

Free will and determinism as a function of schizotypy and religiosity

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Introduction

Magical beliefs and experiences are part of the schizotypy concept. Religiosity too involves magical beliefs and experiences. In the case of schizotypy, experiences are personal, non-institutionalized and mostly non-intentional. In the case of religiosity, experiences are part of the cultural inheritance, to a big part institutionalized, and for various occasions intentional.

Assumption: free will may play a minor role and determinism a major role in schizotypy with the opposite relationship being true for religiosity.

Methods

Participants

- 95 women and 39 men (n=134), mean age (in years) 20.99 (SD=1.94, range 18 - 30).
- 57 declared themselves as believers (of any kind of religion that involves the existence of a god)
- 77 non-believers (including atheists and agnostics).

Psychometric measures

Schizotypy (O-LIFE): Self-reporting questionnaire measuring Cognitive Disorganization (CogDis), Unusual Experiences (UnExp), Impulsive non-conformity (ImpNon and Introvertive Anhedonia (IntAn))¹

Examples:

CogDis: Are you easily distracted when you read or talk to someone?

UnExp: When in the dark do you often see shapes and forms even though there is nothing there?

IntAn: Do you feel that making new friends isn't worth the energy it takes?

ImpNon: do you at times have an urge to do something harmful or shocking?

Religious beliefs: Self-created to test for research question asking several details on i) beliefs in supernatural entity, ii) individual religious behaviors, i.e. praying, iii) social oriented religious practice, i.e. going to the church.

Free will beliefs (FAD-plus² and Free Will and Determinism Scale³): FAD-plus in experiment 1 and FWD in experiments 2 & 3.

Examples:

FAD-plus: people have complete control over the decisions they make.

FWD: I have free will even when my choices are limited by external circumstances.

Deterministic beliefs (FAD-plus determinist subscale in all three experiments.

Example: your genes determine your future.

Results

Group comparisons

ANOVA on UnExp showed sex difference for UnExp, $F(1, 132)=5.60, p=.019$, women $\mu=3.76 >$ men $\mu=2.64$.

ANOVA on ImpNon showed an effect of belief group ($F(1,132)=4.307, p=.04$, non-believers $\mu=3.29 >$ believers $\mu=2.57$).

The ANOVA on deterministic belief showed an effect of belief group ($F(1, 132)=5.649, p=.019$, non-believers $\mu=3.88 >$ believers $\mu=3.55$), contrary to free will beliefs ($F(1, 132)=.870, p=.353$).

N=134	UnExp		DetBelief	
	Male	Female	NonBeliever	Believer
group	2,64	3,76	3.88	3.55
Means	1,84	2,70	0.82	0.76
SD				
N=134	ImpNon		FW beliefs	
	NonBeliever	Believer	NonBeliever	Believer
group	3.30	2.58	5.00	5.16
Means	2.03	1.93	1.11	0.88
SD				

Partial correlations

(with belief in god and sex as control variables) showed that **belief in determinism correlate negatively with IntAn scores** ($r=-.191, p=.028$), see figure below.

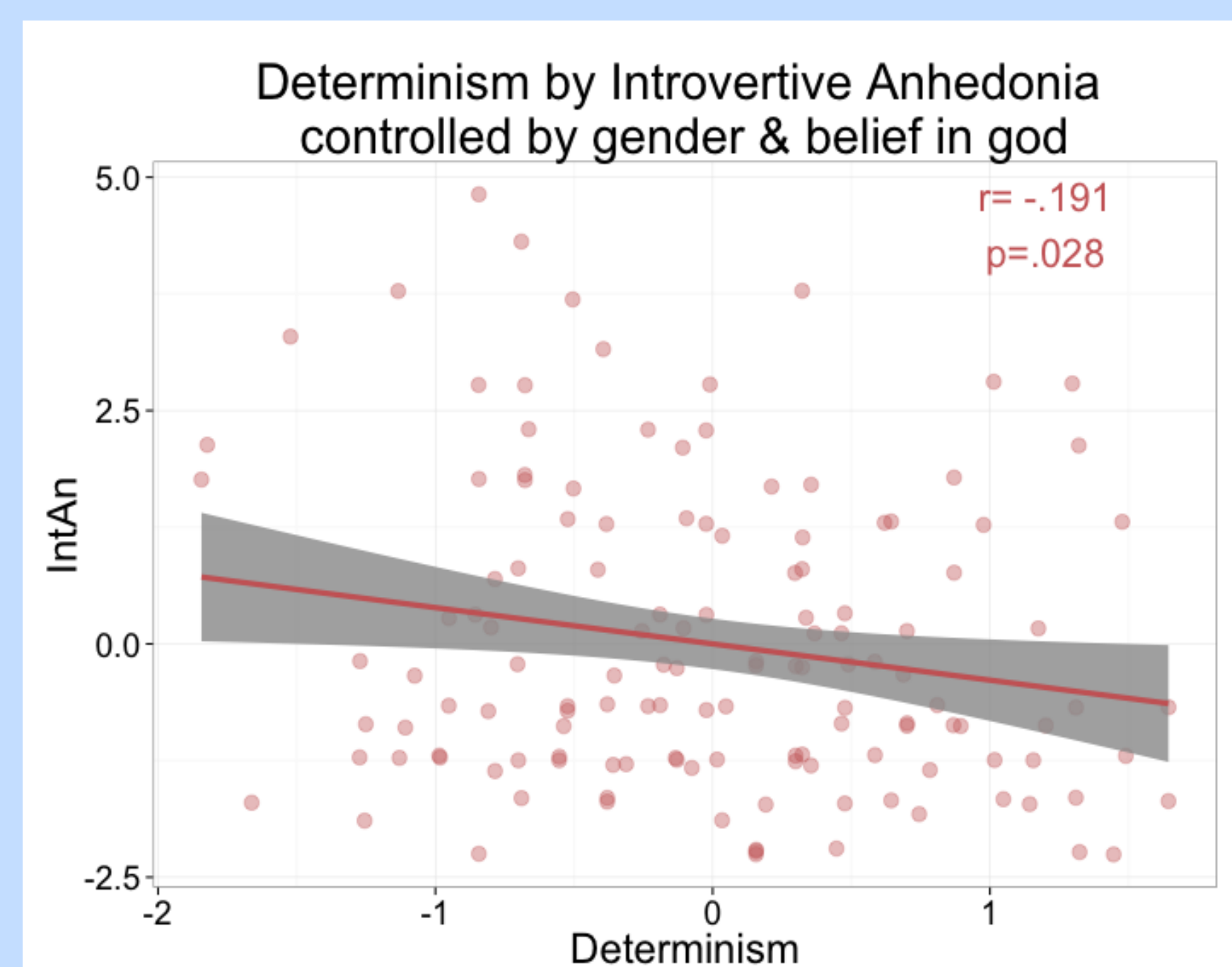


Figure 1: partial correlations between IntAn and determinism belief (belief in god and gender controlled)

Believers vs non-believers (in god)

Spearman's rho analysis on separate groups between believers and non believers showed **a negative correlation between deterministic beliefs and 3 of the schizotypal subscales for non-believers only**, respectively (see Figure 2A, B, C):

A) impulsive non-conformity ($rs[134]=-0.299, p=.008$, vs $rs[134]=.085, p=.528$),

B) unusual experience ($rs[134]=-0.255, p=.025$, vs $rs[134]=.120, p=.374$)

C) cognitive disorganisation ($rs[134]=-0.229, p=.045$, vs $rs[134]=-0.096, p=.479$).

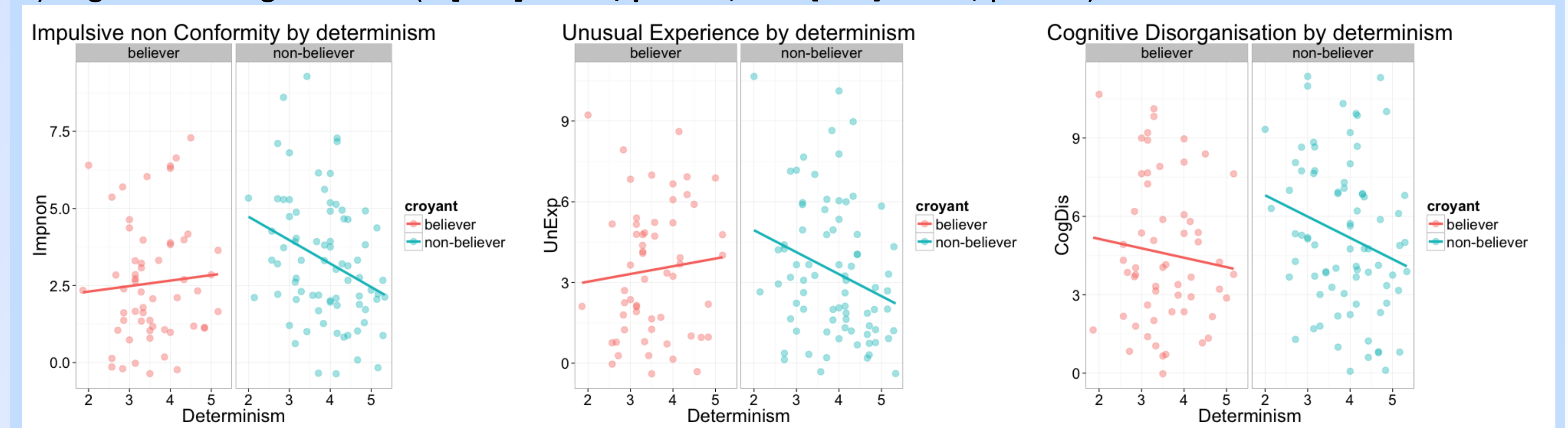


Figure 2: Scatterplots between determinism scores and the O-LIFE subscale scores (A: ImpNon, B: UnExp, C: CogDis) for believers and non-believers separately.

Discussion

Our results indicate:

1) Free Will beliefs are unrelated to schizotypy, religiosity and deterministic beliefs, respectively.

2) Enhanced deterministic beliefs associate with lower IntAn across all participants, and to reduced ImpNon, UnExp, and CogDis in non-believers only.

These results show **that free will beliefs are unrelated to deterministic beliefs** contrary to the usual philosophical assumption. Moreover, **enhanced deterministic beliefs relate to lower schizotypy scores**, thought to be beneficial when taking a psychiatric high-risk approach. Deterministic thinking might thus associate to mental health in particular when being a non-believer. Potentially, believers understand the concept of determinism very differently, because they are likely to have different world views, or the relationships did not emerge in believers because their overall score range is lower.

Future studies on free will and determinism should account for the possibility that leaving religious belief unaccounted for adds serious noise to the data.

References

¹Mason O, Linney Y, Claridge G. (2005) Short scales for measuring schizotypy. Schizophr Res; 78: 293-6.

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³Rakos, R. F., Laurene, K. R., Skala, S., & Slane, S. (2008). Belief in free will: Measurement and conceptualization innovations. Behavior and Social Issues, 17,20-39.