



**QUEEN'S
UNIVERSITY
BELFAST**

CREDs, CRUDs, and Catholic Scandals Experimentally examining the effects of religious paragon behaviour on co-religionist belief

Turpin, H., Andersen, M., & Lanman, J. A. (2019). CREDs, CRUDs, and Catholic Scandals Experimentally examining the effects of religious paragon behaviour on co-religionist belief. *Religion, Brain, and Behavior*, 9(2), 143-155. <https://doi.org/10.1080/2153599X.2018.1439087>

Published in:
Religion, Brain, and Behavior

Document Version:
Peer reviewed version

Queen's University Belfast - Research Portal:
[Link to publication record in Queen's University Belfast Research Portal](#)

Publisher rights
Copyright 2018 Taylor & Francis. This work is made available online in accordance with the publisher's policies. Please refer to any applicable terms of use of the publisher.

General rights
Copyright for the publications made accessible via the Queen's University Belfast Research Portal is retained by the author(s) and / or other copyright owners and it is a condition of accessing these publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy
The Research Portal is Queen's institutional repository that provides access to Queen's research output. Every effort has been made to ensure that content in the Research Portal does not infringe any person's rights, or applicable UK laws. If you discover content in the Research Portal that you believe breaches copyright or violates any law, please contact openaccess@qub.ac.uk.

Open Access
This research has been made openly available by Queen's academics and its Open Research team. We would love to hear how access to this research benefits you. – Share your feedback with us: <http://go.qub.ac.uk/oa-feedback>

CREDs, CRUDs, and Catholic Scandals: Experimentally examining the effects of religious paragon behaviour on co-religionist belief

Abstract

Previous research on ‘Credibility Enhancing Displays’ (CREDs) suggests that long-term exposure to religious role models ‘practicing what they preach’ aids the acceptance of religious representations by cultural learners. Likewise, a considerable amount of anecdotal evidence implicates its opposite, perceived ‘religious hypocrisy’ (forthwith ‘Credibility Undermining Displays’ or ‘CRUDs’), as a factor in the rejection of religion. However, there is currently little causal evidence on whether behaviours of either kind displayed by religious authorities directly affect pre-existing religious belief. The current study investigated this question by priming Irish self-identified ‘Catholic Christian’ participants with either a clerical ‘CRED’ or ‘CRUD’ and subsequently measuring levels of explicit and implicit belief. Our results revealed no effects of immediate CRED or CRUD exposure on either implicit religious belief or three different measures of explicit religiosity. Instead, explicit (but not implicit) religiosity was predicted by past CRED exposure. Prospects and limitations of experimental approaches to CREDs/CRUDs are discussed.

1. Introduction

Many major religious traditions incorporate a priestly caste expected to exemplify the tenets of the creed. Through behaviour which would be costly if they did not believe what they said they did, such paragons project the appearance of a deep conviction in the supernatural order they verbally endorse. Some of these behaviours are isolated performances, such as the Pope washing and kissing feet on Maundy Thursday, while others involve a state of permanent behavioural sacrifice. Priestly celibacy, for example, entails the renunciation of sexual intimacy and biological continuation via offspring, all the better to serve a supernatural entity who cannot be seen and whose existence believers must take on faith. How might behaviours such as these bolster the religious conviction of witnesses? Conversely, what might happen to co-religionist belief when those same paragons are seen to tumble from their moral plinths?

Work in the Cognitive Science of Religion (CSR) which draws on dual inheritance theory to emphasise the role of context biases in representational transmission suggests that the transmission and acceptance of supernatural agent beliefs is aided by the presence of ‘Credibility Enhancing Displays’ (CRED’s) on the part of cultural models (Henrich, 2009; Lanman, 2012). CREDs are instances of ‘practicing what is preached’ – namely costly or hard-to-fake actions an individual would not perform if they did not believe what they said they did. Scholars have proposed that the CRED bias arose as a counter-deception tool in response to the dangers of Machiavellian manipulation presented by the evolution of language, and that this bias was ‘hacked’ via cultural evolution to raise the credibility of empirically unverifiable religious representations, thereby aiding their transmission to and acceptance by witnesses (Henrich, 2009). Religious CREDs encompass such activities as costly ritual practice, scarification, martyrdom, celibacy, emotional displays, financial donations, dietary taboos, and so on. A number of correlational studies have already established a link between past CRED exposure and religious belief. Lanman and Buhrmester found that levels of parental CRED exposure predicted differences in theism and non-theism, religiosity, and degrees of certainty in God’s existence among US Christians while controlling for religious socialisation (Lanman & Buhrmester, 2016), while Willard and Cingl found that differing levels of orthodox religious belief between culturally similar Slovaks and Czechs are partly attributable to differences in childhood CRED exposure (Willard & Cingl, in press). It has also been found that past CRED exposure predicts varying levels of ‘implicitly theistic’ responses in Australian atheists (Hitzeman & Wastell, in press).

The CRED literature also raises a currently unexplored question concerning the effects on pre-existing belief of religious cultural model behaviours that run directly *contrary* to professed commitments. Such instances of ‘religious paragon hypocrisy’ could be construed as constituting ‘Credibility Undermining Displays’ (CRUDs) for witnessing co-religionists. Sociological evidence suggests that perceived religious hypocrisy is an important catalyst for US Christian deconversion (Kinnaman & Lyons, 2007, cited in Wollschleger & Beach, 2011), including CRUD-type activities such as preachers ‘pocketing’ congregational donations or engaging in illicit sexual activity (Wright *et al*, 2011). Interviews with atheists and the non-religious also frequently reference hypocrisy as a factor in the rejection of religion (Lanman, 2012). Beyond Christianity, apostasy from strict religious sects such as Hasidic Judaism has been linked to perceived hypocritical religious authorities (Davidman, 2014), as has departure from new religious movements (Sauvayre, 2011; Van Leeuwen, 2014). Moral psychologists have documented the particular contempt triggered by perceptions of hypocrisy (Haidt, 2006;

Monin & Merritt, 2010; Jordan *et al*, 2017), and it has been suggested that it may be increasingly relevant to the abandonment of connected religious commitments as modern communication technologies allow damaging information to proliferate in an uncontrollable fashion (Shupe, 1997; Donnelly & Inglis, 2010; Dennett & Roy, 2015), magnifying the reach and scope of reputation monitoring gossip (Dunbar, 1996). Particularly prolific and sustained high-media-profile institutional scandals such as those that have affected the Irish Catholic Church in recent decades have even been tenuously linked to accelerations in national secularisation trends (Hilliard, 2003; Donnelly & Inglis, 2010; Keenan, 2012; Brown, 2012). Finally, hypocrisy accusations (merited or otherwise) have also long been deployed as weapons against the credibility of religious groups and figures, from medieval anti-heretic tracts (Lambert, 2002) through to contemporary New Atheist anti-religious memes.

In sum, although there are numerous findings from sociologists and developmental psychologists studying the relationship between behavioural modelling and the intergenerational transmission of beliefs that could be taken to corroborate the CRED hypothesis to varying degrees (Okagaki *et al*, 1999; Bader & Desmond, 2006; Baker & Smith, 2009; Bengston *et al*, 2013), the cognitive literature pertaining directly to CREDs has thus far only produced correlational evidence for a relationship between CRED exposure and religious belief, and no work whatsoever on CRUDs. One noteworthy exception providing some causal evidence for CREDs is the finding that people are more likely to bet on the truth of a counter-intuitive proposition if an experimental confederate performs a CRED indicating that they hold that proposition to be true (Willard *et al*, 2016). However, there has yet to be any work demonstrating a direct causal influence of CREDs on specifically religious belief, including the acceptance of pre-established rather than novel representations. This means that we do not know whether CREDs/CRUDs might operate on religious belief purely via a gradual build-up of exposure, or whether they might also be able to produce direct, immediate (and presumably temporary) effects on existing religious belief, effects that furthermore might only be noticeable via implicit measures due to demand characteristics.

The current study therefore examines the potential direct effects of immediate exposure to CREDs and CRUDs on religious belief on both an explicit and implicit level. It does so within the specific context of Irish Catholicism, a religious tradition with a clearly delineated caste of religious paragons who could plausibly serve as culturally prominent CRED-sources, while also having reputedly suffered increased disaffiliation and scepticism due to media-disseminated instances of high profile religious hypocrisy in the form of clerical abuse scandals and Church cover-ups. It was therefore expected that using Irish Catholic participants would

have the added benefit of increasing the plausibility, generalisability, and thus efficacy of the Catholicism-targeted CRED and, in particular, CRUD primes due to associations participants would have developed over the course of the past twenty-five years.

2. Methods

2.1. Participants and Methods

185 self-identified Irish Catholic Christians (108 females, mean age = 47.1, SD = 9.8) were randomly assigned to one of three conditions: A CRED prime condition (60 participants, 39 females, mean age = 49.2, SD = 9.2), a CRUD prime condition (64 participants, 34 females, mean age = 46.0, SD = 10.1), or a control prime condition (61 participants, 35 females, mean age = 46.1, SD = 9.8). All participants were told they were taking part in a study on the effects of emotion on the recall of detail from news stories. In each condition, participants were told they would see three news stories randomly selected from a pool of over 50. Participants were shown two distraction stories before being exposed to the explicit primes (see Appendix B). In the CRED condition, participants were exposed to an article about altruistic clerical martyrdom; in the CRUD condition participants were exposed to an article about unrepentant clerical sexual abuse and institutional complicity; and in the control condition, participants were exposed to a neutral cookery article. After reading each story, participants were asked to produce a brief summary of the content to check for attention and to ensure deep processing of the prime. Prior to launch, the study received Human Subjects approval from the ethical review committee at Queen's University Belfast. The sample size was the maximum possible based on cost considerations.

After being exposed to the news stories, participants completed a Single Target Implicit Association Test (ST-IAT) (Shariff *et al*, 2008; Jong *et al*, 2012), which was used as a measure of implicit religiosity theoretically capable of bypassing demand characteristics. During the ST-IAT stage, participants are presented with a series of three rounds where they are tasked with categorising stimuli as quickly as possible using their keyboard (see image below). In the first round, they are presented with synonyms for 'real' and 'imaginary' which they must categorise by pressing one of two assigned keys. In the second and third rounds, participants are counterbalanced and given the task of assigning extra religious words to the 'real' category in one round, and the 'imaginary' category in the other. The ST-IAT uses the resulting response latencies to measure the swiftness of association between various generic Christian concepts (God, Devil, Angel, Demon, Heaven, Hell) and terms synonymous with the opposing poles

‘real’ / ‘imaginary’, assigning a d-score to responses whereby minus scores indicate a stronger association with ‘imaginary’, while plus scores indicate a stronger association with ‘real’.

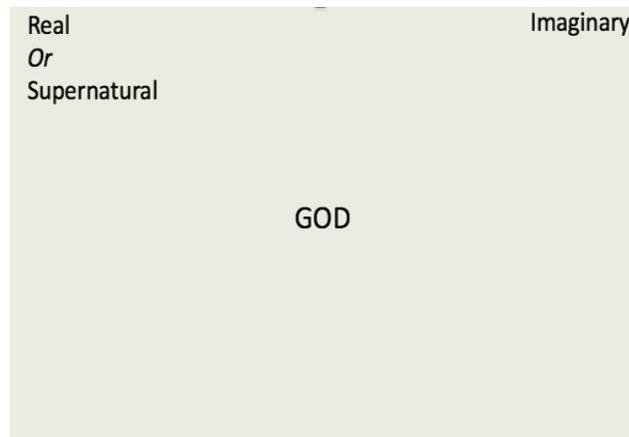


Image 1: The ST-IAT during rounds 2/3. In this case, participants must assign religious terms to the ‘real’ category on the left.

After the ST-IAT, participants completed three explicit measures of religiosity: a ‘Rejection of Christianity’ scale measuring rejection of specifically Christian doctrine and Church authority (Greer & Francis, 1992), a four-item scale measuring social identification with Catholicism (Postmes *et al*, 2013), and a Religious Belief Scale measuring more general supernatural/theistic beliefs common in Western populations (Pennycook *et al*, 2015). Since so little is known about how CREDs relate to religiosity, these three explicit measures were included in order to investigate the degree to which prime influence might vary across different levels: acceptance of specific doctrines and institutions; personal identification with a specific religious tradition; theistic beliefs more generally. Finally, participants completed a scale measuring past parental CRED exposure (Lanman & Buhrmester, 2016), as this was hypothesised to be a potential covariate.

We hypothesised that priming with a CRED would 1) lead to higher ST-IAT-scores (implicit), higher Catholic identity scores (explicit), higher belief scores (explicit), and lower rejection scores (explicit) than in the control condition, and that 2) priming with a CRUD would lead to lower IAT-scores (implicit), lower Catholic identity-scores (explicit), lower belief scores (explicit), and higher rejection-scores (explicit) than in the control condition.

The experiment was conducted online via the Qualtrics Panels recruitment service, with participants remunerated on a length-related basis. A week before conducting the experiment, 1000 potential participants were screened using a brief ‘short term memory test’ distraction task followed by demographic questions later used to check for confounds. The relevant

screening variables were nationality, religious affiliation, and age. Attention checks were used both in the screener and the experiment proper to weed out participants who were not paying attention. Only Irish Catholic Christians who passed attention checks and were over 30 years of age were selected. The age limit was set to over 30, as this meant that participants would have been old enough to have been exposed to substantial amounts of media material pertaining to Catholic religious scandals in the past. Those identifying as non-religious were excluded at the screening stage, as the experiment sought to manipulate existing levels of religious belief.

2.2. Data Analysis

To test the hypothesis that 1) priming with a CRED would lead to higher ST-IAT-scores (implicit), higher Catholic identity scores (explicit), higher belief scores (explicit), and lower rejection scores (explicit) than in the control condition, and that 2) priming with a CRUD would lead to lower IAT-scores (implicit), lower Catholic identity-scores (explicit), lower belief scores (explicit), and higher rejection-scores (explicit) than in the control condition, we performed a linear regression on the relationship between experimental condition and scores on the ST-IAT, Rejection of Christianity Scale, Religious Belief Scale, and Catholic Identity Scale. To control for previous exposure to CREDs, we tested whether CRED Scale Scores improved the model to fit the data using an ANOVA-based model comparison. We only report the model with CRED Scale scores as covariate when its fit was significantly better (for a full specification of all models, see appendix). Visual inspection of residual plots revealed no obvious deviations from homoscedasticity or normality. In order to correct for multiple comparisons, we performed a Bonferroni correction of the p-values. Reported p-values are all corrected. To perform the analysis we used version 3.3.0 of the statistical software R (R Core team, 2016).

3. Results

3.1. ST-IAT

Results revealed no significant effect of the CRED condition (Mean = -0.15, SD = 0.24) on participants' d-scores compared to the baseline condition (Mean = -0.27, SD = 0.30) ($\beta = 0.11546$, SE = 0.05192, $p = 0.2192$), and no significant effect of the CRUD condition (M = -0.17, SD = 0.24) on participants' d-scores compared to the baseline condition ($\beta = 0.09214$, SE = 0.05109, $p = 0.5840$). Adding CRED Scale Scores to the statistical model did not significantly improve the model.

3.2. Rejection of Christianity Scale

Results revealed no significant effect of the CRED condition (Mean = 55.7, SD = 16.6) on Rejection Scale Scores compared to the Baseline condition (Mean = 59.9, SD = 18.5) ($\beta = -0.8893$, SE = 3.0317, $p = 1$), and no significant effect of the CRUD condition (Mean = 60.6, SD = 15.8) on Rejection Scale Scores compared to the Baseline condition ($\beta = 1.5180$, SE = 2.8994, $p = 1$). Instead, results revealed that Rejection scores were predicted by CRED Scale scores: an increase of one point in CRED Scale score was related to a decrease of 0.58 points in Rejection scores ($\beta = -0.5781$, SE = 0.1288, $p = 0.0001$).

3.3. Catholic Identity Scale

Results revealed no significant effect of the CRED condition (Mean = 17.3, SD = 8.0) on Catholic Identity scores compared to the baseline condition (Mean = 17.4, SD = 7.7) ($\beta = -2.00915$, SE = 1.28124, $p = 0.9488$), and no effect of the CRUD condition (Mean = 16.1, SD = 6.7) on Catholic Identity Scores compared to the Baseline condition ($\beta = -1.71832$, SE = 1.22533, $p = 1$). Instead, results revealed that Catholic Identity Scores were predicted by CRED Scale scores: an increase of one point in CRED Scale score was related to an increase of 0.33 points on the Catholic Identity scale ($\beta = 0.33418$, SE = 0.05442, $p < 0.00001$).

3.4. Religious Belief Scale

Results revealed no significant effect of the CRED condition (Mean = 42.1, SD = 17.1) on Religious Belief scores compared to the baseline condition (Mean = 37.8, SD = 14.9) ($\beta = 1.196667$, SE = 2.798901, $p = 0.669488$), and no effect of the CRUD condition (Mean = 38.6, SD = 15.1) on Religious Belief scores compared to the Baseline condition ($\beta = 0.009695$, SE = 2.676754, $p = 0.997114$). Instead, results revealed that Religious Belief Scores were predicted by CRED Scale Scores: an increase of one point in CRED Scale score was related to an increase of 0.53 points in Religious Belief scores ($\beta = 0.535218$, SE = 0.118891, $p = 0.00010$).

4. Discussion

We found no effects of the CRED and CRUD primes on any of the explicit measures of religiosity, and no effect on the ST-IAT d-scores associating religious concepts with truth/falsity. Null findings could be the result of a number of factors: 1) the absence of any

effect; 2) issues with the sample; 3) issues with the manipulation and measures; 4) a smaller effect size than could be detected. These will be described in further detail below.

1) Absence of Effect: Notably, the CRED scale correlated strongly with all explicit measures of religiosity. In combination with the experimental null results, the correlational CRED data could be taken to suggest that once-off exposures to CREDs or CRUDs may be ineffective at even temporarily altering religious attitudes supported by a lifetime of religious conditioning (crucially including exposure to repeated past CREDs and CRUDs during childhood and adolescence). Aggregated CREDs and CRUDs may be instrumental in forming religious attitudes during ontogenesis, but there may be a point at which further exposure becomes irrelevant after said religious attitudes have formed. However, the current experiment assumed that while we tend to divide populations into ‘believers’ and ‘unbelievers’, it is likely that people may in actuality develop multiple co-existing and contradictory attitudes towards religious claims, and that these may be contextually activated, for example by immediate evaluations of source credibility. Given recent work in the cognitive science of religion suggesting religious belief is contextual (Astuti & Harris, 2008), effortful (Luhrmann, 2012; Boyer, 2013), and akin to fictional immersion (Van Leeuwen, 2014), it therefore seemed plausible that even if identity-linked explicit measures were unaffected by lone CREDs/CRUDs, implicit associations between religious concepts and truth/falsity might show some kind of temporary response. However, these results could be taken to suggest that behavioural religious modelling is instrumental in establishing religious certitudes during childhood but, once established, further lone CREDs and CRUDs simply do not produce such fluctuations in credence even at a temporary, implicit level.

2) Issues with the Sample: At a technical level, the decision to use an online sample may have been particularly problematic due to the uncontrolled nature of the environment in which the study would have been taken and how this might have affected the efficacy of the primes, particularly given that priming studies usually only elicit mild effect sizes. At a more conceptual level, surveying and interviewing work conducted alongside the current experiment suggested that clerical abuse is a highly prominent association for almost all Irish Catholics. Crucially, the sample by definition consisted of people retaining an identity as Catholic Christian despite over two decades of clerical abuse revelations and a surrounding environment saturated in discussion of religious scandal. While it was hypothesised that this would have made the primes more believable by activating a host of past and present associations, it may in fact rather have introduced an unmanageable confound, as participants had presumably developed strategies which allowed them to retain commitment to a religious tradition widely

perceived as contaminated, affecting how the primes were received. The most common example would be the ‘bad apple’ interpretation of clerical abuse, where institutional culpability is downgraded and attention is focussed on the individual transgressor, quarantining the overall tradition from damage. The CRUD prime included content relating to institutional complicity in order to counter this ‘quarantining’ possibility, but the problem may be deeper than this. ‘Irish Catholic Christian’ is a broad category encompassing everything from ‘cultural’, ‘ethnic’ or ‘lapsed’ Catholics to orthodox religious conservatives, meaning reactive strategies will vary. Interference with the primes could therefore manifest in a number of contrasting ways. For example, some have rejected the Church while retaining a Catholic identity and personalised idiosyncratic theism (Inglis, 1998). This could mean that priests as a category no longer function as religious paragons for such individuals, likely undermining the efficacy of clerical CRED/CRUD primes, but it could also on the contrary be that such individuals have lower past CRED exposure and fewer autobiographical memories pertaining to Catholic socialisation, making the primes more effective as they have fewer past associations to contend with. Beyond this, Ireland is host to a contested and polarising process of institutional secularisation involving the frequent weaponisation and deflection of religious hypocrisy as rival actors seek to retain or reduce lingering Catholic influence in various social spheres. This means that it is likely that more conservative Catholics may treat reportage of clerical abuse as an out-group attack issuing from hostile secularists, potentially preventing the primes (in this case in particular, newspaper stories) from being absorbed at face value. In this case, CRUD primes may well produce a consolidation of religious identity and connected beliefs. Future work regarding the effects of CRUDs in CRUD-saturated environments would benefit from parsing out specific sub-groups sharing reactive strategies within overall religious traditions, a necessity that would likely complicate designs greatly. It may therefore be simpler to initially conduct studies among populations with less experience of religious paragon hypocrisy where entrenched cultural reactions may not be so much of an issue before attempting to tackle populations drawn from such environments. Another strategy would be to use more novel CRUD primes not related to widely reported instances of religious hypocrisy. Such a situation would mean that religious participants would have to process the novel CRUD for the first time, overcoming the problem of swift habituated responses and potentially creating a window of opportunity to measure immediate effects on belief. Finally, the degree to which CRUDs might prompt the rejection of religious representations would vary a great deal according to such factors as the degree of emphasis placed on religious authority figures by different institutions and traditions, the degree to which such figures are viewed as

representatives of a sacred category of specialists versus private individuals, and the degree to which the surrounding religious environment constitutes an open ‘religious marketplace’ providing ample opportunities for religious switching or a hegemonic environment primarily affording outright religious rejection (e.g. Finke & Stark, 1996). Such factors should also be taken into account in future samples.

3) Manipulation and Measures: Issues pertaining to potentially confounding interactions between the sample and the priming manipulations have been broached above. A further problem is that out of a desire to send participants as quickly as possible into the ST-IAT stage before the primes faded, the procedure did not include a manipulation check (for example, a word completion task) that would have enabled verification that the primes had produced an effect (although participants did briefly summarise the prime, thereby providing evidence that they had at least absorbed it to some extent). The measures, in particular the ST-IAT, may also have constituted a problem. The ST-IAT utilised generic Christian terminology and was chosen because today it is far easier to find Catholics who accept such representations than those who report literal beliefs in transubstantiation, Papal infallibility, and other esoteric and specifically Catholic doctrines. However, contemporary generically Christian beliefs can co-exist as a kind of ‘moral therapeutic deism’ (Smith, 2005) alongside an ethnically Catholic identity and rejection of or even hostility towards the institutional Church, reducing the effectiveness of the primes as CREDs/CRUDs since the ‘paragon’ involved in the news stories is no longer evaluated as a religious model for the individualised versions of the representations in question. If seeking implicit Catholic CRED/CRUD effects, further studies should use an ST-IAT with highly specific Catholic concepts after all, and recruitment should focus on a Catholic environment where orthodox belief is higher (the Philippines, for example). It is possible that in such a setup, overall implicit acceptance would be lower due to the esoteric concepts, but the differences between conditions would be greater due to their more unambiguous linkage with the authority figures featured in the primes, thereby revealing doctrinally specific CRED and CRUD effects suppressed by the generic terminology used by the present measure. A further complicating factor regarding the ST-IAT result is that, unlike the explicit measures, scores did not correlate with past CRED exposure. This opens up at least two possibilities requiring further investigation, firstly that the ST-IAT is a poor measure of implicit religiosity, or secondly that professed religious belief is best understood as form of reflectively held meta-representational commitment tied to social identity and actually bears relatively little relation to the degree to which a person intuitively holds supernatural representations to be real (e.g. Sperber, 1996; Van Leeuwen, 2014). Limiting ourselves to the

first possibility, while IATs have generally been championed as a means of bypassing socially desirable responding, they have also been the subject of much recent controversy revolving around both their low degree of test-retest reliability and what it is that they actually measure ('implicit attitudes' or merely culturally salient semantic associations), with contrasting meta-analyses claiming to vindicate or indict the paradigm (Greenwald *et al*, 2009; Oswald *et al*, 2013). While experimental designs relying purely on explicit measures would be unsatisfactory due to demand characteristics and entrenched social identities as religious/non-religious, it may behove future designs to replace the ST-IAT with a more reliable behavioural measure.

4) Effect Size: A final possibility may be that the measures employed in the study were simply not sensitive enough to detect subtle changes in explicit and implicit religiosity. This could be addressed by changing the measures as per the suggestions above (a behavioural measure would be particularly suitable), or it could potentially be detected by administering a repeated measures design of some kind in the future.

In order to estimate the minimum effect size that could be reliably (power = 0.8) assessed with a sample size of 185 participants (our current sample) we conducted a post hoc sensitivity power analysis relying on the software G*power 3.1. For model1a (see appendix) the minimum effect size to be reliably assessed is $F^2 = 0.05$ and for all the other models is $F^2 = 0.06$. These minimum effect sizes correspond to R^2 effects sizes (percentage of variance in the outcome explained by the model) of 0.05 or smaller, that is, less than 5% of variance explained. It is questionable if anyone would be interested in such a small effect.

5. Conclusion

The current study represents a first pass at experimentally examining the immediate effects of religious paragon behaviour on witnessing co-religionist belief, a topic that has yet to be addressed in the CSR literature on CREDS/CRUDs and their role in the acceptance of religious representations. By laying out the methods used and limitations entailed, we hope that this initial effort will prove instructive to those interested in designing future experiments on this subject. The CRED and CRUD primes were found to have no significant effect on explicit measures of religious belief and identity, but scores on the explicit measures were found to be predicted by past CRED exposure. The manipulations also had no effect on implicit belief as measured by the ST-IAT. The findings support existing work linking CRED exposure to intergenerational religious transmission (Lanman, 2012; Lanman & Buhrmester, 2016), and could also be taken to suggest that lone CREDS/CRUDs have little impact on prior

commitments established over long periods of time: CREDs are relevant to belief at an ontogenetic but not an immediate level. The results could also be taken to suggest that the relationship between religious hypocrisy and apostasy evident in the sociological literature is most likely an indirect one: hypocrisy does not create an immediate effect on witness belief, but may prompt re-examination of the value of membership in the religious coalition (Wollschleger & Beach, 2011), something which may subsequently lead over time to the reflective rejection of connected religious representations. However, the current results should be interpreted with caution, as they may also result from features of the experimental design (for example, the relatively non-specific Christian conceptual associations measured by the ST-IAT), or the fact that the participant group are accustomed to religious scandals (putatively leading to swift defensive reactions against perceived attacks or the rejection of traditional religious authority figures as religious models) rather than the absence of direct CRED/CRUD-type effects on religious belief. Further studies which address these methodological limitations are required to clarify whether CREDs/CRUDs have a direct effect on religious belief.

6. Appendices

Appendix A: Statistical Models

Table 1: Full specification for all models.
All p-values are corrected for multiple comparisons.
(* designate the model with the best fit)

Model	Dependent variable	R code	Independent Variable	β	SE	p-value
1*	IAT	lm(IAT ~ Condition, Data)	CRED-prime	0.11546	0.05192	0.2192
			CRUD-prime	0.09214	0.05109	0.5840
1a	IAT	lm(IAT ~ Condition + Cred_Scale, Data)	CRED-prime	0.12079	0.05365	0.2048
			CRUD-prime	0.09343	0.05131	0.5624
			CRED Scale	-0.00093	0.00227	1
2	Rejection of Christianity Scale	lm(reject ~ Condition, Data)	CRED-prime	-4.202	3.091	1
			CRUD-prime	0.710	3.042	1
2a*	Rejection of Christianity Scale	lm(reject ~ Condition + Cred_Scale, Data)	CRED-prime	-0.8893	3.0317	1
			CRUD-prime	1.5180	2.8994	1
			CRED Scale	-0.5781	0.1288	0.00010
3	Catholic Identity Scale	lm(Catholic_Identity ~ Condition, Data)	CRED-prime	-0.09399	1.36225	1
			CRUD-prime	-1.25128	1.34062	1
3a*	Catholic Identity Scale	lm(Catholic_Identity ~ Condition + Cred_Scale, Data)	CRED-prime	-2.00915	1.28124	0.9488
			CRUD-prime	-1.71832	1.22533	1
			CRED Scale	0.33418	0.05442	0.00001
4	Religious Belief Scale	lm(belief_total ~ Condition, Data)	CRED-prime	4.2639	2.8548	1
			CRUD-prime	0.7577	2.8094	1
4a*	Religious Belief Scale	lm(belief_total ~ Condition + Cred_Scale, Data)	CRED-prime	1.19667	2.79890	1
			CRUD-prime	0.00970	2.67675	1
			CRED Scale	0.53522	0.11889	0.00010

Appendix B: Priming Materials

1. CRUD Prime

Father David Waldron in new child abuse charges



0 Comments

1 Share

BY LORRAINE MCMANUS – 26 JANUARY 2016

One of the Catholic Church's most notorious paedophile priests is once again under investigation for his abuse of children. Fr David Waldron (64) had already been investigated for subjecting more than one hundred underprivileged African children to sexual abuse over a 17-year period.

The new charges relate to prior abuse against two boys in a parish where he was formerly based. In the courtroom, Waldron expressed no remorse for his actions, which he maintained were harmless. Witnesses in the case condemned his cruelty, indecency and deep hypocrisy.

Waldron's actions had been officially investigated before in relation to the sexual abuse of underprivileged children in the Third World, but crucial evidence was withheld on the advice of the Vatican. These earlier allegations related to the sustained sexual abuse of impoverished Liberian children by gaining the trust of their parents and the community. Parents in the Liberian parish of Freetown where Fr. Waldron served reported that he misled them into believing that 'the healing hands of a priest' could prevent a range of conditions, including Ebola.

At the hearing, he was been condemned by former parishioner Martin O'Keefe for 'representing through his actions all that is immoral, duplicitous, and fraudulent in the Catholic Church'.

2. CRED Prime

Father David Waldron honoured in Co. Wicklow ceremony



 Comments

 1 Share

BY LORRAINE MCMANUS – 26 JANUARY 2016

A memorial service has been held at a private venue in Co. Wicklow for Father David Waldron, one of Ireland's most celebrated priests. The ceremony honoured him for his work with Liberian men and women suffering from Ebola.

Fr. Waldron was recognised by the Vatican for helping more than one hundred underprivileged people to receive hydration treatment in the remote Liberian village of Freetown. 43 of these survived the disease, largely thanks to Fr. Waldron's efforts.

In the absence of effective protective clothing, Fr. Waldron's commitment to helping those with the disease ultimately led to his own illness and death. Waldron is said to have continued overseeing the care of the sick from his bed even after he himself had contracted the disease, and refused to be flown out to a French clinic for treatment. When asked about his work, Fr. Waldron is reported to have replied, "I cannot abandon them. Greater love hath no man than this, that a man lay down his life for his friends."

He was honoured for his self-sacrifice, decency and deep humanity. During the ceremony, he was praised by fellow priest Fr. Martin O'Keefe for 'representing through his actions all that is good, all that is holy, and all that is right about the Christian faith and the teachings of Our Lord Jesus Christ.'

At the ceremony, Fr. Waldron's brother spoke on behalf of his family, praising his commitment to helping those most in need in keeping with his vocation and beliefs.

3. Control Prime

No fuss cooking for a hot summer day



[0](#) Comments

[1](#) Share

BY DAVID FITZGERALD – 1 JUNE 2016

There are so many great fruits and vegetables in season right now that it's a shame not to put them to good use. Strawberries, for example, can be used in many innovative ways, not just for the ubiquitous strawberries and cream. With a few simple ingredients like ripe tomatoes, garlic, cucumber, strawberries, some good olive oil and a handful of basil, you can make a very acceptable gazpacho to have in the garden for one of those sunny summer lunches. Just one example of how versatile a fruit the strawberry is.

Then there are all those lovely green beans - Broad, French, Runner. Broad beans cooked and crushed make a very easy and tasty accompaniment for a variety of meat dishes – particularly good with spicy griddled pork, and sure to impress your friends. French beans lightly cooked but not too al dente, cooled and tossed with toasted sesame seeds and a little dressing of your choice make a great summer side salad to accompany a buffet lunch. You could also add a simple salad of new potatoes, parsley and chives dressed with a dash of olive oil, a good sprinkling of sea salt and a little mayonnaise.

There you have it! A lovely, simple lunch to have al fresco with your family and friends. The only extras you'll need are some jugs of iced lemonade and a couple of bottles of your favourite white wine, well chilled. Enjoy!

More great ideas on my facebook page.

References

- Astuti, R. & Harris, P. (2008). "Understanding Mortality and the Life of the Ancestors in Rural Madagascar." *Cognitive Science*, 32, 713-740
- Bader, C. & Desmond, S. (2006). "Do as I say and as I do: the effects of consistent parental beliefs and behaviours upon religious transmission." *Sociology of Religion*, 67, 3, 313-329
- Baker, J. & Smith, B. (2009). "The Nones: Social Characteristics of the Religiously Unaffiliated." *Social Forces*, 187, 3-26
- Boyer, P. (2013). "Why 'belief' is hard work: Implications of Tanya Luhrmann's *When God Talks Back*." *HAU: Journal of Ethnographic Theory* (3), 3, 349-357
- Brown, C.G. (2012). *Religion and the Demographic Revolution: Women and Secularisation in Canada, Ireland, UK and USA Since the 1960s*. Boydell Press: Woodbridge
- Bengston, Putney & Harris. (2013). *Families and Faith: How Religion is Passed Down Across Generations*. Oxford University Press.
- Davidman, L. (2014) *Becoming Un-Orthodox: Stories of Ex-Hasidic Jews*. Oxford University Press.
- Dennett, D. & Roy, D. (2015) "How Digital Transparency Became a Force of Nature." *Scientific American*, <http://www.scientificamerican.com/article/how-digital-transparency-became-a-force-of-nature/>
- Dunbar, R. (1996). *Grooming, Gossip and the Evolution of Language*. London: Faber and Faber
- Donnelly, S. & Inglis, T. (2010). "The Media and the Catholic Church in Ireland: Reporting Clerical Child Sex Abuse." *Journal of Contemporary Religion*, 25:1, 1 – 19
- Egan, K. (2011). *Remaining a Catholic after the Murphy Report*. Columba.
- Finke, R. & Stark, R. (2005) *The Churching of America: Winners and Losers in Our Religious Economy*. Rutgers University Press.
- Greer, J. E., & Francis, L. J. (1992). "Measuring 'rejection of Christianity' among 14-16-year-old adolescents in Catholic and Protestant school in Northern Ireland." *Personality and Individual Differences*, 13, 1345-1348
- Haidt, J. (2006). *The Happiness Hypothesis: Finding Modern Truth in Ancient Wisdom*. Basic Books.
- Henrich, J. (2009). "The evolution of costly displays, cooperation, and religion: Credibility enhancing displays and their implications for cultural evolution." *Evolution and Human Behaviour*, 30 (4), 244-260

Hilliard, B. (2003). "The Catholic Church and Married Women's Sexuality: Habitus Change in the Late 20th Century Ireland." *Irish Journal of Sociology* 12.2, 28–49.

Hitzeman, C., & Wastell, C. A. (in press). "Are Atheists Implicit Theists?" *Journal of Cognition and Culture*.

Inglis, T. (1998) *Moral Monopoly: The Rise and Fall of the Catholic Church in Modern Ireland*. Dublin: University College Dublin.

Jong, J., Halberstadt, J., & Bluemke, M. (2012). "Foxhole atheism, revisited: The effects of mortality salience on explicit and implicit religious belief." *Journal of Experimental Social Psychology*, 48, 983-989.

Jordan, J.J. , Sommers, R., Bloom, P. & Rand, D. G. (2017) "Why Do We Hate Hypocrites? Evidence for a Theory of False Signalling." *Psychological Science*, 2017, 1, 1-13

Keenan, M. (2012). *Child Sexual Abuse and the Catholic Church: Gender, Power and Organisational Culture*. Oxford University Press.

Kinnaman D and Lyons G (2007) *UnChristian: What a New Generation Really Thinks about Christianity... and Why It Matters*. New York: Baker Books.

Lambert, M. (2002). *Medieval Heresy: Popular Movements from the Gregorian Reform to the Reformation*. Blackwell.

Lanman, J. (2012). "The Importance of Religious Displays for Belief Acquisition and Secularisation." *Journal of Contemporary Religion*, 27 (1), 49-65

Lanman, J. A. & Buhrmester, M. (2016). "Religious Actions Speak Louder than Words: Exposure to CREDs Predicts Theism." *Religion, Brain and Behaviour*, 6, 3-16.

Luhrmann, T. (2012). *When God Talks Back: Understanding the American Evangelical Relationship with God*. Vintage.

Monin, B. & Merritt, A. (2010). "Moral hypocrisy, moral inconsistency, and the struggle for moral integrity." M. Mikulincer & P. Shaver (Eds.), *The social psychology of morality: Exploring the causes of good and evil, Herzliya Series on Personality and Social Psychology, Vol. 3*, American Psychological Association.

Okagaki, L., Hammond, K., Seamon, L. "Socialization of Religious Beliefs." *Journal of Applied Developmental Psychology*, 20 (2), 273 – 294

Pennycook, G., Cheyne, J. A., Barr, N., Koehler, D. J., Fugelsang, J. A. (2015). "On the reception and detection of pseudo-profound bullshit." *Judgment and Decision Making*, 10 (6), 549-563.

Postmes, T., Haslam, S. A., Jans, L. (2013). "A single-item measure of social identification: Reliability, validity, and utility." *British Journal of Social Psychology*, 52, 597-617.

Sauvayre, R. (2011). "Le changement de croyance extremes: Du cadre cognitive aux conflits de valeurs". *Revue européenne des sciences sociales – European Journal of Social Sciences*, 49(1), 61–82.

Shariff, A., Cohen, A. & Norenzayan, A. (2008) "The Devil's Advocate: Secular Arguments Diminish Both Implicit and Explicit Religious Belief." *Journal of Cognition and Culture*, 8, 417-423

Shupe, A. (1997) "Vicissitudes of Public Legitimacy for Religious Groups: A Comparison of the Unification and Roman Catholic Churches." *Review of Religious Research*, 39, 2, 172-183.

Smith, C. (2005). *Soul Searching: The Religious and Spiritual Lives of American Teenagers*. Oxford University Press.

Sperber, D. (1996). *Explaining Culture: A Naturalistic Approach*. Blackwell

Van Leeuwen, N. (2014). "Religious Credence is not Factual Belief." *Cognition*, 1, 33, 698-715

Willard, A. K. & Cingl, L., (in press) "Testing Theories of secularization and religious belief in the Czech Republic and Slovakia." *Evolution and Human Behavior*.

Willard, A. K., Henrich, J., & Norenzayan, A. (2016). "Memory and Belief in the Transmission of Counterintuitive Content." *Human Nature*, 27 (3), 221-243

Wollschleger, J. & Beach, L. (2011). "A cucumber for a cow: a theoretical explanation of the causes and consequences of religious hypocrisy." *Rationality and Society*, 23 (2), 155 – 174

Wright, Giovanelli, Dolan & Edwards. (2011). "Explaining Deconversion from Christianity: a Study of Online Narratives." *Journal of Religion and Society*, 1 – 17