 1996 "Tucson II" was conducted using this questionnaire. Results from 212 respondents indicated scores substantially in the transcendent direction, both for scales underlying the questionnaire as well as for some of its individual items, relative to a 1986 standardization sample. Having traditional or one's own religious beliefs, interest in phenomenology and culture, lack of interest in neural correlates and age were also all correlated with scale scores in the transcendent direction. Given the diversity of fundamental beliefs about consciousness and reality of listeners at a meeting such as Tucson II, speakers need to find ways to communicate across the spectrum of the material-transcendent dimension.

Introduction

While reading the academic literature concerning consciousness in the early 1980s, it became clear to us that there was little agreement concerning the nature of consciousness or the methods appropriate for its study. It appeared that ideas about consciousness and its investigation were dependent upon personal beliefs about the nature of reality. More specifically, variations in understanding consciousness appeared to coincide with variations in belief systems along a material-transcendent dimension. Such or similar dimensions had been posited to underlie the Western intellectual tradition (Frank, 1977; Osborne, 1981) and had been found empirically to underlie the presuppositions of psychologists (Coan, 1968; Kimble, 1984; Krasner & Houts, 1984). We decided to conduct a survey to investigate the possible correlations of notions of consciousness with beliefs about reality.

A comprehensive process that included preliminary, pilot and survey stages was used for the development and implementation of a consciousness questionnaire. Ideas about consciousness from over 150 academic books and articles in the sciences and philosophy were reformulated as items for the questionnaire. While some statements concerning belief systems were taken from five existing research instruments, others had to be created in order to span what were expected to be the relevant characteristics of personal beliefs. Over 1491 copies of the final version of the questionnaire were circulated in 1986 to academics and professionals on the basis of their possible interest in consciousness. Various multivariate statistical procedures were used to analyse the 334 returned questionnaires resulting in a detailed depiction of the interrelationships between notions of consciousness and beliefs about reality along a material-transcendent dimension. Not surprisingly, those with materialist beliefs were likely to conceptualize consciousness in information processing

terms while those tending toward transcendentalism were likely to emphasize subjective features of consciousness and to declare its ontological primacy. This work has been described in detail in Barušs (1990) and summarized in Barušs and Moore (1989; 1992).

The statistical procedures used for analysing data included factor analyses that revealed the presence of six predominant factors. Because items concerning consciousness were intertwined with those concerning beliefs about reality, the distinction between notions of consciousness and beliefs about reality was dropped, and the factors were reconceptualized as scales. These six scales, together with a grand scale consisting of all the items making up the six factors, could now be used to measure beliefs about consciousness and reality. The process of turning the factors into scales and the subsequent psychometric properties of the scales has been described in Barušs and Moore (1992). The resulting shorter instrument was called the Beliefs About Consciousness and Reality Questionnaire.

While the primary motivation for this research had been to advance the scientific understanding of the confusion surrounding the study of consciousness, it had had a second, pedagogical, purpose. The results of an investigation of the way in which consciousness is studied could help to provide a context within which individual researchers could articulate their research goals. In this way the field of consciousness studies could become defined, despite the fact, indicated by the results of this study, that it could not be unified. An opportunity to promote such self-examination was presented by the scientific meeting, Toward a Science of Consciousness 1996 “Tucson II”, sponsored by the University of Arizona in Tucson, Arizona from April 8 to 13, 1996. A decision was made to survey participants by distributing the Beliefs About Consciousness and Reality Questionnaire at the meeting and to provide feedback by publishing the results.

Method

A Consciousness Survey, consisting of a cover page requesting general information from respondents followed by the Beliefs About Consciousness and Reality Questionnaire, was prepared prior to the conference. The request for general information as it appeared on the cover page is given in the Appendix. The 38 items of the Beliefs About Consciousness and Reality Questionnaire have been given in Table 1 while the sources for those items and the response categories have been described in the Appendix. About 1000 copies of the questionnaire were distributed to participants at Tucson II along with the other materials that they received at the time of their arrival. Respondents could return completed questionnaires to the registration desk at any time during the conference or mail them to the first author after its termination.

Results

Two hundred and twelve completed questionnaires were received at the time of data entry. The mean age of respondents was 50. Twenty-nine percent were women. Fifty-six percent indicated that they had earned a doctorate. Thirty-two percent were presenters at the conference.

The most straightforward way to look at these data is to consider the frequencies of responses for individual questionnaire items. Thus, for example, 66% indicated that they had had "an experience which could best be described as a transcendent or mystical experience" and 27% that "the accepted methods of science are the only proper way in which to investigate consciousness." Frequencies of responses for all questionnaire items have been given in Table 1.

TABLE 1
Questionnaire Items and Frequencies of Responses

Section I: Personal Statements		*N* = 212	
Item #	Item	Yes %	No %
1	I think about the ultimate meaning of life.	93	7
2	My ideas about life have changed dramatically in the past.	75	25
3	My spiritual beliefs determine my approach to life.	68	30
4	I have had experiences which science would have difficulty explaining.	66	34
5	I feel a need to find a real meaning or purpose in my life.	72	26
6	I have had an experience which could best be described as a transcendent or mystical experience.	66	34
7	It is important to me to spend periods of time in contemplation or meditation.	77	22
8	I have had an experience which could best be described as an out-of-body experience.	31	67

(*table continues*)

Section II: General Statements		*N* = 212	
Item #	Item	Agree %	Dis-agree %
9	There is no reality other than the physical universe.	24	58
10	Extrasensory perception is possible.	67	17
11	The inner experiential world is vaster, richer and contains more profound meanings than most people think.	80	9
12	The existence of human consciousness is evidence of a spiritual dimension within each person.	61	26
13	Eastern religions have much to offer our understanding of consciousness.	82	11
14	Introspection is a necessary element in the investigation of consciousness.	93	4
15	Statements about human cognition are meaningless without reference to particular states of consciousness.	52	32
16	Reincarnation actually does occur.	23	41
17	The concept of limits does not apply to consciousness.	32	37
18	In order to fully understand human consciousness, a process of psychological change is necessary which may be achieved through meditation or a spiritual way of life.	52	34
19	The accepted methods of science are the only proper way in which to investigate consciousness.	27	67
20	The reason the universe is the way it is, is to support human life.	11	66
21	Physical reality is an extension of mental reality.	35	37

(*table continues*)

Section II: General Statements (Continued)			*N* = 212
Item #	Item	Agree %	Dis-agree %
22	Consciousness gives meaning to reality.	77	13
23	Consciousness is more real than physical reality.	43	34
24	Human consciousness would not exist without the brain.	74	13
25	There is an absolute truth which is not context-dependent.	37	29
26	Our culture can be viewed as a basic conspiracy against self-knowledge and awakening in which we collude together to reinforce one another's defenses and insanity.	42	46
27	There are modes of understanding latent within a person which are superior to rational thought.	69	20
28	It is possible for there to be consciousness in which there is awareness but no object of awareness.	73	10
29	Human consciousness is an emergent property of complex neural activity.	59	24
30	Consciousness is the key to personal growth.	77	10
31	There are some truths concerning reality which, in principle, are not amenable to scientific investigation.	51	33
32	Even though we are not yet able to explain mental events in terms of physical processes, an explanation is, in principle, possible.	69	16
33	The harmony of nature reflects the existence of an original creator.	24	48
34	Consciousness transcends time.	53	25
35	Knowledge of people achieved through literature is more profound than any knowledge of people that can be achieved using the scientific method.	21	56
36	Personal consciousness continues after physical death.	27	41
37	There is a universal consciousness of which individual consciousness is but a part.	55	24
38	A process of psychological change is necessary in order to fully experience human consciousness.	65	19

Table 1: Note. Response categories as well as sources for questionnaire items are described in the Appendix.

The bivalent responses were obtained by collapsing the appropriate response categories. For items in Section I, missing and ambiguous responses make up the difference between the two reported percentages and 100%, while in Section II "Don't Know" responses also contribute to that difference.

In addition to describing the actual respondents, inferences can be made about consciousness researchers in general to the extent that this sample is representative of the population of all consciousness researchers. Thus the 95% confidence intervals for agreement with a statement are all contained within a range of 14 percentage points. For example, 19 times out of 20, when sampled, 59% to 73% of consciousness researchers would agree that they have had "an experience which could best be described as a transcendent or mystical experience."

It is, however, more efficient to look at the scores on the scales that make up the questionnaire rather than individual questionnaire items. There is a global **Transcendentalism** scale consisting of all items, which measures a respondent's standing on the material-transcendent dimension, and six subscales, which measure beliefs along specific subdimensions. The six subscales could be characterized in the following ways. **Antiphysicalism** is a measure of the degree to which respondents consider that consciousness and reality are not ultimately physical in nature. **Religiosity** measures traditional religious and spiritual beliefs. **Meaning** is concerned with the importance of existential issues. The purported occurrence of extraordinary experiences is picked up by the **Extraordinary Experiences** scale. **Extraordinary Beliefs** is a measure of the degree to which respondents consider that consciousness and reality are ultimately transcendent in nature. **Inner Growth** is a scale that indicates the importance of personal examination and self-transformation for understanding consciousness and reality. Because high scores on any of the scales is indicative of transcendence, these descriptions have been given for the transcendent direction. They could equally have been given for the material direction were the scoring to be reversed. For example, the Antiphysicalism scale could have been characterized as a Physicalism scale measuring the degree to which respondents consider that consciousness and reality are ultimately physical in nature. The specific items making up each of the scales have been given in Table 2.

TABLE 2
Scale Items and Reliability

Scale	Name	Items	α
APH	Antiphysicalism	–9 –24 –29 –32 34 35 36	.80
REL	Religiosity	1 3 12 20 25 33 36	.81
MEA	Meaning	1 5 –9 12 22 31 33 35	.77
EXE	Extraordinary Experiences	2 4 6 7 8 10 11 13 16 18 –19 37	.89
EXB	Extraordinary Beliefs	10 13 15 16 17 18 21 23 26 27 28 37	.89
ING	Inner Growth	7 11 13 14 15 18 –19 27 30 38	.86
TOT	Transcendentalism	all items as above included once	.95

Table 2: Note. The four point Likert-type items from Section I are scored –3.0, –1.5, 1.5, 3.0 from "Definite No" to "Definite Yes" while the seven point Likert-type items from Section II are scored –3, –2, –1, 0, 1, 2, 3 from "Strongly Disagree" to "Strongly Agree". Items preceded with a minus sign are scored in reverse. Missing and ambiguous responses are assigned a value of 0. Item scores are added to obtain scale scores. Higher scores are indicative of more transcendent beliefs for all scales.

In the instructions for the Beliefs About Consciousness and Reality Questionnaire respondents are asked to "be patient with ambiguous terms or statements and to understand and use them in the way that [they] feel that they should be understood and used." If the resolution of ambiguity were to have been idiosyncratic, no patterns would be found among responses. However, the opposite is the case, in that responses to items making up the scales are strongly related to one another. This can be seen from the high values of Cronbach's α, a standard measure of scale reliability, given in the last column of Table 2. In other words, each scale is reliably measuring an underlying psychological construct inferred from the constellation of its scale items. In particular, the Transcendentalism scale as a whole appears to be measuring the material-transcendent dimension.

Means and standard deviations for the scales have been given in Table 3. As before, confidence intervals can be used to generalize these values to the population of consciousness researchers. Thus the 95% confidence interval for the Transcendentalism scale is 12.8 to 23.9 while the maximum range for the 95% confidence intervals for the subscales is 4.3.

TABLE 3
Comparison of Scale Scores With Standardization Sample

Scale	Name	1986		1996		*F*
		Mean	*SD*	*Mean*	*SD*	
APH	Antiphysicalism	–3.5	9.0	–3.1	8.5	.6
REL	Religiosity	–.6	10.4	1.6	8.8	13.3**
MEA	Meaning	3.6	11.0	5.4	9.1	8.5*
EXE	Extraordinary Experiences	1.6	17.0	9.6	16.0	52.7**
EXB	Extraordinary Beliefs	–2.2	15.1	5.5	14.9	56.7**
ING	Inner Growth	7.5	11.9	12.2	11.4	36.5**
TOT	Transcendentalism	1.2	43.4	18.3	40.7	37.6**

Table 3: Note. For the 1986 sample $n = 334$ whereas $n = 212$ for the 1996 sample. In making comparisons the means of the 1986 standardization sample were considered as constants. Multivariate Analysis of Variance resulted in $F(7, 205) = 24.2$, $p < .0005$. Univariate F-tests had (1, 211) degrees of freedom. Note that * denotes a level of significance of $p < .005$ while ** denotes a level of significance of $p < .0005$. The values for the 1986 sample have been taken from Barušs and Moore (1992).

Scale scores are most useful for making comparisons between different groups or subgroups within the same sample. Average scores for all the scales except Antiphysicalism are significantly higher than those in the 1986 survey as indicated in Table 3. For instance, while the average Transcendentalism score for 1986 was 1.2, it is 18.3 for 1996. Differences between subgroups of the sample have been given in Table 4. Thus, those interested in neural correlates tend to score lower on all scales than those who are not, while those interested in phenomenology and culture score higher on all scales than those who have not indicated such an interest. Women score higher than men on most scales including Transcendentalism and those with traditional or their own religious beliefs score higher on all scales than those who have no religious affiliation. Those who maintained that they had carefully examined their fundamental beliefs about reality were more likely to score higher on all scales except Extraordinary Beliefs than those who said that they had not examined them or had not given them much thought. There are some additional differences between subgroups on some of the scales.

TABLE 4
Group Differences for Scale Scores

Variable	Description	MANOVA		ANOVA		Kruskal-Wallis *H*		Direc-tion
		variances	*p*	scales	*p*	scales	*p*	
INT 1	philosophy	ok	*ns*		*ns*		*ns*	
INT 2	cognitive /psychology		*ns*		*ns*		*ns*	
INT 3	neural correlates		.001	ALL	.05	ALL	.05	low
INT 4	physics /mathematics		.05	APH	.05	APH	.01	high
				REL	.05			
INT 5	phenomenology /culture		.0005	ALL	.0005	ALL	.0005	high
PRES	presenter	ok	*ns*		*ns*		*ns*	
EDUCB	education: doctorate	ok	*ns*		*ns*		*ns*	
DIS 1	applied sciences		*ns*	EXE	.05	EXE	.05	low
				ING	.05	ING	.05	
DIS 2	natural sciences	ok	*ns*		*ns*		*ns*	
DIS 3	health sciences		*ns*	ING	.05	ING	.05	high
DIS 4	social sciences		*ns*		*ns*		*ns*	
DIS 5	philosophy		.05	EXB	.05		*ns*	low
DIS 6	arts & humanities		*ns*		*ns*		*ns*	
AGEB	age greater than mean	ok	.05	REL	.05	REL	.05	high
				MEA	.05	MEA	.05	
SEX	sex: female		.001	ALL but REL	.05	ALL but ING	.05	high
RELAF	religious affiliation		.0005	ALL	.001	ALL	.0001	high*
BELB	examined beliefs		.05	ALL but EXB	.05	ALL but EXB	.05	high

*Kruskal-Wallis *H* tests reveal that scores on all scales are higher for traditional than no religious affiliation at $p < .01$, that scores on all scales are higher for own beliefs than for no religious affiliation at $p < .00005$, and that scores on the Extraordinary Experiences scale are higher for those with their own religious beliefs than those with traditional religious affiliation at $p < .05$.

Table 4: Note 1. As judged by inspection of detrended normal plots and stem-and-leaf displays, there were some deviations from normality of the distributions of scale scores. While multivariate analysis of variance appears to be robust to departures from normality (Weinfurt, 1995), sphericity tests, such as Box's *M*, are highly sensitive to such violations (Norušis, 1985; Weinfurt, 1995). Hence it is not clear to what extent the validity of multivariate analysis of variance has been affected. To circumvent violations of normality and homogeneity of variances assumptions, analyses were repeated using nonparametric Kruskal-Wallis *H* tests. Thus the results of Kruskal-Wallis one-way analyses of variance have been presented alongside the results of parametric multivariate and univariate analyses of variance. The letters "ok" have been used in the column under MANOVA labelled "variances" when there were no violations of homogeneity of variances assumptions. In the end it really makes little difference whether parametric or nonparametric tests are used since the results are essentially the same.

Note 2. Both for the main area of interest at the conference and disciplinary affiliation, each response category was considered as a bivalent variable. Other variables were turned into bivalent variables. Thus, the high score was given to those with a doctorate for EDUCB, to those over the mean age for AGEB, and to those who had examined their beliefs for BELB. Religious affiliation was left as a trivalent variable RELAF with the asterisked note above indicating the differences between the three factor levels "none", "traditional" and "own beliefs".

From both Table 4 and Table 5 it is apparent that there are age correlations. Those who are older tend to score higher on all scales except Antiphysicalism and Extraordinary Experiences.

TABLE 5
Age Correlations

	APH	REL	MEA	EXE	EXB	ING	TOT
AGE	.07	.18**	.17*	.09	.16*	.18**	.14*

Table 5: Note. In this table * denotes a level of significance of $p < .05$ while ** denotes a level of significance of $p < .01$ using two-tailed t-tests.

Finally, in order to assess the relative importance of respondents' characteristics for differences in beliefs about consciousness and reality, analyses were carried out to determine the ability of the general information requested on the first page of the survey to predict a person's position along the material-transcendent dimension. As given in Table 6, religious affiliation is the best predictor of Transcendentalism scores, followed by interest in phenomenology and culture, lack of interest in neural correlates and a respondent's age, in that order. Together, these four variables account for 36% of the variation in scores on the Transcendentalism scale.

TABLE 6
Multiple Linear Regression Analysis

Step	Variable	Description	Adjusted R^2	Partial Correlation
1	RELAF	religious affiliation	.2196	.4727
2	INT 5	interest in phenomenology/culture	.3210	.3665
3	INT 3	interest in neural correlates	.3491	–.2147
4	AGE	age	.3610	.1526

Table 6: Note. Multiple linear regression analysis was done using TOT as the dependent variable and all the variables concerning general information about respondents as independent variables. Religious affiliation was entered as a linearly ordered variable by scoring 1 for "none", 2 for "traditional", and 3 for "own beliefs". Forward selection was used with a probability of *F-to-enter* of .05 for partial correlations of independent variables not in the equation with the dependent variable, adjusted for the independent variables in the equation. The partial correlations used in the selection process were those given in the table. Inspection of studentized residuals and the cumulative probability plot of observed to expected residuals as well as values of adjusted R^2 indicate good fit of the multiple regression model.

Discussion

Since the primary purpose of this project was to provide feedback to consciousness researchers concerning their beliefs about consciousness and reality, the focus of attention of this paper lies in the information provided in the tables. Nonetheless, a number of comments may be of interest to readers.

Because no data were available concerning nonrespondents and consciousness researchers who were not at the conference, it is difficult to know to what extent the sample of actual respondents was representative of all consciousness researchers. It is possible that the elevated scale scores for respondents at Tucson II relative to the normative sample could be attributed to sampling bias. However, since the 1986 sample was largely made up of academics and professionals judged on the basis of their disciplinary affiliations to have a *possible* interest in consciousness while the 1996 sample was made up of academics and professionals with a *known* interest in consciousness as evidenced by their attendance at Tucson II, the 1996 sample is probably more representative than the 1986 group of respondents.

Elevated scale scores are reflected in increased frequencies for response categories on individual items that contribute to higher transcendentalism scores. For the standardization sample, 47% of respondents agreed that they had had an experience that could "best be described as a transcendent or mystical experience" which was somewhat higher than figures for the incidence of endorsement of similar statements on other surveys. The figure for Tucson II respondents, however, was

significantly higher at 66%. Similarly, while only 12% of respondents in 1986 agreed that "reincarnation actually does occur", that proportion increased to 23% in 1996. Belief in the possibility of extrasensory perception rose from 52% to 67%. Statements with frequencies that did not increase in the transcendent direction included "personal consciousness continues after physical death" with 26% in 1986 and 27% in 1996, and "there is no reality other than the physical universe" with 25% agreement in 1986 and 24% in 1996. The 1986 figures for all of the questionnaire items have been given in Barušs (1990).

It is also possible that beliefs about consciousness and reality have changed in the ten years from the 1986 to the 1996 survey. With the average ages of respondents at 44 and 50 years respectively for the two samples, this change could be attributed in part to the presence of a more recent cohort at Tucson II and in part to the effects of variables correlated with age. In other words, it may be that beliefs about consciousness and reality of a younger generation are more transcendent as are those of members of the population who are older.

The correlation of age with higher transcendentalism scores is perhaps not surprising. What is surprising is that this correlation does not carry through for the Extraordinary Experiences scale. In fact, the opposite effect was found for the 1986 sample, namely, that higher scores were associated with being younger. It would seem reasonable that the older one is, the more likely it is that one has had an opportunity to have had, for example, a near-death experience. Such experiences are known to increase the likelihood of a person believing in the continuation of personal consciousness after death (Barušs, 1996) and hence should inflate the Extraordinary Experiences scores for those who are older. Because one's educational level is correlated with age, it may be that those who feel that they have had unusual experiences have been screened out by the educational system or that those who are older have learned to make mundane attributions for experiences that would otherwise be identified as transcendent. In the absence of additional data it does not seem to be fruitful to speculate further about these age effects or the differences between the 1986 and 1996 samples.

Strong sex differences were found in the 1986 study. Both for some of the scales and individual items women tended to score in the transcendent direction. However, these effects were confounded by age, level of education, and disciplinary affiliation (Barušs, 1990). Strong sex differences were again found for the participants at Tucson II, this time without the age and educational confounds, although women were more likely to be associated with the arts and humanities than men. It may be that there is something about women's understanding of consciousness and reality that is different from that of men's. It is also interesting to note that, while there are no significant differences on any of the scale scores between those who presented and those who did not present at the conference, women were less likely than men to be presenters. This suggests that there may be ways of understanding consciousness that are underrepresented at scientific meetings. Clearly these sex differences demand adequate independent study.

Heuristic examination of individual items reveals an interesting splitting of respondents into thirds. Approximately two-thirds believe that they have had a transcendent or mystical experience, that extrasensory perception is possible and that "there are modes of understanding latent within a person

which are superior to rational thought." However, approximately two-thirds also agree that "human consciousness would not exist without the brain" and that mental events could in principle be explained in terms of physical processes. Similarly, approximately one-third claim to have had an out-of-body experience, and maintain that "the concept of limits does not apply to consciousness" and that "physical reality is an extension of mental reality"; while approximately one-third have not had any experiences that cannot be explained by science, disagree with the statement that "there are some truths concerning reality which, in principle, are not amenable to scientific investigation" and do not think that "personal consciousness continues after physical death". There appears to be a tripartite division: one third of respondents tends to believe that the world is a physical place, that science is the proper way in which to go about knowing it and that strange things do not happen; a second third believes that strange things happen but could in principle be explained in physical terms; while the final third believes not only that strange things happen but that consciousness is ontologically primitive. While not rigorous, this breakdown is consistent with the categories of materialist, conservatively transcendent and extraordinarily transcendent tendencies identified for the 1986 sample (Barušs, 1990).

This organization of the disparity of beliefs about consciousness and reality has implications for a speaker when addressing her audience. For example, one does not have to argue for introspection given that 93% of listeners believe that "introspection is a necessary element in the investigation of consciousness" while one would have to present arguments against it should one wish to convince readers of the received view (Lyons, 1986). However, because of the tripartite division of listeners at a meeting such as Tucson II, one is never speaking just to those who share one's beliefs, be they materialists or transcendentalists. Naive efforts to convert others to one's views through rational discourse and the presentation of evidence are unlikely to be successful given the resilience of fundamental beliefs (Barušs, 1996). Thus, ways of discourse need to be found that enhance communication with listeners along the material-transcendent spectrum.

Identifying the material-transcendent dimension underlying beliefs about consciousness and reality is just a first step in understanding the turbulent dynamics in the field of consciousness studies. There is much more that could be done. While the constructive validity and confirmation of the reliability of the scales underlying the Beliefs About Consciousness and Reality Questionnaire ensure its utility for continued research, there are other instruments such as the Mathew Materialism-Spiritualism Scale (Mathew, Mathew, Wilson & Georgi, 1995) that could be used to bring to light additional features of the dynamics of consciousness studies. The material-transcendent dimension as such needs to be better understood. More generally, it would be helpful to know if there are personality characteristics or patterns of thinking that are correlated with different ways of understanding consciousness. In particular, how are absorption, integrative complexity and the big five personality factors related to beliefs about consciousness and reality? One would also like to know the conditions under which ideas about consciousness change and what helps understanding to become more comprehensive and insightful. Certainly the role of purported unusual experiences such as mystical experiences needs to be examined more carefully. Then, perhaps at some point it may be possible to characterize the field of consciousness studies adequately to effect a minimum level of integration.

APPENDIX
Survey Instrument

General Information (Page 1)

Main area of interest at this conference: ☐ philosophy ☐ cognitive science
☐ neural correlates ☐ physics/mathematics ☐ phenomenology/culture

☐ **Presenter at this conference** ☐ **Not a presenter at this conference**

Highest level of education: ☐ no university education ☐ some university education
☐ bachelor's degree or equivalent ☐ master's degree or equivalent ☐ doctorate

Disciplinary affiliation: *(please indicate one only)*
☐ applied sciences ☐ natural sciences ☐ health sciences
☐ social sciences ☐ philosophy ☐ arts & humanities

Age: _____ **Sex**: ☐ male ☐ female

Religious affiliation: ☐ none ☐ traditional ☐ own beliefs

Please indicate which of the following three statements best applies to you:

☐ I feel that I have carefully examined my fundamental beliefs about reality.

☐ I am aware of my fundamental beliefs about reality but have not found it necessary to examine them.

☐ I have not really given much thought to my fundamental beliefs about reality.

Beliefs About Consciousness and Reality Questionnaire (Pages 2–4)

The Beliefs About Consciousness and Reality Questionnaire has been taken from a longer Consciousness Questionnaire described in Barušs (1990). Items for the Beliefs About Consciousness and Reality Questionnaire are given in Table 1.

Sources for Items from Beliefs About Consciousness and Reality Questionnaire

Item 1: Item 4 from Life Attitude Profile (LAP)–Form 5 by Reker & Peacock (1981).
Item 3: Reworded Item 8 from Intrinsic/Extrinsic Scale of religious orientation (Feagin, 1964).
Item 5: Reworded Item 7 from Life Attitude Profile (LAP)–Form 5 by Reker and Peacock (1981).
Item 7: Reworded Item 20 from Intrinsic/Extrinsic Scale of religious orientation (Feagin, 1964).
Item 11: Reworded from pages 54–55 of Walsh (1984).
Item 26: Reworded from page 58 of Walsh (1984).
Item 33: Reworded Item 43 from Values Survey by Krasner & Houts (1984).
Item 34: Quotation (essentially) from page 470 of Globus & Franklin (1980).

Item 35: Reworded Item 49 from Epistemological Style Questionnaire by Krasner & Houts (1984). *Sources for all other items have been discussed in Barušs (1990).*

Response Categories for Items from Beliefs About Consciousness and Reality Questionnaire

Response categories for items from Section I consist of "Definite No", "Qualified No", "Qualified Yes" and "Definite Yes" while response categories for items from Section II consist of "Strongly Disagree", "Disagree", "Moderately Disagree", "Don't Know", "Moderately Agree", "Agree" and "Strongly Agree".

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