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An independent academic psychologist, based in England, who has written extensively on different areas of psychology with an emphasis on the critical stance towards traditional ideas.

A complete listing of his writings at http://psychologywritings.synthasite.com/. See also material at https://archive.org/details/orsett-psych.

CONTENTS

1. TRAUMA - TOO MUCH OR TOO LITTLE

1.1. INTRODUCTION

The term "trauma" is applied widely to many everyday experiences. For some writers, this suggests the overuse of the term ("concept creep") compared to the official diagnostic criteria (eg: Post-Traumatic Stress Disorder; PTSD), whereas others argue that these criteria are too narrow (Hamzelou 2022). Here are examples on each side of this debate.

1.2. TOO NARROW

PTSD is diagnosed by certain symptoms triggered by a traumatic event. This traumatic event is an "A1 criterion", and in DSM-IV-TR (APA 2000), it was defined as "experiencing, witnessing or being confronted with an event or events that involve actual or threatened death or serious injury, or a threat to the physical integrity of self or others" (van den Berg et al 2017 p2). While in DSM-5, the definition was narrowed to "exposure to actual or threatened death, serious injury or sexual violence" (APA 2013 quoted in van den Berg et al 2017). van den Berg et al (2017) stated: "This means that events such as the unexpected death of a family member or a close friend due to natural causes do not meet the A1 criterion of PTSD anymore" (p2).

These authors argued that so-called "non-A1" stressful life events can cause PTSD [1]. Data were taken from the "Netherlands Study of Depression and Anxiety" (NESDA), which involved 2981 Dutch adults with depression and/or anxiety disorder, or healthy controls. Four years into the study, the participants were assessed for PTSD symptoms. This included potentially traumatic A1 events in their lives, and four non-A1 events (non-violence or unexpected death of someone close, severe physical illness, relational problems, and problems at work). Two groups were distinguished for analysis - 573 individuals who had experienced an A1 event, and 860 a non-A1 event

[1] The criticism of PTSD was first made by Breslau and Davis (1987).

in the past five years.

About half of the A1 group were bothered by intrusive thoughts or images, avoidance of event-related cues, and/or heightened arousal related to the event (all key symptoms of PTSD) compared to 86% of the non-A1 group. "Men and women show similar levels of PTSD symptoms after non-A1 events, whereas women show significantly higher PTSD symptoms after A1 events than men. Moreover, men show significantly higher PTSD symptoms after non-A1 events, whereas women show similar levels of PTSD symptoms after both types of events" (van den Berg et al 2017 p5).

van den Berg et al (2017) concluded that the "findings indicate that stressful life events that are not classified as traumatic, according to the DSM A1 criterion, can generate at least the same levels of PTSD symptom severity as A1 events" (p9).

Only four non-A1 events were studied.

Sampson et al (2022) surveyed a sub-sample (n = 33 327) of the Nurses Health Study II (NHSII) (an ongoing cohort of 116 429 female US nurses aged 25-42 years old in 1989). Sixteen lifetime traumatic events were measured (eg: interpersonal or sexual violence), along with PTSD symptoms.

The average age of the respondents was now in their mid-60s. Around 80% reported at least one of the sixteen traumatic events, with the most common being sudden/unexpected death of a loved one, followed by violence.

Overall, 8.7% of the women met the criteria for lifetime PTSD, and 1% for current PTSD. The figures for those who had reported trauma were 10.5% and 1.5% respectively. One-third of the PTSD group reported receiving no treatment, and the "treatment gap" was largest for women with occupational trauma.

PTSD related to "other" category of trauma was most common. This suggested that the traditional categories of PTSD-related trauma are too narrow. The Brief Trauma Questionnaire (BTQ), which was used in the study, covers events from the main categories of trauma, including violence experienced, sudden/unexpected death of a loved one, serious illness or injury, and witnessing an event of serious injury or death.

1.3. OVERUSE

The covid-19 pandemic, lockdowns and associated

problems are associated with increased mental health problems. But there is great variation between individuals, and in trajectories. The latter is usually divided into "resilience" (low level of symptoms over time), "gradual recovery" (high level of symptoms initially and subsequent decline), and "chronicity" (high level of symptoms continuing over time) (Chen et al 2022).

Chen et al (2022) explored trajectories of distress (depression, anxiety, and PTSD) in a study of Hubei residents in mid-2020. Initially, this province had the highest level of covid-19 infected individuals globally, and experienced the strictest lockdown measures in China.

The researchers recruited 326 participants via snowball sampling on Chinese social media platforms. Four waves of questioning occurred between April and October.

Over the study period, concerning PTSD, 93% of the sample were classed as resilient (ie: below the symptom threshold for diagnosis throughout), and remainder as chronicity (high score on symptoms and increased with time). For depression, 84% were resilient, 8% chronic, and 8% classed as recovery (high level of symptoms initially which declined below the diagnostic threshold with time). With anxiety, 58% resilient, 55% recovery, and 37% chronicity (but declining slightly with time).

The researchers analysed fifty variables for predicting the trajectories with machine learning:

i) PTSD - Key variables for resilience included maintaining routines and productivity, family support (and no conflict), and low non-covid-19 stressors. Worry was key to the chronicity trajectory.

ii) Depression - Family support (and conflict), and worry were important in predicting the trajectory taken.

iii) Anxiety - Optimism and pessimism was an important dimension here.

In summary, most individuals did not show signs of diagnosis-level mental problems, and there was great variety in trajectories with many factors involved.

The study was based on volunteers. Chen et al (2022) explained: "Self-selection bias is very likely given that those who saw the recruitment flyers decided entirely for themselves whether they want to participate. Moreover, our snowball sampling method recruiting participants from social media platforms (eg: more female and young adult participants in our sample) also limits the sample

representativeness and result generalisability" (p272).

The trajectories were plotted over six months only. The researchers accepted that the term "chronicity" is not really appropriate in this case, but it was used "to stay consistent with the literature... and to distinguish this trajectory from the recovery trajectory..." (Chen et al 2022 p273).

PTSD among residents, area workers, and passersby (as well as rescue and clean-up workers) after "9/11" (11th September 2001 World Trade Centre (WTC) terrorist attack) has been well studied.

The "WTC Health Registry" is a cohort of over 71 000 individuals directly exposed to "9/11", who were surveyed in 2003-4 (Wave 1), 2006-7 (Wave 2), 2011-12 (Wave 3), 2015 (Wave 4), and 2020 (Wave 5) [2]. Welch et al (2016) reported the data up to 2012.

PTSD was measured by the PTSD Checklist (PCL). It has seventeen items related to three key symptom clusters - re-experiencing the event, avoidance of reminders and triggers of the event/experience, and hyper-arousal - covering the last thirty days. Each item is rated as 1 ("not at all") to 5 ("extremely"). This gives a range of total scores from 17 to 85, and 44 is the cut-off point for "probable PTSD".

Welch et al (2016) were interested in the trajectory of PTSD symptoms over the follow-up period. Six trajectory groups emerged from the analysis:

1. "Low-stable" - Around half of all respondents, with an average PCL score in the 20s throughout the follow-up period.

2. "Moderate-stable" - An unchanged average score in the 30s (around one-quarter of respondents).

3. "Moderate-increasing" - Less than 10% of respondents showed worsening symptoms that just crossed the threshold for PTSD with time. Associated with 9/11-related job loss, low social integration, and unmet mental health needs.

4. "High-stable" - An average PCL score in the 50s, which remained unchanged over time (about 5% of people).

5. "High-decreasing" - Around 5% of respondents improved with time (from PTSD to below diagnostic threshold).

[2] Details at https://www.nyc.gov/site/911health/about/wtc-health-registry.page.

6. "Very-high-stable" - 2% of the sample had the highest PCL scores at all three waves. These individuals were more likely to have experienced 9/11-related job loss, 9/11-related bereavement, sustained injury themselves, felt a threat of injury/death at the time, and witnessed three or more 9/11 events (eg: see plane(s) hit WTC; see people falling or jumping from WTC; see buildings collapse). Also like types 3 and 4 low social integration, and unmet mental health needs.

Welch et al (2016) concluded: "Our findings indicated that 8.0% of area residents/workers enrolled in the Registry were following a trajectory consistent with chronic PTSD that had persisted over 8 to 9 years [types 4 and 6], whereas another 8.2% were following a trajectory indicating delayed-onset PTSD symptoms [type 3]" (p165).

1.4. REFERENCES

APA (2000) Diagnostic and Statistical Manual of Mental Disorders (4th edition, text revision) (DSM-IV-TR) Washington DC: American Psychiatric Association

APA (2013) Diagnostic and Statistical Manual of Mental Disorders (5th edition) (DSM-5) Washington DC: American Psychiatric Association

Breslau, N & Davis, G.C (1987) Post-traumatic stress disorder - the stressor criterion The Journal of Nervous and Mental Disease 175, 255-264

Chen, S et al (2022) Psychopathology and resilience following strict covid-19 lockdowns in Hubei, China: Examining person- and context-level predictors for long trajectories American Psychologist 77, 2, 262-275

Hamzelou, J (2022) Rethinking trauma New Scientist 2nd April, 46-49

Sampson, L et al (2022) Trauma, post-traumatic stress disorder, and treatment among middle-aged and older women in the Nurses Health Study II American Journal of Geriatric Psychiatry 30, 5, 588-602

van den Berg, L.J.M et al (2017) A new perspective on PTSD symptoms after traumatic vs stressful life events and the role of gender European Journal of Psychotraumatology 8, 1, 1380470

Welch, A.E et al (2016) Trajectories of PTSD among Lower Manhattan residents and area workers following the 2001 World Trade Centre disaster, 2003-2012 Journal of Traumatic Stress 29, April, 158-166

2. THERAPY APPS

2.1. OVERVIEW

With the shortage of face-to-face therapy opportunities as demand is greater than supply, as it were, "[T]ech companies have stepped in to fill the gap, and people wanting fast support can now use an app rather than having to wait feeling frustrated or demoralised. In many ways this is good, but there are reasons to be cautious about the boom in easy access therapy" (Morgan 2022 p25).

Many such apps are based on cognitive-behavioural therapy (CBT), and include exercises to help with thoughts and behaviours. The limited research evaluation, however, has not been positive (Morgan 2022) (appendix 2A).

A separate issue relates to the data collected by the apps and privacy. Parker et al (2019), for example, found that nearly half of sixty-one prominent English-language mental apps available in 2018 "did not have a privacy policy to inform users about how and when personal information would be collected and retained or shared with third parties, despite this being a standard recommendation of privacy regulations" (p198). Furthermore, the apps frequently asked for "dangerous" permissions (eg: to access contact lists and text messages), and even encouraged users to share their own data with an online community.

Morgan (2022) offered this comment about app "Bloom", which "states that it may partner with third parties to share information in order to provide or improve services. This may seem like inoffensive language when you want to get started on trying not to feel bad. Then you seen Bloom advertising on huge billboards with statements like: 'To all 8k users who felt tired. We're here to wake you up'. Tech companies analysing our private thoughts and plastering them up on the streets feels like a wake-up call" (p25).

2.2. MINDFULNESS APPS

Mindfulness involves two key components - "the self-regulation of attention so that thoughts, feelings and sensations are observed and attended to in the present-moment and an orientation to experience characterised by acceptance, non-judgment and non-reactivity" (Noone and Hogan 2018 p2). Positive benefits for cognitive functioning, executive control, and self-regulation of thinking and decision-making have been reported in various studies (Noone and Hogan 2018).

Mindfulness-based apps have appeared in recent years. Noone and Hogan (2018) applied the randomised controlled trial methodology to study this subject among university students. Seventy-one students at the National University of Ireland Galway were recruited to the study using the "Headspace" application. Those participants randomly allocated to the intervention group used the app for thirty 10-minute meditation sessions over six weeks, while the active-control group (or sham meditation) was encouraged to close their eyes and relax on a regular basis. Three main measures of cognition were taken at baseline and at follow-up (eg: critical thinking; working memory).

Both groups showed an increase in mindfulness, while there was no significant differences on the cognitive measures between them.

Two previous studies (Bostock and Steptoe 2013; Howells et al 2016) using "Headspace" had found positive effects on well-being. But Noone and Hogan (2018) pointed out that "these effects were relatively small and resulted from comparisons with a wait-list control group [in Howells et al 2016] and a poorly matched active control group [in Bostock and Steptoe 2013]... Therefore conclusions in these studies regarding the efficacy of Headspace appear to be premature" (pp13-14).

Noone and Hogan's (2018) study involved more meditation sessions than the two other studies, with a longer follow-up period, had an active-control group "in order to avoid the artificial inflation of effect sizes observed in the application of wait-list control groups", and "socially desirable reporting of intervention adherence was avoided by measuring the number of intervention sessions engaged in by the participants directly through the Headspace application rather than by self-report" (p14).

But the study had weaknesses including the nature of meditation material. The "Headspace" app used different

and progressive material, while the sham meditation group received the same advice every time. An active-control group listening to audiobooks, say, "would allow the disentanglement of effects due to specific mindfulness instruction, and effects due to sham mindfulness instruction, from the effects of a listening activity which does not carry the expectation of relaxation" (Noone and Hogan 2018 p14).

The operationalisation of cognition used standardised tests, but they were not specific to this study and its aims. While better measures of mindfulness could help in future research (Noone and Hogan 2018).

The sample was student volunteers, who received "study credit, a free subscription to Headspace and refreshments" (Noone and Hogan 2018 p14) for participation.

Noone and Hogan (2018) ended thus: "No evidence was found to suggest that engaging in guided mindfulness practice for 6 weeks, using the online intervention method applied in this study, improves critical thinking performance" (p15).

2.3. HELP-SEEKING

Barriers to help-seeking behaviour for mental health problems include stigma, and the attitudes of family and friends. Such barriers are "more highly represented among low socio-economic groups further perpetuating a cycle of disadvantage. Structural and societal factors can further limit access and require practical solutions to empower help-seeking behaviour" (Evans-Lacko et al 2022 p207). Providing interventions digitally may be one means to overcome such barriers.

In a review, Evans-Lacko et al (2022) found thirty-five randomised controlled trials on digital mental health interventions to improve help-seeking (table 2.1) (published before April 2021). The majority of interventions had an educational component.

Around half of studies showed an improvement in at least one help-seeking outcome in the intervention groups. The outcome was more likely to be the intention to seek help than actual behaviour. Personal involvement/active interventions (eg: sharing own experiences) had more success than passive ones.

Target Group	Intervention
Adolescent mothers with depression	Text messages with parenting tips, and resources on identifying depression symptoms and treatment options
Young people with depression, anxiety and suicidal thoughts	Website with personal vignettes from young people
Workers with stress	Multi-media programme with tailored content on stress management help, and early identification of treatment for depression and anxiety

(Source: table 1 Evans-Lacko et al 2022)

Table 2.1 - Three examples of digital interventions.

2.4. APPENDIX 2A - META-REVIEW

Smartphone apps for mental health have been available since early in the 2010s, while pre-smartphone mobile phone technology (eg: text message-based interventions) have been used before that (Goldberg et al 2022). "Today thousands of mental health apps are available for immediate download. The landscape has expanded to such an extent that professional societies have created evaluation frameworks and healthcare regulators around the world are exploring new ways to categorise and regulate this burgeoning space" (Goldberg et al 2022 p2).

There have been plenty of studies on the apps, reporting varied outcomes: from "inconsistent results" to "proven effectiveness", and from "cannot be recommended" to "cost-effective" (Goldberg et al 2022).

Lecomte et al (2020) performed a meta-review of seven meta-analyses, and found a positive conclusion for apps for depression and anxiety. Goldberg et al (2022) criticised this meta-review for "the inclusion of both randomised and non-randomised studies, the latter of which cannot be used to draw causal inferences" (p3), for the combination of active and inactive control group data, and for not including text message-based interventions.

Goldberg et al (2022) sought to overcome these limitations in their meta-review. Meta-analyses were eligible for inclusion if they included at least four randomised controlled trials. The literature search produced fourteen meta-analyses, published between 2015

and 2020, covering 145 randomised controlled trials.

The synthesis of the data produced the following main conclusions:

a) Anxiety - Compared to inactive controls, smartphone apps had small positive benefits, but there was no difference when compared to active controls.

b) Depression - Similar to anxiety.

c) Smoking cessation - Evidence of small positive effect.

d) Other - Small benefits for stress reduction, and improving quality of life compared to inactive controls.

Eight of 34 data analyses produced "high suggestive evidence" of a benefit.

Overall, Goldberg et al's (2022) conclusion was that "we failed to find convincing evidence in support of any mobile phone-based intervention on any outcome" (p14). This was, in the main, due to methodological issues in the studies, like small sample sizes, variations in the quality of the apps, and dependence on self-reported outcome measures.

Smoking cessation was the most common behaviour studied, and nearly 90% of the studies came from North America, Europe, and Australia/New Zealand. The most consistent risk was lack of blinding of participants, and researchers. Only one study tested for moderators (eg: message frequency; message type), and one meta-analysis evaluated adverse events (which tended not to be reported by studies).

Despite these limitations, the authors accepted that at a population level, "even small effects may meaningfully impact public health" (Goldberg et al 2022 p14). So, "mobile phone-based interventions may hold promise for modestly reducing common psychological symptoms (eg: depression, anxiety)... Text message-based interventions appear particularly effective in supporting smoking cessation" (Goldberg et al 2022 p15).

2.5. REFERENCES

Bostock, S.K & Steptoe, A (2013) Can finding headspace reduce work stress? A randomised controlled workplace trial of mindfulness meditation app Psychosomatic Medicine 75, A36-A37

Evans-Lacko, S et al (2022) The impact of digital interventions on help-seeking behaviour for mental health problems: A systematic literature review Current Opinion in Psychiatry 35, 207-218

Goldberg, S.B et al (2022) Mobile phone-based interventions for mental health: A systematic meta-review of 14 meta-analyses of randomised controlled trials PLoS Digital Health 1, 1, e0000002 (Freely available at https://journals.plos.org/digitalhealth/article?id=10.1371/journal.pdig.0000002)

Howells, A et al (2016) Putting the "app" on happiness: A randomised controlled trial of a smartphone-based mindfulness intervention to enhance well-being Journal of Happiness Studies 17, 163-185

Lecomte, T et al (2020) Mobile apps for mental health issues: Meta-review of meta-analyses JMIR mHealth and uHealth 8, 5, e17458

Morgan, E (2022) Smart therapy? New Scientist 9th April, p25

Noone, C & Hogan, M.J (2018) A randomised active-controlled trial to examine the effects of an online mindfulness intervention on executive control, critical thinking and key thinking dispositions in a university student sample BMC Psychology 6: 13

Parker, L et al (2019) How private is your mental health app data? An empirical study of mental health app privacy policies and practices International Journal of Law and Psychiatry 64, 198-204

3. SILENCE

3.1. BENEFITS OF SILENCE

In a noisy world, silence can have health benefits. Kagge (2017) has called silence "the new luxury" (quoted in Sukel 2022).

While noise is known to have negative health effects from studies, "silence was found to lower the diastolic blood pressure, heart rate, and breathing rate and to decrease cortisol levels" (Pfeifer and Wittmann 2020 pp1-2).

Near-silence or periods in nature are also beneficial. For example, Bratman et al (2015) found that a ninety-minute walk in nature reduced rumination, but not an equivalent walk in an urban setting.

Pfeifer and Wittmann (2020) outlined some of their research group's studies on silence in different settings:

i) "Just think" (Pfeifer et al 2019b) - Sixty-four students in Germany were placed alone in a silent room [3] for 6 minutes and thirty seconds with the instruction: "Please spend the following time occupying yourself with your own thoughts and please stay seated and awake" (Pfeifer and Wittmann 2020 p3). Afterwards, participants reported being more relaxed (mean 76.5 vs 57.3 out of 100 [4]), and in a better mood than before.

ii) Depth relaxation (indoors) (Pfeifer et al 2016) - This study involved a period of relaxation training using music beforehand (Depth Relaxation Music Therapy/Hypnomusictherapy; DRMT/HMT). Sixty German students were placed individually in an indoor room, and relaxation was significantly increased after fifteen

[3] Pfeifer et al (2019b) described the room used: "The room was chosen due to its neutral character. In other words, we used a room with very plain interiors to avoid any irritation or sensation. There were no plants, posters, photographs, or paintings on the walls — just plain white walls. The seats and the table were of rustic appearance (with no pillows or varying colours). Study participants were asked to seat themselves with their back to the window. The subjects' view was directed towards the door" (p347).

[4] This was a significant difference ($p<0.00001$).

minutes of training and six and a half minutes alone in silence compared to a control condition (a group discussion before the silence).

iii) Depth relaxation (outdoors) (Pfeifer et al 2019a) - This was a replication of the previous study, but the period of silence was outdoors in a city garden. The same results were found with 84 students from a German university.

iv) "Pure" silence ((Pfeifer et al 2020) - Forty-six German students experienced 6½ minutes of silence in a group in a university seminar room and in a city public garden. The study had a repeated measures design with one week between each session. The order was randomised. The vast majority of participants were female (n = 42).

"The period of silence led to a significant increase in relaxation in both conditions (city garden and university seminar room) (figure 3.1). However, in the natural setting of the city garden, students experienced less boredom during the 6:30 min of silence than in the indoor condition. In the outdoor condition, the sense of being present was enhanced (experiencing the moment), while thoughts about the past (memories) were reduced. The more relaxed the students were after the silence indoors, the less intensely they were aware of time" (Pfeifer and Wittmann 2020 p5).

But Pfeifer et al (2020) admitted: "The silences were not 'absolute' or 'total' silences under laboratory conditions. The silence outdoors in the city garden was occasionally interrupted by natural sounds; in the seminar room, it was occasionally interrupted by participants coughing or clearing their throats" (p87).

Overall, relaxation increased after the silence compared to beforehand (and to control conditions).

There are a number of methodological points from these studies, including:

a) Relaxation was self-reported and measured by a visual analogue scale (VAS) of 100 mm, and participants placed themselves on the line (from "not at all relaxed" to "extremely relaxed").

b) The measures were completed just before the silence and straight afterwards.

c) The participants were not told the length of time

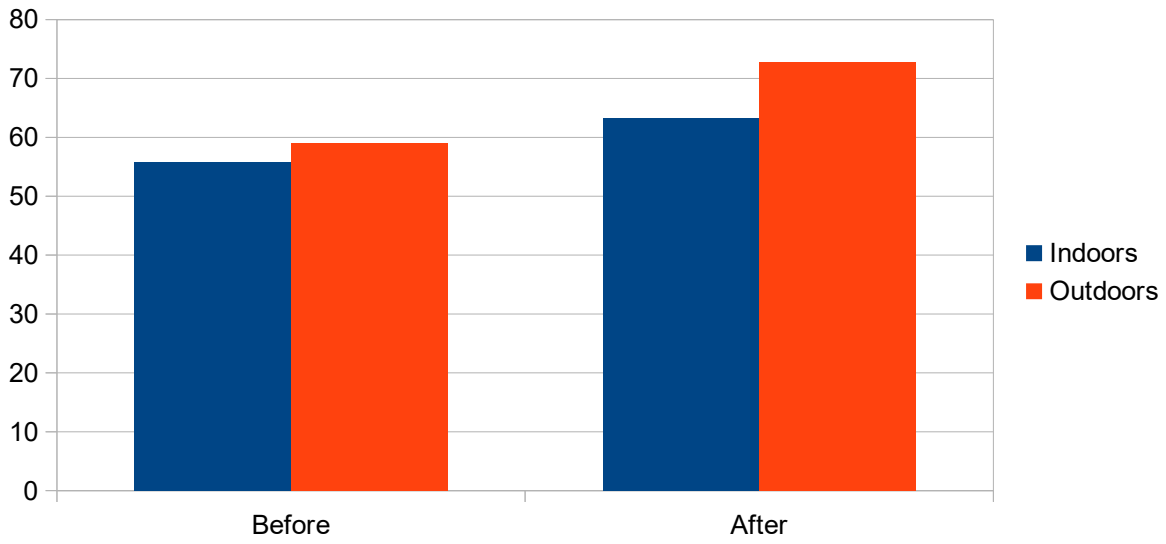


Figure 3.1 - Mean ratings of relaxation (out of 100) before and after silence in Pfeifer et al (2020).

of waiting. Pfeifer et al (2019b) commented: "This creates a situation of temporal uncertainty, which is typically experienced as irritating. If you know that a train will be delayed by 10 min, this information gives certainty, which is experienced as positive. If you do not know when the train will come, you feel more irritated. In the study by Wilson et al (2014)..., subjects were informed precisely or approximately about the duration of waiting (10–15 min). Nevertheless, those individuals on average felt more irritated by the thinking situation than our students did" (p350).

d) The period of silence was quite short.

e) The samples were undergraduates and postgraduates at one particular university in Germany.

f) Some studies had control conditions, but others did not.

g) Other measures that relaxation were also taken. For example, perception of time was underestimated when relaxed (ie: time felt shorter than it actually was), and boredom. Pfeifer et al (2019b) found that boredom was "hardly felt" (Pfeifer and Wittmann 2020 p3).

h) No qualitative data were collected.

3.2. FLOATATION TANKS

Short periods in floatation tanks are gaining in popularity (Sukel 2022). "Floatation-Reduced Environmental Stimulation Therapy" (F-REST), to use the proper name, involves "the act of floating supine in a pool of water super-saturated with magnesium sulfate (Epsom salt). The float experience is calibrated so that visual and auditory stimulation is minimised, the temperature of the air and water is thermo-neutral (ie: matched to skin temperature), and the proprioceptive effects of gravity on muscle tension are significantly attenuated by the saltwater (which is calibrated to a specific gravity of 1.25 to allow for effortless floating, where approximately half of the body is floating above the surface of the water and the other half is submerged under the water)" (Flux et al 2022 p2).

Floatation tanks appeared in the 1950s, subsequently developed by John C Lilly and Glenn Parry (Flux et al 2022). Claims about the benefits emerged immediately.

Van Dierendonck and Nijenhuis (2005) collected twenty-seven studies from 1983 to 2002 in their meta-analysis. Positive effects included lower blood pressure, and stress, and increased relaxation and subjective well-being (Flux et al 2022).

One problem with many of the studies is a lack of control condition, while another is no baseline or pre-floatation measures. Concerning the former, lying on a bed has been used (eg: O'Leary and Heilbronner 1990).

Flux et al (2022) is an example of recent research measuring physiological changes with F-REST. The participants were 37 adults with anxiety disorders and twenty without, recruited in the USA. The control condition involved watching a nature documentary for ninety minutes compared to F-REST for the same period. The participants completed both conditions (in randomised order) with one week in-between. Wireless and waterproof sensors measured blood pressure and heart rate during the conditions, and there was a self-report questionnaire after each condition.

Compared to the control condition, blood pressure and heart rate were significantly lowered by the F-REST. There was no difference between the anxious and non-anxious participants. Most of the benefits occurred in the first fifteen minutes of the floatation. Self-reported serenity increased and anxiety reduced in the F-REST condition.

Note: "Body position between the two conditions was not equivalent, with participants lying supine in the

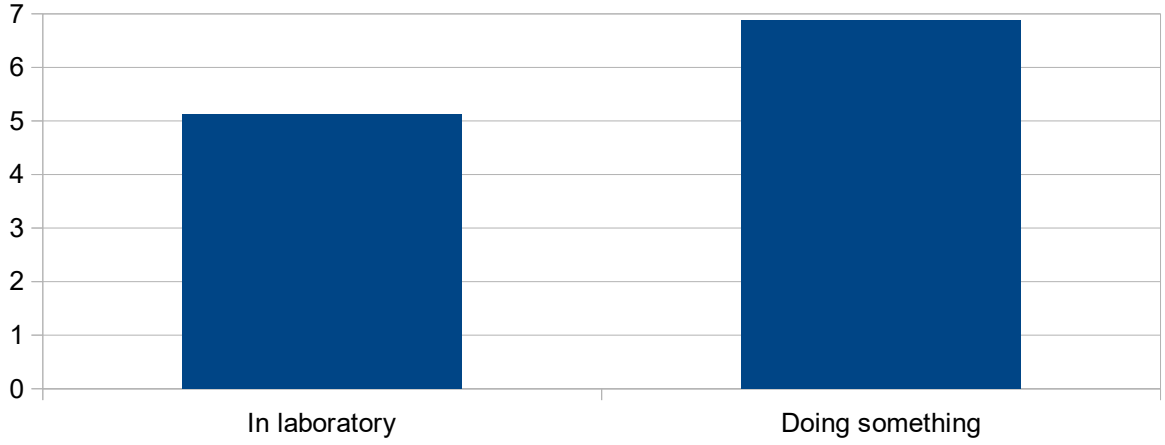
float condition, but seated upright while viewing the film" (Flux et al 2022 p13). Blood pressure may vary in different positions. "Prior studies directly comparing blood pressure while supine versus sitting have found contradictory results, with some studies showing lower blood pressure while supine... and other studies actually showing higher
blood pressure while supine" (Flux et al 2022 p13).

But the silence does not have to be extreme, as in an anechoic chamber.

3.3. AVERSIVE SILENCE?

Wanting to be silent is important in order to gain any health benefits (Sukel 2022). For example, Wilson et al (2014) placed students in an unadorned room alone with no belongings for 6-15 minute-periods, and told them to entertain themselves. In other words, to sit in enforced silence. Around half of the respondents reported afterwards not enjoying the experience [5].

When students were given the option to read, listen to music, or surf the Web, enjoyment ratings increased. In summary, "most people do not enjoy 'just thinking' and clearly prefer having something else to do" (Wilson et al 2014 p76) (figure 3.2).



(Data from table 1 p76 Wilson et al 2014)

Figure 3.2 - Mean rating of enjoyment (out of 9).

Study 10 added the option of a mild electric shock

[5] In total there were eleven studies with over 800 participants, all students except one study of around one hundred community adults.

that the students could administer to themselves during the fifteen-minute "just thinking" period (n = 55 students). The majority of male participants administered at least one shock (around two-thirds), and a minority of females (less than one-fifth). So, "what is striking is that simply being alone with their own thoughts for 15 min was apparently so aversive that it drove many participants to self-administer an electric shock that they had earlier said they would pay to avoid" (Wilson et al 2014 p76).

Fox et al (2014) reanalysed Wilson et al's (2014) data and found no support for the negative reactions to "just thinking" (Pfeifer and Wittmann 2020). Fox et al (2014) argued that "participants overall did not show negative reactions, but that the distribution of responses was quite balanced" (Pfeifer et al 2019b p349).

Pfeifer et al (2019b) did not find support for Wilson et al (2014) [6], nor Jokic et al (2018). This latter study involved 82 students in Greece, who were individually placed in "a very basic closed room with a desk and a chair" (Pfeifer and Wittman 2020 p2) for seven and a half minutes. The participants did not know the length of time, and were asked afterwards to estimate the time period. Time judgment was linked to mood. More relaxed individuals felt the waiting time was shorter while aroused individuals felt the time passed slowly.

3.4. REFERENCES

Bratman, G.N (2015) Nature experience reduces rumination and sub-genual cortex activation Proceedings of the National Academy of Sciences, USA 112, 8567-8572

Flux, M.C et al (2022) Exploring the acute cardiovascular effects of floatation-REST Frontiers in Neuroscience 16, 995594

Fox, K.C.R et al (2014) Is thinking really aversive? A commentary on Wilson et al's "Just think: The challenges of the disengaged mind" Frontiers in Psychology 5, 1427

Jokic, T et al (2018) Individual differences in self-rated impulsivity modulate the estimation of time in a real waiting situation Timing and Time Perception 6, 1, 71-89

[6] There were some methodological differences between Pfeifer et al (2019b) and Wilson et al (2014), including that the former recruited students on education courses, and the vast majority were women. Pfeifer et al (2019b) noted: "It can be argued that a certain type of students chooses this type of study programme. Additionally, once enrolled in the study programme of the university, the curriculum emphasises emotional self-awareness and includes lectures and seminars covering this area. Typically, these particular study programmes have a majority of women enrolled and this is reflected in our sample. Further studies could assess whether women are more comfortable with waiting situations" (p350). Also this study took place in Germany (vs the USA), and the length of waiting was different.

Kagge, E (2017) Silence: In the Age of Noise New York: Pantheon Books

O'Leary, D.S & Heilbronner, R.I (1990) Floatation REST and information processing: A reaction time study. In Suedfeld, P et al (eds) Restricted Environmental Stimulation: Theoretical and Empirical Developments in Floatation REST New York: Springer-Verlag

Pfeifer, E & Wittmann, M (2020) Waiting, thinking, and feeling: Variations in the perception of time during silence Frontiers in Psychology 11, 602

Pfeifer, E et al (2016) Changes in states of consciousness during a period of silence after a session of depth relaxation music therapy (DRMT) Music and Medicine 8, 4, 180-186

Pfeifer, E et al (2019a) Enhanced relaxation in students after combined depth relaxation music therapy and silence in a natural setting The Arts in Psychotherapy 63, 68-76

Pfeifer, E et al (2019b) "Just think" - Students feel significantly more relaxed, less aroused, and in a better mood after a period of silence alone in a room Psych 1, 1, 343-352

Pfeifer, E et al (2020) Increased relaxation and present orientation after a period of silence in a natural surrounding Nordic Journal of Music Therapy 29, 1, 75-92

Sukel, K (2022) Shhhhh New Scientist 13th August, 38-41

Van Dierendonck, D & Nijenhuis, J.T.E (2005) Floatation restricted environmental stimulation therapy (REST) as a stress-management tool: A meta-analysis Psychology and Health 20, 3, 405-412

Wilson, T.D et al (2014) Just think: The challenges of the disengaged mind Science 345, 75-77

4. DISSOCIATIVE SEIZURES AND RECRUITMENT OF PARTICIPANTS

"Dissociative seizures" (or psychogenic non-epileptic seizures) are relative infrequent, and so it is difficult to study them in detail. Put simply, individuals show the outward signs of seizures, but there is not the underlying physical changes in brainwaves, say, of epilepsy.

The "Cognitive Behavioural Therapy vs Standardised Medical Care for Adults with Dissociative Non-Epileptic Seizures" (CODES) trial was set up in the UK, and it recruited participants between 2014 and 2017. It was possible to recruit 698 participants via twenty-seven NHS specialist neurology/epilepsy clinics.

Goldstein et al (2019) concentrated on the demographics of the recruited individuals. Around three-quarters were female, and over half overall lived in areas classed as high social deprivation.

The participants had sought medical help, and "were those willing to be involved in a potentially lengthy study that might have led them to receive psychological therapy" (Goldstein et al 2019 p2190). These factors produce a self-selection bias. Potential bias was also produced by the strict inclusion and exclusion criteria of the CODES trial.

Originally 901 individuals were classed as eligible for the trial, and 203 were removed for various reasons:

i) Failed the inclusion criteria (n = 33) - eg: intellectual or learning disabilities; no dissociative seizure in previous two months; current alcohol or drug dependence diagnosis.

ii) Unable to participate (n = 23) - eg: insufficient command of English; unable to give informed consent; unwilling to complete three-month seizure diary.

iii) Eligible but refused to participate (n = 85).

iv) Eligible, but could not be contacted by the researchers (n = 61).

v) Other reason (n = 1).

REFERENCE

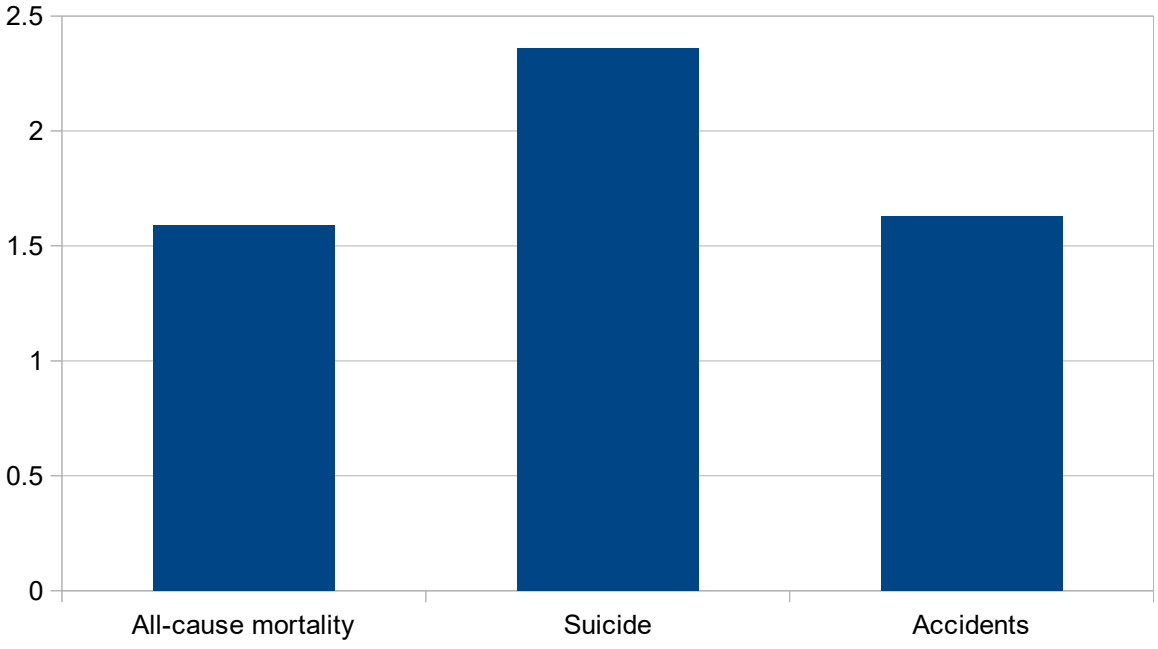
Goldstein, L.H et al (2019) Characteristics of 698 patients with dissociative seizures: A UK multi-centre study Epilepsia 60, 2182-2193

5. MORTALITY AND PSYCHOTIC DEPRESSION

Depression has many negative consequences for a sufferer, but psychotic symptoms as well "add to the total burden of disease" (Paljarvi et al 2023 p37). This is "psychotic depression", and it is associated with poorer treatment outcomes, and higher mortality, for instance, than non-psychotic depression (Paljarvi et al 2023).

Long-term data are available on mortality in psychotic depression from Finland. Over 19 000 adults with a first diagnosis of psychotic depression and over 90 000 individuals with non-psychotic depression were followed between 2000 and 2018 (Paljarvi et al 2023).

During the follow-up period, 11% of the psychotic depression group had died and 7% of the other group. The former group had a higher risk of all-cause mortality, suicide, and fatal accidents in the five years following diagnosis compared to the non-psychotic depression group (figure 5.1).



(Data from table 3 p41 Paljarvi et al 2023)

Figure 5.1 - Adjusted risk of death in psychotic depression group in five years after diagnosis (where 1.00 = non-psychotic depression group risk).

There are three key limitations with this study:

i) "Psychotic symptoms are known to be poorly identified in clinical contexts and thus also psychotic depression is under-diagnosed. Thus,...[the] estimates are likely under-estimates because patients with psychotic depression are, to some unknown extent, misclassified as having severe non-psychotic depression" (Paljarvi et al 2023 p42).

ii) The classification into groups was based on first (or index) diagnosis, and did not account for subsequent changes in diagnosis, and/or in risk status.

iii) There were potential confounders that were not included (eg: unemployment; living alone) because of lack of information. This lack of information also meant it was not possible to know if the individual had psychotic symptoms at the time of their death.

The key strengths of this research included the use of official data which are detailed in Finland (eg: hospital discharge register; death register), and the ICD-10 diagnostic criteria. Also a large sample, and control in the analysis for potential confounders (eg: co-morbidities; age; history of self-harm).

REFERENCE

Paljarvi, T et al (2023) Mortality in psychotic depression: 18-year follow-up study British Journal of Psychiatry 222, 37-43

6. SEROTONIN AND DEPRESSION

Referring to anti-depressants in part, The leader (2023) stated: "The unsettling conclusion is that, although the drugs work for many, we don't know why" (p5). This view sums up a change in the understanding of depression, and biochemical theories, in particular, and the drugs used in treatment.

Moncrieff et al (2022) began: "The idea that depression is the result of abnormalities in brain chemicals, particularly serotonin (5-hydroxytryptamine or 5-HT), has been influential for decades, and provides an important justification for the use of anti-depressants" (p1) (appendix 6A. The idea of lowered serotonin and depression appeared in the 1960s (Coppen 1967). It is generally accepted by the public, and by many general practitioners today under the heading of depression as a product of a "chemical imbalance". But this view has been criticised (eg: Healy 2015).

Moncrieff et al (2022) undertook an "umbrella" review of the evidence on lowered serotonin and depression. This covered systematic reviews, meta-analyses, and large dataset analyses, and seventeen relevant studies were found. Six criteria were used to assess the methodological quality of the studies:

i) Original data analysed by authors of meta-analysis.

ii) Control of confounder of anti-depressant used.

iii) Outcome measure pre-specified (ie: before data analysis).

iv) Heterogeneity of studies included in reviews addressed.

v) Risk of publication bias addressed.

vi) Sample size.

The methodology of assessing serotonin varied between studies, including:

a) Serotonin and its metabolite 5-hydroxyindoleacetic acid (5-HIAA) can be measured in blood, urine, and cerebrospinal fluid. It would be expected that individuals with depression would have lower levels of serotonin.

b) Serotonin receptors in the brain. Increased receptor activity would be expected among people with depression.

c) The activity of serotonin transporter protein (SERT), which transports serotonin out of the synapse. "Although changes in SERT may be a marker for other abnormalities, if depression is caused by low serotonin availability or activity, and if SERT is the origin of that deficit, then the amount or activity of SERT would be expected to be higher in people with depression compared to those without" (Moncrieff et al 2022 p10).

d) Experimentally reducing serotonin by, for example, trytophan depletion. Healthy volunteers are used to see if their mood is lowered using dietary means or chemicals to reduce serotonin levels.

e) Differences in the SERT gene (5-HTTPLR) and its expression.

Overall, Moncrieff et al (2022) stated, "there is no convincing evidence that depression is associated with, or caused by, lower serotonin concentrations or activity. Most studies found no evidence of reduced serotonin activity in people with depression compared to people without, and methods to reduce serotonin availability using tryptophan depletion do not consistently lower mood in volunteers" (p11).

Most of the studies were rated as "low quality" in terms of methodological rigour. The control and assessment of confounders were key issues (eg: impact of previous anti-depressant use on brain chemistry).

The researchers ended: "We suggest it is time to acknowledge that the serotonin theory of depression is not empirically substantiated" (p12).

Elsewhere, Carmine Pariante argued that depression should be seen as "a complex state that represents disturbances in multiple brain chemicals and neural circuits, with different aspects predominating in different people. That would explain why various treatments help some people, but not others" (quoted in Wilson 2023).

APPENDIX 6A - ESCITALOPRAM

Selective serotonin reuptake inhibitor (SSRI) anti-depressants can impact cognition through the effect upon

serotonin. Langley et al (2023) reported a study with a SSRI called escitalopram with sixty-six healthy volunteers for at least twenty-one days in Denmark. At baseline, various standardised cognitive tests were performed and then at the end of the study. Half the participants received the placebo.

The only change in cognition was the reduction in "reinforcement sensitivity" in the drug group. Reinforcement sensitivity refers to "the degree to which a participant is driven by their reinforcement history" (Langley et al 2023 p667). Put another way, individuals are less responsive to previous rewards and punishments. This was measured by a computer task involving trial and error learning from previous rewards and punishments (ie: positive and negative feedback) [7].

The researchers concluded that the finding "may reflect the blunting effect often reported by patients with neuropsychiatric disorders receiving chronic SSRI treatment" (Langley et al 2023 p669).

This study involved healthy volunteers given the anti-depressant, which raises ethical issues, while studies usually recruit individuals with depression taking the medication.

REFERENCES

Coppen, A (1967) The biochemistry of affective disorders British Journal of Psychiatry 113, 1237-1264

Healy, D (2015) Serotonin and depression BMJ 350: h1771

Langley et al (2023) Chronic escitalopram in healthy volunteers has specific effects on reinforcement sensitivity: A double-blind, placebo-controlled semi-randomised study Neuropsychopharmacology 48, 664-670

Moncrieff, J et al (2022) The serotonin theory of depression: A systematic umbrella review of the evidence Molecular Psychiatry (https://www.nature.com/articles/s41380-022-01661-0)

The leader (2023) Disentangling depression New Scientist 21st January, p5

Wilson, C (2023) Rethinking depression New Scientist 21st January, 38-41

[7] Participants shown two stimuli (different shapes and colours) and had to quickly choose the "optimal". They received feedback for their decision and had to learn the rule for the "optimal" choice. However, the rule could change during the trials.

7. EVERYDAY PARANOIA

7.1. TYPES OF PARANOID THOUGHT

Saalfeld et al (2018) stated clearly that the "ability to attribute intentions to others is a hallmark of human social cognition but is altered in paranoia" (p1).

Paranoia (which is "the unfounded belief that others are trying to hurt you"; Sukel 2023 p42) has traditionally been seen as a symptom of psychosis, but it may be that there is "a paranoia spectrum, and perhaps 1 in 6 of us may fall somewhere along it" (Sukel 2023 p42) [8].

Bebbington et al (2013) proposed a hierarchy of paranoid thoughts related to the spectrum (or continuum) with four sub-categories (ie: increasing severity of paranoia):

i) Interpersonal sensitivities - eg: item: "Do you often worry about being criticised or rejected in social situations?".

ii) Mistrust - eg: item: "Do you find it hard to be 'open' even with people you are close to?".

iii) Ideas of reference - eg: item: "Do you often detect hidden threats or insults in things people say or do?".

iv) Ideas of persecution - eg: item: "Have there been times you felt that a group of people was plotting to cause you serious harm or injury?".

Bebbington et al (2013) analysed data from over 8500 adults in the second "British National Psychiatric Morbidity Survey" in 2000. Each of the four sub-

[8] An alternative idea is "pronoia" (Goldner 1982), which is "the persistent, inaccurate belief that everyone is secretly conspiring to help you" (Sukel 2023 p44). There is little support in terms of evidence (Sukel 2023).

categories of paranoid thought was measured by four items.

Nearly 30% of respondents agreed with one of the items measuring interpersonal sensitivities, and mistrust, but much less for the other two sub-categories (table 7.1). The mean agreement was with 2.3 items.

Item	Sub-Category	Agree
Do you often have to keep an eye out to stop people from using you or hurting you?	Mistrust	28.1
Do you often worry about being criticised or rejected in social situations?	Interpersonal sensitivities	27.7
Do you believe that you're not as good, as smart, or as attractive as most other people?	Interpersonal sensitivities	25.4
Have there been times you felt that a group of people was plotting to cause you serious harm or injury?	Ideas of persecution	1.5
When you are out in public and see people talking, do you often feel that they are talking about you?	Ideas of reference	6.5

(Source: Bebbington et al 2013 table 1 p420)

Table 7.1 - Top three and bottom two items agreed by respondents (%).

Bebbington et al (2013) commented: "If we take the rates of endorsement of paranoid items in our study at face value, they suggest that paranoia is so common as to be almost normal. We are certainly obliged to make decisions to trust or to mistrust on a daily basis. The sheer frequency of paranoid beliefs implies that, to some degree, it can be adaptive in social situations. Individuals who are trusting, open and never suspicious of the intentions of others may end up as naive objects of exploitation (appendices 7A and 7B). When surrounded by strangers, it may be better to remain somewhat wary of their intentions until they are definitely seen to be favourable. However, too great a degree of suspiciousness may obstruct the development of the social relationships necessary for the maintenance of well-being. Thus, paranoia leads to isolation that may foster the retention of unusual ideas by removing the possibility of normalising exposure" (p425).

So, "mild paranoia, far from being undesirable, may

be an evolved condition that worked to the advantage of our hominin ancestors - and still benefits us today" (Sukel 2023 p42).

7.2. COGNITION

Reed et al (2020) proposed an explanation of paranoia based on the way the brain forms and updates beliefs in situations of uncertainty. This was shown in three different experiments.

Experiment 1

This experiment recruited sixteen individuals with a diagnosis of schizophrenia or mood disorder (conditions associated with paranoia) and eighteen "healthy controls" in the greater New Haven area of the USA. On a computer screen, selections of cards from three packs were presented and participants had to choose the winning pack on each trial. The participants were not told the rule that determined the winner, and this changed sometimes during the trial (figure 7.1). After each trial, feedback was given as correct or not. The probability of winning was varied. "Thus, the task was designed to elicit expected uncertainty (probabilistic reward associations) and unexpected uncertainty (reversal events), requiring participants to distinguish probabilistic losses from change in the underlying deck [pack] values" (Reed et al 2020 p5). Success involved flexibility in the strategy used to pick a pack. After performing multiple trials, the participants completed various questionnaire about mental health.

PACK A	PACK B	PACK C
Ace of hearts	5 diamonds	3 clubs
Ace of clubs	7 hearts	4 spades
3 diamonds	Ace of diamonds	10 diamonds
2 spades	6 hearts	King of diamonds
8 clubs	4 spades	6 clubs

- Winner is "Pack A" because more Aces. This is rule in first few trials, then it changes without notice to least number of Aces is winner (reverse learning paradigm) or most diamonds in a pack.

Figure 7.1 - Simplified hypothetical example of task used by Reed et al (2020).

Individuals scoring higher on measure of paranoia

were less able to adapt to changing rules and probabilities of winning.

Experiment 2

The participants in this experiment were 332 US adults recruited online via Amazon Mechanical Turk. The task was similar to Experiment 1 with the probabilities of winning varied unexpectedly. A replication of the results of Experiment 1 was found.

Experiment 3

This experiment involved rats performing an adapted version of the task from the previous experiments, who were given methamphetamine or a placebo. The drug was used to induce paranoia. Rats given methamphetamine showed behaviour similar to "high paranoia" humans in the previous experiments.

Overall, the paranoid individuals expected the rules to change more often about the winning pack and this influenced their decisions rather than actual experience. They are "constantly expecting change but never learning appropriately from it" (Reed et al 2020 p27).

Reed et al (2020) described a continuum in relation to learning from past experience versus expectations in a situation of uncertainty: optimal learning - diminished feedback sensitivity (low paranoia scorers) - complete dissociation from experienced feedback (high paranoia scorers). "In summary, a strong belief in the volatility of the world necessitates hypervigilance and a facility with change. However, in paranoia, that belief in the volatility of the world is itself resistant to change, making it difficult to reassure, teach, or change the minds of people who are paranoid. They remain 'on guard', adhering to expectations over evidence" (Reed et al 2020 p29).

7.3. PERCEIVED SOCIAL RANK AND PARANOIA

Saalfeld et al (2018) distinguished between "paranoid attributions (the attribution of harmful intent, which may or may not be accurate), paranoid ideation (the extent of paranoid thinking, which may include accurate attributions of intent but which is

known to increasingly correlate with over-estimate of social threat as intensity increases) and paranoid delusions, where delusions have a clear persecutory theme" (p2). An important variable is lower perceived social rank compared to others, which predicts paranoid ideation.

This has been studied experimentally. For example, Freeman et al (2014), using a virtual reality environment, manipulated the height of avatars to represent social rank, and found that "increased paranoia when participants interacted with taller virtual avatars" (Saalfeld et al 2018 p2). There are studies, however, that do not find such a relationship (eg: Ascone et al 2017) (Saalfeld et al 2018).

Experimental games like the "Dictator Game" have been used in studies. Saalfeld et al (2018) explained: "The Dictator Game is a two-player game, where one individual (the 'dictator') decides how to split an endowment of real money that the partner (the 'receiver') must accept. This task is useful for identifying paranoid attributions because the motives underpinning dictator decisions in the task are ambiguous: selfish dictators might be motivated to earn more money for themselves (self-interest) or by a desire to deny the partner of any money (harmful intent). This paradigm allows a measure of the tendency to infer harmful intent during a social interaction in which the participant is directly involved" (p2).

Raihani and Bell (2017), for instance, found a relationship between paranoia and the attribution of harmful intent not selfishness to the "dictator".

Saalfeld et al (2018) added the variables of social rank, and ingroup/outgroup to their study (with over 2000 participants recruited via Amazon Mechanical Turk). Initially, participants completed a series of questionnaires, including the "Green et al Paranoid Thought Scales" (PTS) (Green et al 2008), and the "MacArthur Scale of Subjective Social Status" (Adler et al 2000). At a later date, the participants played the role of receiver in a Dictator Game. The conditions of the experiment varied the social rank of the dictator as higher, lower or equal to the receiver, and the political affiliation to make the dictator the same (ingroup) or different (outgroup). After each allocation, participants rated the dictator's motive as "desire to earn money" (self-interest) or "desire to reduce your bonus" (harmful intent) on two 100-point scales.

Harmful intent attribution was stronger when the dictator was unfair (ie: gave the receiver no money),

when they were higher social status, or an ingroup member. But "paranoid people did not show disproportionately strong harmful intent attributions when playing against higher status, or outgroup, dictators and instead showed harmful intent attributions that were higher overall..." (Saalfeld et al 2018 p6). Self-interest attributions were higher for unfair dictators, and paranoia had no effect.

This study has the following key limitations:

i) The Dictator Game was very different to face-to-face interactions, and involved a computer game and simple questions. This is the problem of the artificiality of "laboratory" experiments.

ii) The sample. "Amazon Mechanical Turk offers access to a diverse sample of participants that is more representative of the US general population than typical samples comprised of undergraduates, and produces results that are internally consistent and equivalent to those obtained under laboratory conditions or using benchmark national samples. Nevertheless, MTurk samples have reduced ethnic diversity than the general population, and we cannot generalise these findings from US respondents to other cultures. In terms of clinically relevant selection biases, MTurk participants report higher levels of social anxiety, although they are not more likely to report emotional dysregulation at clinically relevant levels than other general population samples" (Saalfeld et al 2018 p10).

iii) Selection bias - ie: volunteers.

7.4. APPENDIX 7A - GASLIGHTING

"Gaslighting" can be simply defined as "a type of psychological abuse that makes someone seem or feel 'crazy'... It functions in part by convincing victims that what they are experiencing is not real or important and then blames them for their experience" (Sweet 2022 p56) [9]. It is "a form of psychological manipulation in which one person undermines another person's reality. When carried out over a long period of time, the target can begin to doubt their own thoughts and memories" (Williams 2021 p41). It fits with the "surreality" of abusive relationships (Ferraro 2006 quoted in Sweet 2022)

[9] Barton and Whitehead (1969) are attributed by Sweet (2019) with the first use of gaslighting in reference to involuntary hospitalisation.

[10].

Stern (2007) described gaslighting as "a phenomenon of 'mutual participation' between 'gaslighter' (perpetrator) and 'gaslightee' (victim). She writes, 'The first step is to become aware of your own role in gaslighting, the ways in which your own behaviour, desires, and fantasies may be leading you to idealise your gaslighter and seek his approval'" (Sweet 2019 p853).

Stark (2019) distinguished two strands in the literature around gaslighting - one relates to the denial of the testimony of the "victim" and the wrong done to them ("epistemic gaslighting"), while the other is "described as a form of wrongful manipulation and, indeed, a form of emotional abuse" (p221) (tables 7.2 and 7.3).

- Epistemic: "James, a cisgender man, mispronouns Victoria, a trans woman colleague, repeatedly at a department function. Victoria relates this event to her colleague Susan. Susan, influenced by a stereotype of trans women as overly emotional, refuses to believe that James mispronouned Victoria, claiming that he would never do that and that Victoria misheard James because she is primed to detect mispronouning at every turn".

- Manipulative: "Norm, a close friend of Robin's, is always running late. Robin complains to Norm that this is disrespectful. Anxious to be 'in the right', Norm reflexively and vehemently denies this and avers that Robin is 'too sensitive'. Over time this dynamic continues and leads to arguing. When Robin persists, Norm ups the ante, saying things like, 'You really have a problem with time, don't you?'. In the end, Robin begins to believe that Norm might be right. She begins to doubt her perceptions and her standing to complain, thinking, 'What's the big deal if someone is late? Maybe I'm being too inflexible'" (Stark 2019 p222).

Table 7.2 - Examples of epistemic and manipulative gaslighting.

Focusing on "manipulative gaslighting", Stark (2019) described the differences to "disagreement", including that the gaslighter's judgments are unjustified, the gaslighter "sidesteps challenges to his judgment that

[10] "Coercive control" is a term that has been introduced into law in England and Wales, and Scotland (Stark and Hester 2019). A common if inexact proxy for coercive control is so-called 'psychological' abuse, usually defined to include a range of non-violent abusive behaviours, many of which, such as isolation and control tactics, are only indirectly related to individual psychology (Stark and Hester 2019 p79).

would expose it as unjustified... [and] displaces, that is, he attributes a flaw to the target to 'explain' her judgment and thereby prove it not credible" (p225).

Difference	Epistemic Gaslighting	Manipulative Gaslighting
The wrong of gaslighting	Degrading the claims of the individual	"being manipulated into losing confidence in oneself both as a knower and as a moral equal" (Stark 2019 p222)
Susceptibility to gaslighting	Prejudice based on social identity	Not necessarily based on social identity
Subject matter of gaslighting	An attack on the testimony	A response to the testimony
The role of power in gaslighting	Difference in social power	In terms of leverage: "A gaslighter... cannot undermine one's confidence in one's judgments unless one is in some way invested in what the manipulator believes" (Stark 2019 p223).
The role of intention in gaslighting	Unintentional	Intentional

Table 7.3 - Differences between epistemic and manipulative gaslighting (Stark 2019).

Stark (2019) developed the notion of "manipulative gaslighting" as a social phenomenon - ie: "the systematic denial of women's testimony about harms done to them by men, which is aimed at undermining those and other women" (p221) [11].

It is "a common means by which misogyny is enacted" (Stark 2019 p222). Misogyny is defined here (based on Manne 2017) as "a property of social systems wherein non-compliant women are subjected to various kinds of hostility, the purpose of which is to enforce certain patriarchal norms, in particular the demand that women, graciously and amenably, serve men" (Stark 2019 p227).

Practically, in cases of sexual harassment, say,

[11] An article in the "Scientific American" in 1908 explained the lack of female engineers in the USA as due to "women's comparative weakness, both bodily and mental" (quoted in Schwartz and Schlenoff 2020). The author (Karl Drews) discovered that in the recent US Census of the time some women had described themselves as boilermakers, and he was unbelieving. Schwartz and Schlenoff (2020) noted: "In today's terms, we would say the author is gaslighting the experiences of women engineers when he is not erasing them outright" (p37).

women's accusations against men are displaced/denied by a variety of means, including as a faulty or false memory of events, as lying or profiteering motives (eg: accusations against famous men), downplaying the harm by the perpetrator when other denial fails (eg: "I was only joking"), victim-blaming, and "himpathy" (Manne 2017) (Stark 2019). The latter is "when people have excessive sympathy toward male assailants and relatively little toward the assailants' female victims. [An]... example is Brock Turner, a white student athlete at Stanford who was convicted of sexually assaulting a young white woman behind a dumpster when she was unconscious. Turner was discovered in the act by two white men. So, there was no disputing the fact that he committed a serious harm against his victim and it was hard to argue that she had it coming given that she was unconscious. Yet despite the obviousness and gravity of the harm, Turner's father lamented that the conviction had ruined his son's appetite and deprived him of his happy-go-lucky demeanour. Moreover, the (white male) judge gave Turner an extremely light sentence, presumably due to Turner's golden-boy status. The trauma and devastation experienced by Turner's victim, known as Emily Doe, was largely ignored in public discourse about the case" (Staark 2019 p228).

The social phenomenon of "public gaslighting" "causes women to see themselves as inferior both in their ability to make sound judgments but also in their moral status" (Stark 2019 p231).

Also considering a wider social context, Sweet (2022) described 122 interviews in 2021 with volunteers who defined their experiences as "gaslighting". She stated: "I became most intrigued by the social contexts where we find gaslighting, and its relation to inequalities around gender, sexuality, class, ability and race. Unsurprisingly, gaslighting does not involve just one of these axes of identity - rather people experience gaslighting intersectionally, meaning that factors such as age, race, gender and sexuality all matter for the way people's realities are distorted, questioned or denied" (Sweet 2022 p57).

Sweet (2022) outlined four relationships or contexts where gaslighting occurs:

i) Domestic violence.

ii) Intimate partners who are not otherwise abusive.

iii) Parents and other family members - Around one-third of Sweet's (2022) interviewees described parents doing it.

iv) Institutional (eg: workplace).

The common characteristics in gaslighting include the creation of a power imbalance against the victim, denial or distortion of victim's claims, attack on their credibility, and isolation (Sweet 2022).

A survey by the "National Domestic Violence Hotline" in the USA in 2014 of 2500 female adult callers found that around three-quarters had experience gaslighting. The question used was, "Do you think your partner or ex-partner has ever deliberately done things to make you feel like you are going crazy or losing your mind?". Half of callers answered "yes" to a second question, "Has your partner or ex-partner ever threatened to report to authorities that you are 'crazy' to keep you from getting something you want or need" (Sweet 2019 p854).

Sweet (2019) had argued that "gaslighting occurs in power-laden intimate relationships, precisely because trust and coercive interpersonal strategies bind the victim to the perpetrator" (p870) [12]. She reported interviews with forty-three female survivors of domestic violence in the USA. Gender stereotypes were used by abusers to create the idea of "crazy bitch". Sweet (2019) explained: "In gaslighting dynamics, the idea that women are saturated with emotion and incapable of reason is mobilised into a pattern of insults that chip away at women's realities. For example, Britney, a 30-year-old black woman, told me her abuser loved spinning the webs of a debate, especially when it left her feeling diminished. If she showed emotion during arguments, he called her 'crazy' —incapable of providing a legitimate counter-argument. Any show of emotion from Britney was immediately pathologised and she was rendered overwrought, her husband the holder of 'reason'. This affected Britney's desire to stand up for herself as she began questioning her 'mental state'..." (p861).

"Simone" described the use of "the crazy narrative" to delegitimise her as shown by this extract from the

[12] This emphasis was a rejection of claims that Donald Trump was gaslighting America: "The public has too much collective power to experience gaslighting, such that we can fact-check and push counter-narratives into the public sphere. Still, it is unsurprising that Trump and other leaders draw from gaslighting strategies, as they are rooted in masculine power and control. Positing gaslighting as a political strategy captures something important: manipulating others' sense of reality amplifies power; associating others with feminised unreasonableness is useful for domination" (Sweet 2019 p870).

interview:

"Simone: He said all sorts of terrible things about me in the divorce papers... like I had orgies at the house, which isn't true. I am not that way at all. [long pause]

Author: He was trying to discredit you?

Simone: Yeah. Like, that I'm absolutely crazy and I can't be around the kids. It was terrible. [He would say] that adulterous women run in my family... He would say, 'Be a mother'. Because he would always be saying that I'm not a good enough mother" (p861).

Other examples included: "Ebony's partner would steal her money and then tell her she was 'careless' about finances and had lost it herself... Adriana's boyfriend hid her phone and then told her she had lost it, in a dual effort to confuse her and prevent her from communicating with others... Jenn described her ex-boyfriend as a 'chameleon' who made up small stories to confuse her, like lying about what colour shirt he had worn the day before to make her feel disoriented... Luz told me, 'He was so astute. When things happened, he would turn it around and make it seem like something else was going on'... When Jaylene's boyfriend pushed her, he also yelled at her, saying, 'Look what you made me do... you're crazy'... Emily described her ex-husband stealing her keys so she could not leave the house and then insisting she had lost them 'again'" (Sweet 2019 pp861-862).

A linked aspect of gaslighting related to the women's sexuality. "For example, Rosa, a 41-year-old Latina woman, described how her ex-husband would invent tales of her infidelities and try to convince her they were true [...] Rosa's ex-husband tried to convince her she was cheating on him, a constant accusation that obsessed him. He used these stories to justify following Rosa when she left the house and beating her physically when she came home. Rosa regularly had to defend herself against his version of events, which was also a defence of her own sexual respectability" (Sweet 2019 p863).

Sweet (2019) explained: "Cultural ideas about women's dangerous, unruly sexuality — especially stereotypes surrounding black and Latina women's 'bad girl' sexuality... — underlie attempts to unmake their realities. Jaylene, a 23-year-old Latina woman, explained that her partner constantly calls her a 'ho' and insists she needs psychiatric help. He pressures her to drink alcohol and then calls her names (eg: 'slut') when he thinks she has drunk too much..." (p863).

Another element of gaslighting that Sweet (2019) emphasised was the use by abusers of women's "institutional vulnerabilities" (ie: gender-, sexual-, and racial-based inequalities). For example, "Maria L who is undocumented, lived in constant fear that if she left her abuser, he would turn her over to immigration authorities. He tied these threats to her supposed mental instability: '[He said] that he was going to take me to a mental institution, that I was crazy. He made me feel like I wasn't a person'... Abusers commonly use threats of deportation against undocumented women" (Sweet 2019 p865).

Attacking the women's sanity was used in relation to the police, legal, and mental health systems by abusers. For instance: "Susan described an incident when she called the police after her boyfriend assaulted her: 'The police talked to me. Then [my boyfriend said to me], ''You know I wasn't doing that, you know that. Did you hear me? Are you blanking out? What's wrong?'' [speaks in a fake concerned voice] He'd make eye motions with me, like, are you going crazy?'... As Susan tried to tell the police what happened, her abuser interceded to make it seem as if she were making up the story, as if she were having delusions and was too unstable to understand what had happened" (Sweet 2019 p866).

Williams (2021) asserted: "One problem with any bid to hold on to your own reality in the face of a gaslighter is that, whether we like it or not, none of us sees the world as it is. Our brains only process a fraction of the incoming sensory information we detect. The gaps are filled in by the brain, which constantly makes predictions based on previous experience and then updates them in light of new information" (p41). The upshot is subjective views of reality. So disagreements over reality are likely, but what distinguishes gaslighting is the use of coercion to make another person doubt the reality of their own experiences (Williams 2021).

7.5. APPENDIX 7B - GHOSTING

"Ghosting" is "where one person ends all communication with another, disappearing like a phantom. Messages are ignored and just like that, the person you had a connection with - typically a romantic partner, but sometimes a friend or colleague - chooses to disengage with no explanation" (Tait 2022 p47). LeFebvre (2017)

used a slightly different definition - "unilaterally ceasing communication (temporarily or permanently) in an effort to withdraw access to individual(s) prompting relationship dissolution (suddenly or gradually) commonly enacted via one or multiple technological medium(s)" (quoted in Thomas and Dubar 2021).

The prevalence of ghosting varies depending on the study. For example, more than one-quarter of 700 US adults in a 2018 study compared to nearly 80% of 800 18-33 year-olds on the dating site "Plenty of Fish" in 2016 (Tait 2022).

Thomas and Dubar (2021) recruited 76 US undergraduates for twenty focus groups to explore four aspects of ghosting:

i) What is it? - Six themes emerged from the focus groups here: a decision to cut off communication; an online behaviour; a process; a change in pattern of communication; not necessarily romantic relationships; and a feeling of no closure. The last theme is seen in this quote from a female participant: "I was in a relationship with somebody and unfortunately they cheated on me and when I found out I tried to get them to talk to me about it and I never heard from them ever again... like I still see them on Snapchat... there was no resolution..." (p295).

The idea of ghosting as a process can be seen in a quote from another female participant: "It's when you've been talking for a while and then you slowly start to not respond as much and eventually just cut off and they might continue to text you or whatever... but then you just do not respond anymore" (p295).

ii) Perceived reasons for it - Five main reasons were given including disinterest (particularly in casual dating cases), to avoid confrontation, conflict or intimacy, and own safety. Some quotes related to avoiding conflict include: "if there was some type of iffy sexual experience that happened, and you were nervous or ashamed or embarrassed"; "It's not worth it to go through and meet up and talk about and not hook up toxically"; "I think people get tired. It can be really tiring to have conversations relating to a lot of emotional labour and relationships and stuff like that" (p296).

iii) The role of technology/social media - Most participants agreed that ghosting is a product of technology/social media. As one female student said:

"Because social media gives the opportunity for people to connect so easily and so fast, [it] gives the opportunity at the same time to just cut off that connection so fast, and so easily" (p296). While another female student accepted that ghosting could have happened before social media: "I mean I'm sure it occurred before social media because if people wrote letters all the time to somebody and all of a sudden they letters stopped... but with technology and how ubiquitous it is and we have access to it at our fingertips whenever we want at any time, it just makes it so much easier to cut off communication" (p297).

iv) Psychological consequences for ghoster and ghostee - The perceived consequences for the ghoster included anxiety, indifference, remorse/guilt, and relief. While the ghostee might experience self-doubt and self-criticism. About the latter, one female participant said: "It becomes a lot of self-doubt at first. I think a lot of personal insecurity comes out when you don't have answers. So, you question yourself, you question what you know about yourself and you blame yourself. Like you say that it's because 'I'm not pretty enough' or 'I'm not smart enough', or like I said the wrong thing, or I did the wrong thing or whatever. And at least for me, that's like really harmful and can really affect my mood for a long period of time" (p298).

The researchers drew out some important points from the focus groups. "Narratives generally indicated that ghosting was typically experienced as sudden from the ghostee's perspective but was often perceived as a gradual process from the ghoster's perspective" (Thomas and Dubar 2021 p299).

In terms of the motives, "[T]he appeal of ghosting is that it is effective in accomplishing the immediate goal of alleviating emotional distress with little effort from the ghoster...[]... Moreover, participants admitted to ghosting because they felt inept at effectively communicating their feelings, and thus avoided confrontation. One proposed advantage of avoidance is the belief that the situation will resolve itself... — a sentiment that some participants expressed. Avoiding conversations that may lead to healthy conflict, however, may be a missed opportunity to develop intimacy and build trust... — two important elements of a secure attachment" (Thomas and Dubar 2021 p299).

Thomas and Dubar (2021), overall, viewed ghosting as a "multi-faceted construct" (p301).

Freedman et al (2019) investigated ghosting and implicit theories of relationships. These are assumptions about relationships that individual participants hold, and they influence perceptions, intentions and behaviours. Two dimensions have been distinguished for close relationships - destiny and growth (Knee 1998). Destiny beliefs hold that relationships are either going to work or not. "Thus, those with stronger destiny beliefs are more likely to believe that individuals within relationships are either meant to be together or they are not — that is, individuals have soul mates — compared to those with less pervasive destiny beliefs" (Freedman et al 2019 pp906-907).

Growth beliefs assume that relationships grow over time or not. "In other words, individuals with stronger growth beliefs think that relationships are malleable and can be improved upon through communication and overcoming hurdles in the relationship, compared to those with less pervasive growth beliefs" (Freedman et al 2019 p907).

These implicit beliefs have been found to associated with different aspects in relationships in studies. For example, stronger growth beliefs and longer relationships than weaker growth beliefs, and stronger destiny beliefs and greater relationship satisfaction (Freedman et al 2019).

Freedman et al (2019) performed two studies. Study 1 recruited 554 US adults via Amazon's Mechanical Turk to complete a general survey on ghosting. Firstly, they were asked what ghosting was to them. The most popular answers from a checklist were "not responding to phone calls", "not responding to texts", "not contacting via texts", and "not contacting via phone calls".

Then there was a series of statements about ghosting (eg: "ghosting is only socially acceptable after 2 dates or less"; "I have ghosted someone"; "I would think poorly of someone who used ghosting to end a romantic relationship"). Finally, the 22-item "Implicit Theories of Relationships Scale" (Knee 1998) was completed.

Overall, one-quarter of participants reported that they had been ghosted in a past romantic relationship, and just over one-fifth admitted to doing it. In terms of the implicit theories of relationships, "participants with stronger destiny beliefs were more likely to find it socially acceptable to use ghosting to end both short-term and long-term relationships, were less likely to think poorly of a ghoster, reported a higher likelihood of using ghosting in the future, and were more likely to have ghosted or have been ghosted than individuals with

weaker destiny beliefs" (Freedman et al 2019 p913). For growth beliefs, the only significant association was between stronger beliefs and less likely to feel that it was acceptable to use ghosting to end a long-term relationship.

Study 2 was a replication with 747 US adults recruited via Prolific Academic (a crowdsourcing website similar to Mechanical Turk), but the study included ghosting and friendships.

Firstly, for romantic relationships, similar numbers had been ghosted and had ghosted a romantic partner, but for friendships the figures were higher (figure 7.2). Generally, "stronger destiny beliefs were associated with more positive attitudes toward ghosting, whereas stronger growth beliefs were associated with more negative attitudes toward ghosting" (Freedman et al 2019 p918). But these associations were only true for romantic relationships.

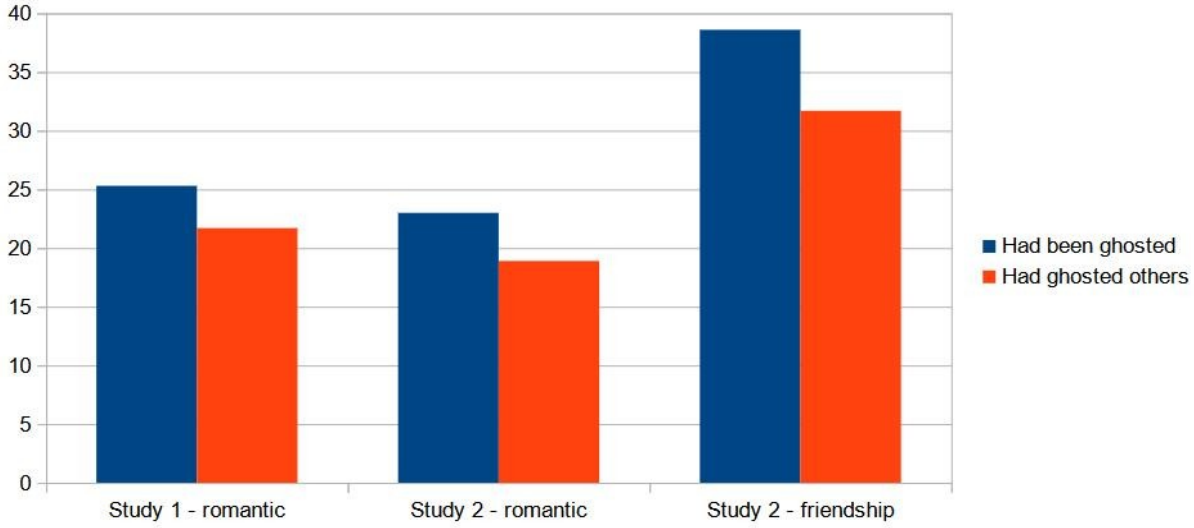


Figure 7.2 - Participants who had been ghosted and had ghosted others (%).

7.6. REFERENCES

Adler, N.E et al (2000) Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy, White women Health Psychology 19, 586-592

Ascone, L et al (2017) The effect of unfavourable and favourable social comparisons on paranoid ideation: An experimental

study Journal of Behaviour Therapy and Experimental Psychiatry 56, 97-105

Barton, R & Whitehead, J.A (1969) The gaslight phenomenon Lancet 293, 1258-1260

Bebbington, P.E et al (2013) The structure of paranoia in the general population British Journal of Psychiatry 202, 419-427

Ferraro, K.J (2006) Neither Angels Nor Demons: Women, Crime and Victimisation Lebanon, NH: Northeastern University Press

Freedman, G et al (2019) Ghosting and destiny: Implicit theories of relationships predict beliefs about ghosting Journal of Social and Personal Relationships 36, 3, 905-924

Freeman, D et al (2014) Height, social comparison, and paranoia: An immersive virtual reality experimental study Psychiatry Research 218, 348-352

Goldner, F.H (1982) Pronoia Social Problems 30, 1, 82-91

Green, C.E.L et al (2008) Measuring ideas of persecution and social reference: The Green et al Paranoid Thought Scales (GPTS) Psychological Medicine 38, 101-111

Knee, C.R (1998) Implicit theories of relationships: Assessment and prediction of romantic relationship initiation, coping and longevity Journal of Personality and Social Psychology 74, 360-370

LeFebvre, L.E (2017) Ghosting as a relationship dissolution strategy in the technological age. In Punyanunt-Carter, N.M & Wrench, J.S (eds) The Impact of Social Media in Modern Romantic Relationships Lanham, MD: Lexington Books

Manne, K (2017) Down Girl: The Logic of Memory Oxford: Oxford University Press

Raihani, N.J & Bell, V (2017) Paranoia and the social representation of others: A large-scale game theory approach Scientific Reports 7, 4544

Reed, E.J et al (2020) Paranoia as a deficit in non-social belief updating eLife 9, e56345

Saalfeld, V et al (2018) Experimentally induced social threat increases paranoid thinking Royal Society Open Science 5, 180569

Schwartz, J & Schlenoff, D (2020) Reckoning with our mistakes Scientific American September, 34-39

Stark, C.A (2019) Gaslighting, misogyny, and psychological oppression The Monist 102, 221-235

Stark, E & Hester, M (2019) Coercive control: Update and review Violence Against Women 25, 1, 81-104

Stern, R (2007) The Gaslight Effect: How to Spot and Survive the Hidden Manipulation Others Use to Control Your Life New York:

Harmony Books

Sukel, K (2023) Paranoid, me? New Scientist 11th February, 42-45

Sweet, P.L (2019) The sociology of gaslighting American Sociology Review 84, 5, 851-875

Sweet, P.L (2022) Understanding gaslighting Scientific American October, 54-59

Tait, A (2022) Ghostbusting New Scientist 23rd April, 47-50

Thomas, J.O & Dubar, R.T (2021) Disappearing in the age of hypervisibility: Definition, context, and perceived psychological consequences of social media ghosting Psychology of Popular Media 10, 3, 291-302

Williams, C (2021) Mind control New Scientist 30th January, 40-43

8. MISCELLANEOUS

8.1. BRAIN AND MENTAL DISORDERS

Analysis of the health records of 194 US Vietnam veterans, who had physical injury to the brain, by Taylor et al (2023), suggested that the same brain network may be involved in depression, anxiety, addiction, obsessive-compulsive disorder, schizophrenia, and bipolar disorder. Injury towards the back of the brain (in posterior parietal cortex) was associated with more likely diagnosis of these conditions, but the opposite for injury near the front of the brain (eg: anterior cingulate and insula). The researchers then collected data from 193 brain-scanning studies which showed shrunken tissue in the regions of the front of the brain in individuals with mental disorder diagnosis. "Put together, the findings suggest that in people without any mental health condition, the back regions of the brain inhibit the front regions, while in people with damage to the back regions, the front regions become too active, which may lead to mental health conditions and tissue shrinkage" (Wilson 2023 p16).

That the six mental disorders share an underlying cause is controversial because the conditions have very different symptoms (Wilson 2023).

References

Taylor, J.J et al (2023) A trans-diagnostic network for psychiatric illness derived from atrophy and lesions Nature Human Behaviour 7, 420-429

Wilson, C (2023) One brain network may be involved in six different mental health conditions New Scientist 21st January, p16

8.2. PRECARIOUS EMPLOYMENT AND MENTAL HEALTH

"Precarious employment" is a term covering "a variety of insecure contractual statuses, including temporary agency, casual, fixed-term, zero-hours, gig or platform work, freelancing and self-employment. However, there is growing consensus that precarious employment is

best conceived as multi-dimensional, involving core components of employment insecurity, income inadequacy and lack of rights and social protection... Some conceptualisations also include low workplace social support, lack of access to training and development, higher exposure to occupational health hazards, and low work status" (Irvine and Rose 2022 pp2-3). Pirani (2017) talked of "the accent on the dark side of atypical work" (quoted in Irvine and Rose 2022).

This fits with the wider concept of "precarity", which Campbell and Price (2016) described as "a generalised set of social conditions and an associated sense of insecurity, experienced by precarious workers but extending to other domains of social life such as housing, welfare provision and personal relationships" (quoted in Irvine and Rose 2022).

In their review on precarious employment and mental health, Irvine and Rose (2022) concentrated on "insecure contractual status" (as opposed to subjectively perceived job insecurity). "The extent to which insecure contractual relationships affect mental health varies according to whether that employment form is voluntarily chosen and the contextual factors framing that choice, including biography, aspirations and the presence of financial and social 'buffers' of support" (Irvine and Rose 2022 p3). Thirty-two relevant studies published between 2004 and 2021 were found by these researchers (of which twenty-four were peer reviewed studies).

Four "core experiences" emerged from the analysis (which impacted at economic, socio-relational, behavioural, and physical levels):

1. Financial instability - "People in casual, zero-hours or gig work faced uncertainty about their overall level of income and the schedule or flow of that income; in other words, earnings could be both inadequate and unpredictable" (Irvine and Rose 2022 p8).

a) Economic level – eg: complex budgeting; use of credit and borrowing; risk of debt.

b) Relationships – eg: restrictions on purchases and tension in the family.

c) Behaviour – eg: "in order to counter the risk of insufficient income, people made themselves continually available for work, feeling they were 'always on call' and unable to turn down any offer of work... People enlisted with multiple employers or agencies, to maximise

earning potential and minimise risk of unemployment..., rarely taking time off or having holidays... This had a recursive effect on social relationships; feeling a need to be continually available for work, people curtailed their social lives, leading to isolation and weakening of friendships and social networks" (Irvine and Rose 2022 p10).

d) Physical – eg: "presenteeism" (going to work despite illness or injury).

2. Temporal uncertainty – Variability in working hours, and short notice of shifts, meant committing to social engagements was avoided, for example. "Fluctuating work patterns also had physical impacts, disrupting people's ability to maintain healthy sleeping and eating habits..., which are important factors in supporting mental well-being" (Irvine and Rose 2022 p11).

Long-term planning was also curtailed. "Temporary and fixed-term contracts also entailed uncertainties about one's longer-term geographical location, preventing people from 'putting down roots' in a community, leading to isolation and lack of social integration" (Irvine and Rose 2022 pp11-12).

3. Marginal status - "People in precarious work, especially temporary employment, experienced a peripheral, inferior or devalued status within the workplace. Temporary workers reported being allocated the most unpleasant or menial tasks, provided with inadequate training and equipment, lacking feedback and professional development opportunities, having unreasonably high demands made and given insufficient breaks. Marginal status had social-relational consequences, with workers feeling left out of information networks and decision-making processes, being excluded from formal and informal social occasions, and encountering hostility from permanent employees" (Irvine and Rose 2022 p12).

4. Employment insecurity – eg: leading to "overwork and overperformance, in order to demonstrate value and reliability to the employer" (Irvine and Rose 2022 p12).

The pathway from precarious employment to poor mental health was via stress, particularly with the "constant uncertainty... inherent" (Allan et al 2021). "Uncertainty is positively correlated to mental health problems including anxiety, depression, stress and

distress" (Irvine and Rose 2022 p13).

References

Allan, B.A et al (2021) Precarious work in the 21st century: A psychological perspective Journal of Vocational Behaviour 126, 103491

Campbell, I & Price, R (2016) Precarious work and precarious workers: Towards an improved conceptualisation The Economic and Labour Relations Review 27, 3, 314-332

Irvine, A & Rose, N (2022) How does precarious employment affect mental health? A scoping review and thematic synthesis of qualitative evidence from Western economies Work, Employment and Society (https://journals.sagepub.com/doi/10.1177/09500170221128698)

Pirani, E (2017) On the relationship between atypical work(s) and mental health: New insights from the Italian case Social Indicators Research 130, 1, 233-252

8.3. LONELY PEOPLE THINK DIFFERENTLY

Back et al (2023) tested this hypothesis: "Non-lonely people are all alike, but every lonely individual processes the world in their own idiosyncratic way" (p684). This links to an idea called the "Anna Karenina principle" (Diamond 1997), based on the quote from the book by Tolstoy - "Happy families are all alike; every unhappy family is unhappy in its own way" (quoted in Back et al 2023). In other words, "successful endeavours are marked by similar characteristics but that unsuccessful endeavours are each different in their own idiosyncratic way" (Back et al 2023 p684).

Back et al (2023) recruited sixty-six students in California to watch video clips while undergoing functional magnetic resonance imaging (fMRI) of 214 brain regions, and at a different time to complete questionnaires about their social networks, and loneliness.

The findings supported the hypothesis. Back et al (2023) explained: "Our results suggest that lonely people process the world idiosyncratically, which may contribute to the reduced sense of being understood that often accompanies loneliness. In other words, we found that non-lonely individuals were very similar to each other in their neural responses, whereas lonely individuals were remarkably dissimilar to each other and to their non-lonely peers" (p690). They continued: "Therefore, we conclude that lonely people may view the world in a way

that is different from their peers. These findings raise the possibility that being surrounded predominantly by people who view the world differently from oneself may be a risk factor for loneliness (even if one socialises regularly with them)" (Back et al 2023 p690).

The differences in brain activity were found in the "default-mode network" which combines external information about the environment with past memories and knowledge. It can be called a "sense-making" network (Back et al 2023). The researchers compared the brain images of two individuals at a time in their analysis (lonely versus non-lonely, two lonely individuals, and two non-lonely individuals).

Note that the findings were correlational, so it is not clear if the idiosyncratic processing was a cause or a consequence of loneliness.

The researchers used subjective and objective measures of loneliness. The former was covered by the "UCLA Loneliness Scale" (ULS-8) (Hays and Dimatteo 1987). "Lonely" individuals (n = 35) were categorised as above the median score (16; possible range 6-27), while those below the median were classed as "non-lonely" (n = 31). The objective measure of social disconnection was based on the students' reported number of regular social interactions in their residential communities.

References

Back, E.C et al (2023) Lonely individuals process the world in idiosyncratic ways Psychological Science 34, 6, 683-695

Diamond, J (1997) Guns, Germs, and Steel: The fates of Human Societies New York: W.W Norton

Hays, R.D & Dimatteo, M.R (1987) A short-form measure of loneliness Journal of Personality Assessment 51, 1, 69-81