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RESEARCH NOTE

People who report anomalous information reception have higher dissociation symptom scores [version 1; peer review: 1 not approved]

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Abstract

Background: Dissociative states exist on a continuum from nonpathological expressions, such as highway hypnosis and day-dreaming, to pathological states of derealization and depersonalization. Claims of anomalous information reception (AIR) are often dismissed as symptoms of dissociation disorder, despite other studies that show otherwise. This study examined the relationship of dissociation symptoms and AIR in a large convenience sample (n= 3,984).

Methods: These secondary analyses of cross-sectional survey data were examined. The survey included demographics, the Dissociation Experience Scale Taxon, and AIR data. Summary statistics and linear and logistic regressions evaluated dissociation variables and AIR endorsement relationships with and without covariates.

Results: 3023 respondents with complete data were included. Participants were mostly middle aged (51 years $\pm$ 16; range 17-96), female (70%), Caucasian (85%), college educated (88%), had an annual income over \$50,000 (55%), were raised Christian (71%), and now affiliated as Spiritual but not Religious (60%). AIR ability was endorsed by 42% of participants, with their first experience starting in childhood (81%), and 53% having family members with similar experiences. The mean dissociation score was 14.4 ± 17.3 (range 0-100) for all participants and was significantly higher for AIR claimants (18.2 ± 19.3), as compared to non-claimants (11.8 ± 15.2 ; $t = -10.3$, $p < 0.000$). In total, 11% of AIR non-endorsers and 22% of AIR endorsers had a cut-off score greater than 30 ($\chi^2 = 63.0$, $p < 0.000$).

Conclusions: Both AIR claimants and non-claimants scored lower than the clinical cutoff for dissociation, with the claimants having significantly higher scores. Future studies comparing AIR claimants versus non-claimants may benefit by incorporating comprehensive

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Approval Status

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version 3 (revision) 04 Jan 2018			view
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version 1 10 Aug 2017	view		

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3. **Adrian Parker**, Lund University, Lund, Sweden

Any reports and responses or comments on the article can be found at the end of the article.

dissociation symptom measurement, as well as their effects on the person's functionality, to discern the pathological versus non-pathological nature of purported AIR experiences.

Keywords

Dissociation, Anomalous information reception

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Introduction

Dissociation is conceptualized as the disruption to usually integrated functions of consciousness, memory, identity or perception of the environment¹. Dissociative Identity Disorder is defined as a personality disorder, when two or more distinct identities or personalities are present, each with its own pattern of perceiving, relating to and thinking about the environment and self. The core clinical symptoms of dissociative disorders include amnesia, depersonalization, derealization, identity confusion and identity alteration. Dissociative states are prevalent in other psychiatric disorders, such as PTSD^{2,3}, and are more prevalent in younger non-clinical populations³. Dissociative states exist on a continuum⁴⁻⁶, from nonpathological expressions, such as highway hypnosis and day-dreaming, to pathological states of derealization (surrealness), and depersonalization (absence of identity)⁷. Almost half of United States adults have experienced a dissociative episode in their lives³.

A widespread belief possibly related to dissociation is the idea that it is possible to communicate with deceased individuals; people who report such experiences are called “mediums”⁸. A survey of 18,607 people in thirteen European countries found that 25% reported contact with the dead⁹. Some empirical literature suggests that in some cases the information obtained is accurate even under double-blind conditions¹⁰⁻¹³. Claims of such abilities are often considered to be symptoms of dissociation disorders^{5,14,15}, despite the fact that pathological dissociation studies have not systematically indicated increased prevalence in people who maintain these claims compared to control groups or the general population^{16,17}.

This study’s aim was to examine the relationship between self-report dissociation symptoms and anomalous information reception (AIR) about deceased humans in a large convenience sample of surveyed adults. We hypothesized that the prevalence of pathological dissociative symptoms in people who claim these purported abilities would be the same as in those who do not maintain such claims.

Methods

These analyses were performed on data collected during a larger research study approved by the Institute of Noetic Sciences (IONS) Institutional Review Board (approval number, wahn_2016_01). A survey was administered through SurveyMonkey.com with HIPAA compliant methods. Participants were recruited through the IONS Facebook page, IONS mailing lists, including the IONS membership list, and the IONS community networks.

The survey ([Supplementary File 1](#)) began with the study’s purpose and informed consent details. Date and country of birth, race, education, and childhood and current spiritual/religious affiliation and education were collected. Gender was collected on a subsample of participants. Participants indicated if they had experienced AIR or “mediumship,” defined as the “ability to mediate communication between spirits of the dead and the living or the empathic ability

to feel the presence and energies of spirits,” age of onset (if applicable), and family history of AIR.

Measure

The Dissociation Experiences Scale Taxon (DES-T)¹⁸ distinguishes pathological dissociation with a cutoff score of 30, which captures 87% positive predictive value (Cronbach Alpha of 0.75)^{19,20}. Respondents select a percent frequency for eight dissociative symptoms. The DES-T results in two variables: a continuous variable calculated from the mean of the eight items; and a binary variable based on the >30 cutoff score¹⁸.

Statistical analysis

Categorical variable percentages were calculated and presented qualitatively. Means, standard deviations and ranges of continuous variables were calculated. Covariates included gender, age, race, education, income, childhood spirituality and current spirituality, family history, and age of the claimed ability onset. Missing values were randomly distributed except for gender. T-test and chi-square tests evaluated relationships among the demographic variables. Linear and logistic regressions evaluated dissociation variables and AIR endorsement relationships. Statistics were performed with Stata 12.0.

Results

In total, 3984 participants took the survey from May 4, 2016 to June 7, 2017. Participants were not required to complete all fields and thus only data from 3023 participants who answered the “AIR” question (question 49 of the survey) and completed the DES-T (question 75) were included. Most participants were from the United States (62.6%) followed by the United Kingdom (7.7%) and then Canada (6.3%), and the remaining participants represented thirteen other countries. Participants were mostly middle aged (51 years $\pm$ 16; range 17–96), female (70%), Caucasian (85%), college educated (88%), had an annual income over \$50,000 (55%), were raised Christian (71%), and now affiliated as Spiritual but not Religious (60%; [Table 1](#)). Gender, race and current spiritual/religious affiliation were different between people who did and did not endorse AIR.

AIR ability was endorsed by 42% of participants, with their first experience starting in childhood (81%), and 53% having family members with similar experiences. The mean DES-T score was 14.4 ± 17.3 (range 0–100) for all participants and was significantly higher for AIR claimants (18.2 ± 19.3) as compared to non-claimants (11.8 ± 15.2 ; $t = -10.3$, $p < 0.000$; [Table 2](#)). A DES-T continuous variable linear regression model including all covariates found only race and education to be significant. Repeating the model with these covariates resulted in a highly significant DES-T difference between groups ($F(3, 2947) = 73.2$, $p < 0.0000$). For the DES-T binary cutoff score, 11% of AIR non-endorsers and 22% of AIR endorsers had a cut-off score greater than 30 ($X^2 = 63.0$, $p < 0.000$). These values are significantly different with education (> college) and income (>\$50,000) as covariates in a logistic regression (LR $X^2 = 99.12$, $p < 0.0000$).

Table 1. Demographic variables for participants by purported ability for anomalous information reception about deceased humans. Mean $\pm$ standard deviation; t , Student's two-sample t-test statistic; X^2 , chi-square statistic; p , probability.

	Anomalous information reception			t/X^2	p
	Yes (N=1257)	No (N=1766)	N		
Age, years Range	51.7 $\pm$ 14.3 17-96	51.4 $\pm$ 16.4 17-89	2751	-0.4	0.68
Gender (% female)	80	67	519	5.90	0.01
Race (% Caucasian)	87	84	2970	4.76	0.03
Education (% $\geq$ some college)	87	89	2977	1.66	0.20
Income (% $\geq$ \$50,000 annual income)	39	36	2768	2.32	0.13
Childhood spiritual/religious affiliation (% Christian)	72	71	2986	0.40	0.51
Current spiritual/religious affiliation (% spiritual but not religious)	66	56	2991	29.60	0.00

Table 2. The eight item and total means, standard deviations, and mean difference sorted by highest mean percentage by anomalous information reception. Data are presented as the mean $\pm$ standard deviation. DES-T, Dissociation Experiences Scale Taxon; t - Student's two-sample t-test statistic; p , probability.

DES-T Item	Anomalous information reception		Mean difference	t	p
	Yes (n=1257)	No (n=1766)			
5. Some people sometimes have the experience of feeling that other people, objects, and the world around them are not real.	25.8 $\pm$ 32.0	17.5 $\pm$ 26.7	8.3	-7.1	0.0000
8. Some people sometimes find that they hear voices inside their head which tell them to do things or comment on things that they are doing.	25.5 $\pm$ 33.5	13.7 $\pm$ 25.7	11.8	-4.9	0.0000
3. Some people sometimes have the experience of feeling as though they are standing next to themselves or watching themselves do something and they actually see themselves as though they were looking at another person.	22.2 $\pm$ 29.8	12.9 $\pm$ 22.9	9.3	-9.7	0.0000
7. Some people find that in one situation they may act so differently compared to another situation that they feel almost as if they were two different people.	21.5 $\pm$ 30.6	17.6 $\pm$ 28.2	3.9	-4.0	0.0001
6. Some people sometimes have the experience of feeling that their body does not seem to belong to them.	20.6 $\pm$ 30.0	13.4 $\pm$ 24.5	7.2	-7.7	0.0000
1. Some people have the experience of finding themselves in a place and having no idea how they got there.	13.0 $\pm$ 23.3	7.8 $\pm$ 17.2	5.2	-7.2	0.0000
2. Some people have the experience of finding new things among their belongings that they do not remember buying.	10.4 $\pm$ 21.5	6.9 $\pm$ 17.4	3.5	-3.6	0.0003
4. Some people are told that they sometimes do not recognize friends or family members.	6.6 $\pm$ 17.7	4.3 $\pm$ 14.3	2.3	-11	0.0000
Total	18.2 $\pm$ 19.3	11.8 $\pm$ 15.2	6.4	10.3	0.0000

Dataset 1. Dissociation symptoms for those with and without self-report anomalous information reception

<http://dx.doi.org/10.5256/f1000research.12019.d171352>

DT# are the Dissociation Experience Scale Taxon items.

Discussion

In total, 42% of participants endorsed AIR experiences in this convenience sample, similar to other prevalence belief studies^{9,21,22}. The overall dissociation mean score for AIR respondents fell below the clinical cutoff for pathological dissociation despite being higher than and different to non-endorser scores. Much debate exists for the use of cutoff scores^{18,23}. Notably, the top five endorsed DES-T items were consistent with an AIR experience. Also, our total samples grand mean DES-T score was higher than observed in random general population samples¹⁹. This likely reflects the convenience sampling method for this survey, which reduces the generality of these findings. This outcome also does not clarify if AIR endorsers with high DES-T scores have the five core clinical symptoms of dissociation. Future studies comparing AIR claimants versus non-claimants may benefit by incorporating

comprehensive dissociation symptom measurement, as well as their effects on the person's functionality.

Data availability

Dataset 1: Dissociation symptoms for those with and without self-report anomalous information reception. DT# are the Dissociation Experience Scale Taxon items. doi, [10.5256/f1000research.12019.d171352](https://doi.org/10.5256/f1000research.12019.d171352)²⁴

Competing interests

No competing interests were disclosed.

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Supplementary material

Supplementary File 1: Survey on genetics of psychic ability.

[Click here to access the data.](#)

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[Data Source](#)

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Etzel Cardeña

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This paper is a good example of why the F1000Research model is so bad... The manuscript is poorly written, does not show a good grasp of the relevant literature or that a good literature search was conducted, misrepresents some of its references, and very probably has an important mistake in a Table or its analyses. All of these issues could have been solved during the regular peer review process so that at the end the only publicly available version would have been an adequate one.

Although it is a short paper, it would take me too long to list all of the problems in it, so I will just mention 2-3 examples per problematic issue:

1. Poor writing:

From the abstract: a) "symptoms of [a] dissociation [dissociative] disorder". b) "Both AIR claimants and non-claimants scored lower than the clinical cutoff" [despite the previous sentence in the abstract mentioning that percentages of both groups had scored above the cutoff. c) "incorporating [a] comprehensive dissociative symptom measurement, as well as their effects on the person's functionality" [grammatical number is inconsistent, besides the fact that "measurement[s]" would not have an effect on functionality.

2. Inadequate coverage of the literature:

a) There have been various recent studies specifically evaluating possible psychopathology in people reporting anomalous experiences (in general) and spirit possession/mediumship (in particular), yet only very few are listed in the Reference section. b) Contrary to what the authors write that "Claims of such abilities are often considered to be symptoms of dissociation [dissociative] disorders", yet both the anthropological literature and, more relevant in this case, the Diagnostic and Statistical Manual taxonomy, ever since its 4th edition, has specifically required that clinically significant levels of distress or dysfunction be present to consider a dissociative manifestation pathological.

3. Misrepresentations of cited literature:

a) A paper by Rebecca Seligman is used to support the above quotation that mediumship abilities are often considered to be symptoms of dissociation, yet she specifically states that "dissociation is not a pathological experience, but rather a therapeutic mechanism", along the lines of what others in anthropology and psychology have written. b) "Almost half of United States adults...", yet this study was conducted in Winnipeg, Canada.

4. Statistical issues:

a) In Table 1, a 3% difference (87 vs 84%) is reported as significant at the minus .05 level, yet an almost identical difference with about the same number of participants (87 vs 89%) is reported as non-significant. I very much doubt that both statements, particularly the first one, are accurate. b) There are multiple references to probability values = 0 or less than 0, but of course it goes against inferential statistics to state that instead of, for example, less than .001, or whatever.

Is the work clearly and accurately presented and does it cite the current literature?

No

Is the study design appropriate and is the work technically sound?

Partly

Are sufficient details of methods and analysis provided to allow replication by others?

No

If applicable, is the statistical analysis and its interpretation appropriate?

No

Are all the source data underlying the results available to ensure full reproducibility?

Yes

Are the conclusions drawn adequately supported by the results?

No

Competing Interests: No competing interests were disclosed.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to state that I do not consider it to be of an acceptable scientific standard, for reasons outlined above.

Author Response 10 Oct 2017

Helané Wahbeh

Response to Reviewer #1

"This paper is a good example.....so that at the end the only publicly available version would have been an adequate one."

-Thank you for you taking the time to review our paper and for your thoughtful comments. Yes,

we agree that through the traditional peer-review process, the final public version is superior to initial versions. We appreciate the transparent nature of F1000 review process as a way to reduce bias in publishing.

"Poor writing"

-Thank you for highlighting writing errors in our manuscripts. We have corrected the highlighted grammatical errors and unclear wording. We have also reviewed the entire paper for other writing errors.

"Inadequate coverage of the literature"

-We agree that the paper does not fully examine the literature related to this topic. The reason for this is the word count limits of a short article (1000 words). We have included additional references and attempted to succinctly include a broader understanding of the current literature.

"Misrepresentations of cited literature"

a) A paper by Rebecca Seligman

- Rebecca Seligman also states "Medical approaches to the question have implicated psychological disturbance as a motivational factor for some, yet they fail to explain how and why some psychological disturbances, in some individuals, come to be expressed as spirit-possession mediumship." She also has a very nice discussion in the section "MEDIUMSHIP AND MENTAL ILLNESS REVISITED" on mediumship being considered a pathology. Because of the word limitations, we did not highlight the specific sections of her paper that refer to these issues but allow the reader to read the paper to appreciate the full scope of the discussion of mediumship and mental illness.

b) "Almost half of United States adults...", yet this study was conducted in Winnipeg, Canada.

-This reference has been corrected.

"Statistical issues"

a) In Table 1, a 3% difference (87 vs 84%) I very much doubt that both statements, - particularly the first one, are accurate."

-These statistics have been double checked and they are accurately represented. We have also included a conservative Bonferroni multiple comparisons correction.

b) There are multiple references to probability values = 0 or less than 0, but of course it goes against inferential statistics to state that instead of, for example, less than .001, or whatever.

-The p statistic reporting has been corrected.

Competing Interests: We have no competing interests to disclose

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