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A complete listing of his writings at <http://kmbpsychology.jottit.com> and <http://psychologywritings.synthasite.com/>.

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# 1. PETS AND HUMANS: TWO DIFFERENT AREAS OF STUDY

- 1.1. Human-pet relationships
- 1.2. Delusional infestation
- 1.3. References

## **1.1. HUMAN-PET RELATIONSHIPS**

General surveys report that a vast majority of pet owners see their pets as family members (eg: 91% in USA; 88% in Australia) (Charles 2014). Charles (2014) noted that "pets are defined as kin due to the quality of the relationship... and the support they provide... However, while close emotional bonds between humans and their pets are often understood in familial terms, they may be experienced as having a different quality from those with human kin" (p716).

Pets are different to "working" animals in that the human-pet relationships "are based primarily on the transfer or exchange of social rather than economic or utilitarian provisions" (Serpell 2005 quoted in Charles 2014)<sup>1</sup>. Also pets "live inside the home, they are named<sup>2</sup> and they are not eaten" (Charles 2014).

Charles (2014) explored the human-pet relationship through responses in 2009 by panel members of a Mass Observation Project, which collects writings from "ordinary people" about their "everyday lives". Analysis was made of 249 responses about "the part played by animals in your life", and number of themes were drawn out.

1. Childhood and animals - Accounts of emotional attachments in childhood - eg: describing her dog, one woman said: "All through my childhood he was there as companion and comforter. I was an only child, and so I regarded him as my brother" (p721). Viewing pets like significant humans continued in adulthood as several respondents "likened pets to young children and, in a few

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<sup>1</sup> In a changing society with the loss of traditional sources of support (ie: nuclear family), "people turn to animals for companionship and intimacy; pets provide the ontological security which is no longer forthcoming from relations with humans, which are fragile, fluid and contingent" (Charles 2014 p717). This is one explanation of human-pet relationships. An alternative is that traditional support is not declining, and pets are incorporated as social actors into "hybrid families" (Franklin 2007), "where humans are de-centred and the species barrier has no meaning" (Charles 2014).

<sup>2</sup> "Naming individuates an animal, endowing it with attributes that are conventionally seen as human; this practice blurs the species barrier and became common in Britain in the 18th century ... The idea that pets are like children, faithful servants, and friends also has a long history, emerging in Britain at the end of the 17th century... and in the USA in the 18th and 19th centuries" (Charles 2014 p717).

cases, spoke about them as substitutes for human companions and/or family members" (Charles 2014 p721).

2. Connectedness - This was based on the pet as individual with particular characteristics or personality - eg: one man wrote: "Dogs had distinct characters. On the farm, Laddie was quiet and clever, while Bruce was boisterous and aggressive; Flash from Chapel Row was sly, and the dog in the Post Office was fierce" (p722).

Thus the special nature of the relationship as seen in the reaction to a cat's death: "I was absolutely devastated! I mourned that cat for weeks, just as I would if it had been my child. I'm absolutely convinced that she was put on this earth to be with me and that we were like soul mates" (p723).

"For all the correspondents, connectedness was created rather than given; it was constructed through interaction with a particular animal and was often attributed to the actions of that animal" (Charles 2014 p723). One man reported a cat's preference for him rather than other family members - "it attached itself to me, and was disdainful of other family members" (p724).

3. Social actors - This theme covered stories about the pet "choosing" to become part of the family or not - eg: describing a cat, a woman said: "For two years he wouldn't integrate into the family, preferring to sit in a room on his own. Then he started to join in a bit and now he's totally inseparable from us" (p724).

4. Almost human - "Animals were sometimes found to be better at being family than were human animals; they were 'more family than family' and the emotional bond was experienced as stronger and more enduring than that with some human family members" (Charles 2014 p725). For example, as an older woman wrote: "Animals just love you as you are and they don't argue - they accept you as you are and in return they give you their trust and friendship and faithfulness" (p725).

Charles (2014) felt that the respondents described a deep emotional relationship to pets, which was not simply a substitute for humans, and was not necessarily a product of modern society. She ended: "Kinship across the species barrier is not something new and strange, but is an everyday experience of those humans who share their domestic space with other animals and, rather than witnessing the emergence of new, post-human families, it is usual for domestic groups to include both human and other animals and for affective, inter-species connections to be formed between them" (p727).

Pet or companion animals are associated with physiological (eg: encourage activity), psychological (eg: have calming effect), and social (eg: facilitate social interactions) benefits for their owners. But there are also negatives (eg: risk of cross-species infection; illness of the animal) (Ryan and Ziebland 2015).

Ryan and Ziebland (2015) explored the importance of pets for individuals with long-term health conditions (eg: stroke, Parkinson's disease) (or their carers) in sixty-one in-depth interviews held in the archives of the Health Experiences Research Group at the University of Oxford. The interviews were about health experiences, and Ryan and Ziebland's secondary analysis focused on references to pets.

The pets (particularly dogs) were central to the interviewee's health narrative. For example, "Jenny", describing her onset of Parkinson's disease, said: "I started with a tremor in my arm. I thought it was a trapped nerve. But I'd been through quite a stressful time in December. 23rd December my dad had died. Um. My mum came to stay with us for a few days over Christmas. We had a golden retriever dog that absolutely adored my dad and couldn't understand why he wasn't there. And a few days after Christmas she started vomiting and we had to take her to the vets and we discovered she'd got, eaten, yards and yards of tinsel off the Christmas tree. So that trauma. The vet didn't think she would live" (p73).

The interweaving of the interviewee's narrative about their health and that of the pet is also seen with "Stephen" (who had a heart condition): "..when I get up in the morning I've got to give my cat insulin because it's diabetic. I've got to prick my fingers to take my blood sugar count, and having done that, we're ready to start the day. And we go through the same routine at night again, before I go to bed" (p74).

Another theme was how the pets had helped. For example, "Martin", whose wife was in hospital, said: "So I came home - fortunately for me I had a dog which believe it or not is something I didn't believe I would ever need so much - but I came home and took the dog a walk and we had a chat! And we talked this thing through" (p75). "Mary" described a similar role for her pet "Polly": "I suppose because my husband died em, I've relied on Polly for company and you have to talk, you haven't got anyone to talk to if you're on your own, you need, you need to be able to talk" (p76).

Ryan and Ziebland (2015) summed up: "Participants are not anthropomorphising their animals in these extracts but according their pets a status that is not typical in social science understandings of human and nonhuman interaction. The illness narratives involve a

shared and intertwined consideration of both the participant and their pet's capabilities and wellbeing. The narratives suggest more of a levelling between the status of the pet and person than is often not recognised or acknowledged, in popular discourses around animal ownership" (p74).

## 1.2. DELUSIONAL INFESTATION

Lepping et al (2015) defined delusional infestation (DI) as "a psychiatric disorder that manifests as an unshakeable false belief of being infested with living or inanimate pathogens. The chief complaint of patients is a rigid belief, against all medical evidence, that they are infested" (p160). The delusion <sup>3</sup> can also be by proxy - ie: belief that someone else is infested. In a small number of cases the someone else can be a pet, either alone or as well as the owner being infested ("double DI") (Lepping et al 2015).

Lepping et al (2015) formally distinguished DI as:

- DI by proxy - only pet is infested (similar to Munchhausen syndrome by proxy, which is a factitious disorder by proxy, usually with a child).
- DI by proxy - both pet and child infested.
- Double DI - both pet and owner infested. With two humans this would be "folie a deux" (shared or induced delusional disorder), but obviously a pet cannot share the delusion.

Lepping et al (2015) investigated how often vets in North America came across this behaviour with an emailed questionnaire to over 32 000 members of a professional organisation in 2013. The researchers received 714 responses that could be analysed, and these included 724 suspected cases of double DI or by proxy <sup>4</sup>, of which the majority were female (83%), White (94%), and aged 30-60 years old (75%) <sup>5</sup>. The most common pet presented was a dog (65%) followed by a cat (27%).

The researchers calculated a "conservative estimate" of 2.3% of vets having seen at least one case of DI <sup>6</sup>.

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<sup>3</sup> Delusions are categorised as primary non-delusional disorder or secondary delusions. The latter is the manifestation of another psychiatric or medical illness whereas the former involves no other mental disorder (Lepping et al 2015).

<sup>4</sup> About one-third of cases were double DI.

<sup>5</sup> Previous research found predominately elderly women (eg: Freudenmann and Lepping 2009).

<sup>6</sup> Note there was a bias towards richer individuals simply because of those who could afford to keep a pet and/or pay for vet services.

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## **2. AN EXPERIMENT ON BEING WITHOUT A SMARTPHONE**

- 2.1. Introduction
- 2.2. Cheever et al (2014)
- 2.3. Appendix 2A - Information and communication technology
- 2.4. Appendix 2B - "iDisorders"
- 2.5. Appendix 2C - Fear of missing out
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### **2.1. INTRODUCTION**

Wireless mobile devices (WMDs) ("smartphones") <sup>7</sup> are used by many people today, particularly younger individuals, who live in urban areas. There is a concern that high use of these devices (eg: exchanged over 100 texts per day) <sup>8</sup> produces dependency (Cheever et al 2014). The term "nomophobia" (King et al 2013) has been coined to describe the dependence on WMDs <sup>9</sup>.

For example, students who reduced their text messaging for two days reported feeling annoyed, anxious, and agitated about not being able to communicate freely (Skierkowski and Wood 2012) (appendix 2B). While Thomée et al (2010) talked of "communication overload" as individuals reported the constant demands and expectations of being available everywhere all the time, and how to distinguish important messages from less important ones (table 2.1).

Anxiety over lack of access to WMD is linked to "fear of missing out" (FoMO) - "the fears, worries, and anxieties people may have in relation to being in (or out of) touch with the events, experiences, and conversations happening across their extended social circles" (Przybylski et al 2013 p1842) (appendix 2C) <sup>10</sup>.

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<sup>7</sup> These are one of many developments in information and communication technology (ICT) (appendix 2A).

<sup>8</sup> Eg: Checking the smartphone every fifteen minutes or less varied with age - more than 60% of the "iGeneration" (born in the 1990s) and "Net Generation" (born in the 1980s), 40% of "Gen Xers" (born between 1965 and 1979), and less than 20% of "Baby Boomers" (born between 1946 and 1964) (Rosen et al 2012). Individuals of student age today are called "Millenials" (Alt 2015). The average person looks at their smartphone 150 times a day, according to research by Nokia (Rosen et al 2013).

<sup>9</sup> Yildirim and Correia (2015) developed a questionnaire to measure nomophobia (NMP-Q) with 20 items (rated 1 to 7) which covered four behaviours - "not being able to communicate, losing connectedness, not being able to access information, and giving up convenience";

- I would feel uncomfortable without constant access to information through my smartphone.
- I would be annoyed if I could not look information up on my smartphone when I wanted to do so.
- Being unable to get the news (eg: happenings, weather etc) on my smartphone would make me nervous.

<sup>10</sup> High Facebook use, for example, is linked to agreement that other people have happier and better

- Interviews with sixteen male and sixteen female 20-28 year-olds in Sweden who had high computer and mobile phone use.
- Computer eg: "If someone sends an email and you haven't answered within an hour, you'll get 'Did you read my email or what?'... You can't concentrate on anything because you get interrupted all the time. And also, you are expected to be available somehow and that can be stressful" ("Woman A").
- Mobile phone eg: "You're expected to answer. And I find that pretty stressful. It rings and you can't answer, because you don't have time or you are busy. And so many people expect you to call back right away. But either you don't feel up to it or you don't have time to do it. You are so much easier to reach when you have a mobile phone. People always expect you to answer, and then when you do answer it's just, 'What are you up to? Where are you? Why haven't you answered the phone? I've tried calling you lots of times!' And then you're supposed to feel guilty for not always being accessible. I find that pretty stressful" ("Woman A").
- The researchers stated: "As well as high quantitative use, bad quality or content of use, for example destructive information and communications, was perceived as a link between computer use and depression. This included not only bad or harmful information or misunderstandings in chat communications, but also feelings of inadequacy in the face of the unlimited possibilities and high achievements of others portrayed on the internet". This is described by "woman D": "Well, if you surf the internet a lot, then you can find lots of things that can make you feel like a failure because you see how successful everybody else is, or how good looking everybody is, or how much is happening there and you can't go there".

Table 2.1 - Quotes from Thomée et al (2010).

## 2.2. CHEEVER ET AL (2014)

Cheever et al (2014) investigated anxiety levels when WMDs were not available for a group of US students. One hundred and sixty-three undergraduates (aged 19 to 57 years old) at a university in Southern California were randomly assigned to one of two conditions. The participants were asked to complete questionnaires for up to ninety minutes in a large lecture theatre either leaving their WMD outside with an experimenter, or taking it in but "on silent" and out of sight. The questionnaires measured anxiety<sup>11</sup>, and daily WMD usage for nine activities (eg: listening to music, texting, telephoning). The anxiety questionnaire was completed in three parts at the start, middle, and the end of the

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lives, as do individuals who have more Facebook "friends" that they personally do not know (Alt 2015) (appendix 2D).

<sup>11</sup> The State-Trait Anxiety Inventory (STAI) (Spielberger 1983) has twenty items (eg: "I feel calm"), each rated from 1 ("not at all") to 4 ("very much so").

session.

Average daily usage varied for the nine activities - eg: texting (4.8 hours), visiting websites (2.19 hours), telephone talking (1.19 hours). All uses were totalled (mean 13.58 hours), and three levels of usage were distinguished - low (1 to 7 hours)(n = 54), moderate (7.5 to 16.5 hours)(n = 55), and high (>17 hours)(n = 54).

The researchers tested three hypotheses:

1. Participants will report more anxiety as time passes without use of their WMD. The anxiety scores were significantly higher for the later completion of the STAI than the earlier one, irrelevant of whether the smartphone was left outside or taken into the lecture hall (figure 2.1).

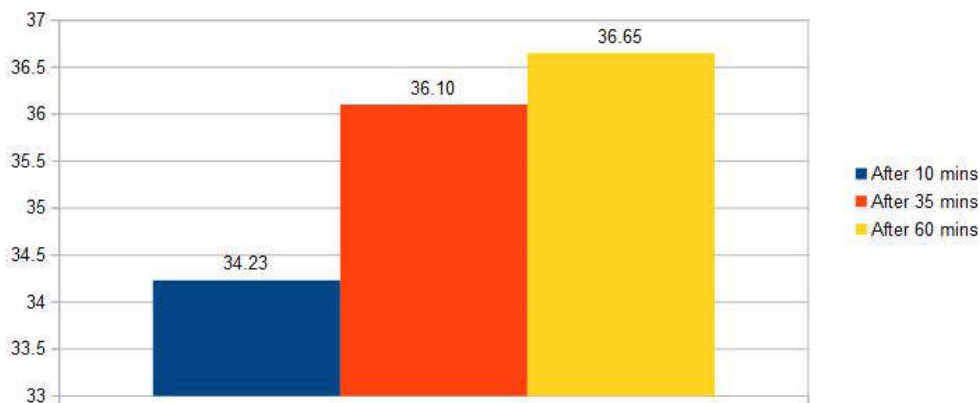
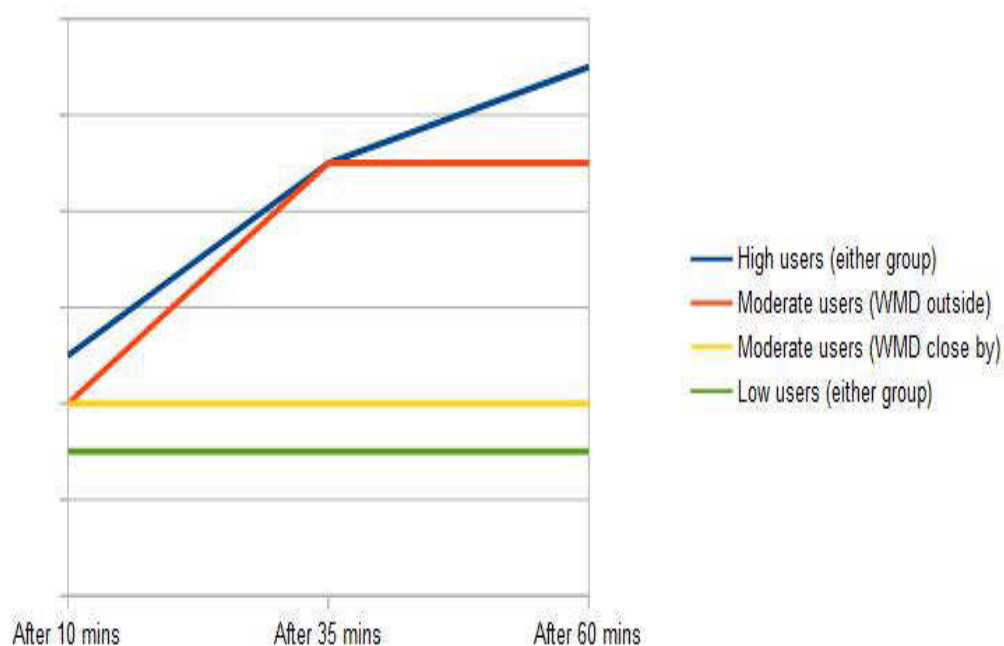


Figure 2.1 - Mean scores of STAI (out of 80) taken at three different times in lecture hall.

2. Participants will be more anxious if their WMD is outside than having it close by (even though it cannot be used). This was not supported by the data.

3. Higher daily usage of WMD will be associated with greater anxiety than less usage. The heavy users reported significantly more anxiety than the other two groups, and this increased with time, irrelevant of where the smartphone was. Moderate daily users were more anxious if their WMD was outside than close by. Low users showed the least anxiety overall, and this level did not change over time (figure 2.2).

Cheever et al (2014) summed up: "These results suggest that students are so dependent on their WMDs that anxiety increases when the device is absent - even when they are aware the device will be back in their possession shortly - and those who use the device more



(Based on Cheever et al 2014 figures 1 and 2 p294)

Figure 2.2 - Level of anxiety based on daily usage of WMD.

frequently become significantly more anxious as time passes than those who use it less frequently" (p295).

Table 2.2 summarises the key limitations of the study and ideal solutions.

### 2.3. APPENDIX 2A - INFORMATION AND COMMUNICATION TECHNOLOGY

Kelty (2012) described the intersection of modern technology and collectives under the heading "crowds and clouds" by referring to the various terms used including virtual communities, digital natives, network societies, online communities, and crowd-sourcing.

He stated: "Each of these terms conjugates an apparently straightforward technological thing with an apparently straightforward collective of some kind. But the result is apparently not straightforward. Instead, each one poses anew an opposition between emergent technology and stable collectives, strengthening the idea that the two are of different orders. In some cases, these terms are optimistic propositions that older kinds of collectivities can be intensified or expanded; in other cases (eg: digital divides, information

LIMITATION	SOLUTION
1. Only university students at one US institution (of which 75% were 24 years old or younger). This limits the generalisability of the findings to other students, and the general population.	1. Wider cross-section of ages and areas/countries.
2. Self-report measure of anxiety.	2. Physiological (autonomic) measures of anxiety, like heart rate.  Cheever et al commented: "social psychologists argue that autonomic arousal does not match subjective feeling states and that people who are frightened or panicky may show few, or no, physiological responses" (p295).
3. Self-report measure of WMD usage (eg: accuracy of recall).	3. Ask participants to keep diary of use over one week, for example, or measure their use automatically with an app.
4. Cheever et al admitted that "the environment might have influenced participants' anxiety levels. The participants sat silently in a large hall with many other students, were given instructions not to talk, and were monitored by the lead experimenter and several research assistants. The situation itself may have increased participants' anxiety over time" (p296).	4. Less anxiety-provoking environment.  Cheever et al commented: "If this were the case, an initial rise in anxiety would have been observed for all groups followed by similar patterns of increasing anxiety over time. However, this was not what was observed. Only the moderate and heavy WMD users had a rise in anxiety levels over time; those who used their device less frequently showed no difference in anxiety throughout the experiment" (p296).
5. Cheever et al admitted that the participants "may have had increased anxiety thinking about who had possession of their WMDs rather than worrying about the devices not being with them" (p296).	5. Allow participants to put WMDs in secure place.

Table 2.2 - Key limitation and solutions of Cheever et al's (2014) study.

plantations), the conjugations point to more pessimistic conclusions.

Lurking behind such terms and debates is a much more general question. Contemporary information technology brings into relief a long-standing tension about the constitution of large-scale collectivities: namely, do they actually exist in any meaningful sense before they are constituted? Or are they artifacts of their

technological intermediation? This tension between 'natural' forms of community and mediation - particularly technological mediation - is one of the oldest stories that moderns tell about themselves".

Rao (2012) described the understanding of the future in relation to a "manufactured normalcy field" (MNF): "Yet, somehow, the future always seems like something that is going to happen rather than something that is happening; future perfect rather than present-continuous... There are mechanisms that operate - a mix of natural, emergent and designed - that work to prevent us from realising that the future is actually happening as we speak". The alternative is "a kind of existential nausea".

The future is thus made up of things that have been integrated in the MNF and those that have not. Using the example of air travel, Rao (2012) described how the experience is part of the MNF: "When you are sitting on a typical modern jetliner, you are travelling at 500 mph in an aluminium tube that is actually capable of some pretty scary acrobatics. Including generating brief periods of zero-g. Yet a typical air traveller never experiences anything that one of our ancestors could not experience on a fast chariot or a boat... This means that even though air travel is now a hundred years old, it hasn't actually 'arrived' psychologically. A full appreciation of what air travel is has been kept from the general population through manufactured normalcy".

Making sure that the new does not seem too new is consciously done by marketing and new products using, what Rao (2011) called the "Milo Criterion" - "successful products are precisely those that do not attempt to move user experiences significantly, even if the underlying technology has shifted radically" (Rao 2012).

Where the future does arrive is via specialisation - ie: the experts or specialists who work in modern technology. "There is a subset of humanity that routinely does DNA sequencing and similar things everyday, but if the genomic future has arrived for them, it has arrived as a clean, purely cerebral-instrumental experience, transformed into a new kind of symbol-manipulation and equipment-operation expertise" (Rao 2012).

Saying all that, there is an exception. "There is one element of the future that does arrive on schedule, uncensored. This is its emotional quality. The pace of change is accelerating and we experience this as Field-stretching anxiety. But emotions being what they are, we cannot separate future anxiety from other forms of anxiety" (Rao 2012). Added to this, "a constant sense of crisis", and "a constant feeling of chaos held at bay" (Rao 2012).

One practical reaction is to escape to a "simpler

time", either psychologically or literally. The past is viewed as more "pure" or "authentic" (irrelevant of whether it actually was or not).

#### 2.4. APPENDIX 2B - "iDISORDERS"

Kraut et al (2002) reported more loneliness and depression with greater use of the Internet in the HomeNet Project. This project involved providing Internet access to ninety-three households in 1995 who had no experience of the Web. Though the negative impacts were seen to dissipate over time, the concept of "Facebook depression" was introduced, along with "iDisorders" (Rosen et al 2013). Table 2.3 presents a selection of studies on Internet use and depression.

Social networking site use has been linked to other psychiatric disorders, like narcissism (Rosen et al 2013).

STUDY	DETAILS	COMMENT
de Wit et al (2011)	Individuals with major depressive disorder spent more time on the computer than individuals with other psychiatric disorders or a control group	Correlation
Davila et al (2012)	Among 344 undergraduates, negative social interactions on social networking sites linked to depression	Quality of social networking sites interactions important
Steinfeld et al (2008)	Individuals with low self-esteem gained more social ties in a longitudinal study of Facebook use	Positive benefits

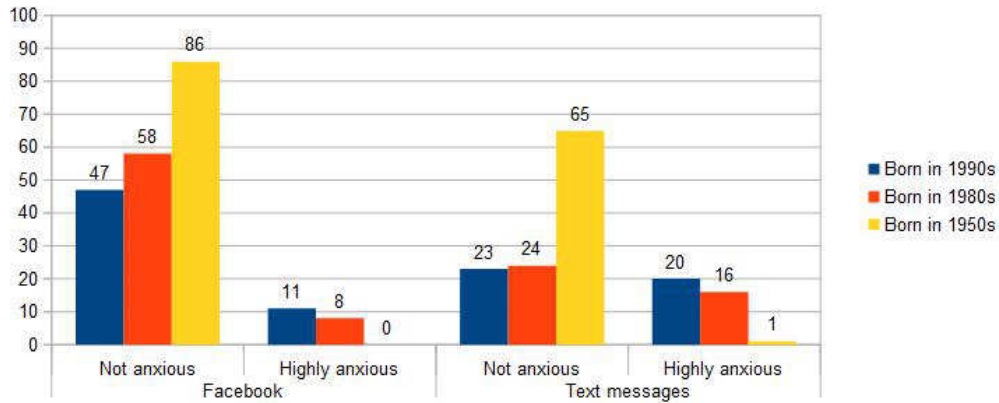
Table 2.3 - Selection of studies on Internet use and depression.

Rosen et al (2013) investigated the negative relationship between technology usage and psychological health ("iDisorders") among 1143 adults in California. In an anonymous online survey, participants completed measures of psychiatric disorders, daily technology and Facebook usage, and attitudes towards technology.

Individuals who spent more time online generally, and those who performed more impression management tasks on Facebook (eg: updating personal posts) had more symptoms of depression, but those with more Facebook "friends" had less symptoms. Greater Facebook use and number of "friends" were significantly associated with bipolar-mania symptoms, narcissism, and paranoia.

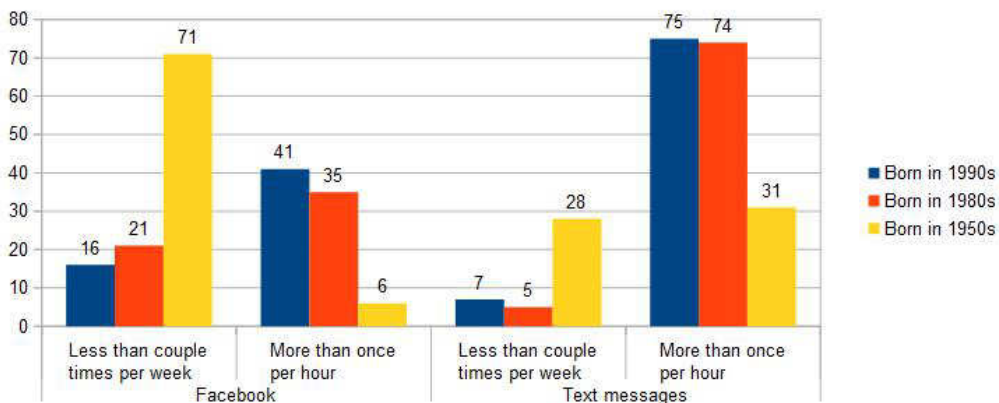
Younger individuals were more anxious if they could

not check their media as often as they wanted (figure 2.3), and they checked more often given the choice (figure 2.4).



(Data from Rosen et al 2013 table 4 p1249)

Figure 2.3 - No and high anxiety about not checking Facebook and text messages by three age groups (%).



(Data from Rosen et al 2013 table 5 p1250)

Figure 2.4 - How often individuals check Facebook and text messages by three age groups (%).

## 2.5. APPENDIX 2C - FEAR OF MISSING OUT

Przybylski et al (2013) described FoMO as "a pervasive apprehension that others might be having rewarding experiences from which one is absent", and it is "characterised by the desire to stay continually connected with what others are doing" (p1841). Turkle (2011) argued that the desire to stay continuously connected (the "tethered self") has negative consequences



for well-being, including distraction from the here-and-now.

Almost 75% of young adults admitted to FoMO (defined as "the uneasy and sometimes all-consuming feeling that you're missing out - that your peers are doing, in the know about, or in possession of more of something better than you") in a 2011 survey (quoted in Przybylski et al 2013).

Przybylski et al (2013) set out to develop a self-reported measure of FoMO. Initially (Study 1), they devised thirty-two statements from popular and academic writing. These were presented to over one thousand individuals using the Internet with a five-point Likert scale. Factor analysis and item analysis produced ten items that "accurately tapped into between-person variability in FoMO". This is the "Fear of Missing Out Scale" (FoMOS) (table 2.4).

Each item is scored from 1 ("not at all true of me") to 5 ("extremely true of me")

- 1. I fear others have more rewarding experiences than me.
- 2. I fear my friends have more rewarding experiences than me.
- 3. I get worried when I find out my friends are having fun without me.
- 4. I get anxious when I don't know what my friends are up to.
- 5. It is important that I understand my friends "in jokes".
- 6. Sometimes, I wonder if I spend too much time keeping up with what is going on.
- 7. It bothers me when I miss an opportunity to meet up with friends.
- 8. When I have a good time it is important for me to share the details online (eg: updating status).
- 9. When I miss out on a planned get-together it bothers me.
- 10. When I go on vacation, I continue to keep tabs on what my friends are doing.

(Minimum score = 10; maximum score = 50. Higher score = higher FoMO)

(Source: Przybylski et al 2013 Appendix A p1847)

#### Table 2.4 - Fear of Missing Out Scale.

Then the researchers tested three hypotheses about FoMO with a nationally representative sample of over 2000 adults in Great Britain (Study 2).

The first hypothesis predicted that individuals who have their needs for competence ("the capacity to effectively act on the world"), autonomy ("self-authorship or personal initiative"), and relatedness "closeness or connectedness with others") satisfied in everyday life would have a lower FoMO score. This fits with the self-determination theory (SDT) (Deci and Ryan 1985) which sees satisfaction of these three basic

psychological needs as key to explaining motivation and behaviour. So, FoMO "can be understood as self-regulatory limbo arising from situational or chronic deficits in psychological need satisfactions" (Przybylski et al 2013 p1842). The SDT was operationalised by the Need Satisfaction Scale (La Guardia et al 2000) with nine items, including "I feel very capable and effective" (competence), "I feel free to be who I am" (autonomy), and "I feel a lot of closeness and intimacy with others" (relatedness).

Przybylski et al (2013) found a negative correlation between the Need Satisfaction Scale score and the FoMOS score (figure 2.5). The hypothesis was, thus, supported by the data.

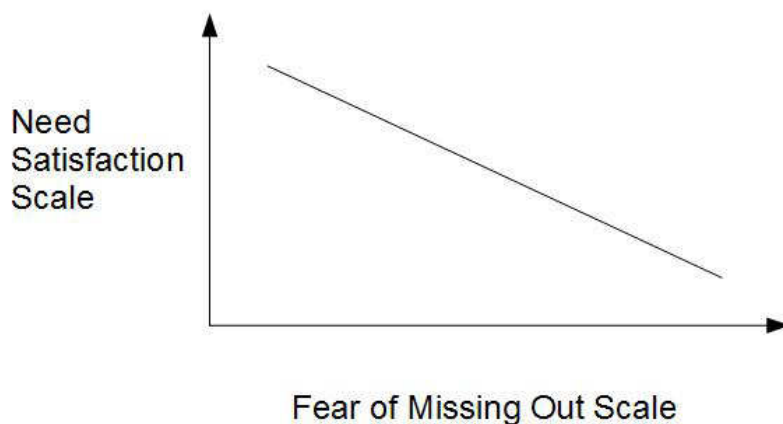


Figure 2.5 - Hypothetical negative correlation.

The second hypothesis predicted that high FoMO would go with low life satisfaction, and vice versa. The data produced a significant relationship.

The third hypothesis focused on social media use and FoMO. Individual differences in need satisfaction and in social media use were found to be mediated by FoMO.

In another study (Study 3), Przybylski et al (2013) tested three further hypotheses about FoMO with eighty-seven first-year undergraduates. The first hypothesis predicted that high FoMO would produce ambivalent feelings towards using Facebook (ie: both positive and negative emotions). The attitude towards use of Facebook was measured by the PANAS-X (positive and negative affect schedule) (Watson and Clark 1994 quoted in Przybylski et al 2013), which includes five positive and five negative adjectives. The data supported this hypothesis.

Przybylski et al's (2013) next hypothesis predicted that high FoMO would lead to checking of Facebook in lecture halls with wireless Internet (ie: "tuning out" of lectures), and it was supported by the data. Also individuals high in FoMO were more likely to pay

attention to their WMDs when driving, which was the third hypothesis tested.

Altogether the studies also found that the young and young males had higher FoMOS scores than older age groups and gender. High FoMO individuals used Facebook on immediately waking, before going to sleep, and during meals more often than low FoMO individuals.

Alt (2015) found that students with intrinsic motivation for learning were less likely to use social media in the classroom. This was based on a study of around three hundred undergraduates in Northern Galilee, Israel. The Social Media Engagement (SME) questionnaire was designed for the study, and this involved the rating of ten uses of social media (eg: reading updates; sharing news alerts) (table 2.5). From this, Alt (2015) suggested that FoMO should be seen as having multiple dimensions (social media engagement, news information engagement, and commercial information engagement) rather than being a general factor.

Each item scored between 1 ("never") to 5 ("always") in response to the statement: "To what extent do you do the following activities by using your laptop computer or mobile phone during class?":

Social media engagement:

- reading updates from others
- responding to personal updates of others
- updating personal information
- holding conversations

News information engagement:

- reading news updates via social media
- responding to news updates via social media
- sharing news alerts

Commercial information engagement:

- buying "on sale" products
- sharing commercial updates
- reading commercial updates

(Based on Alt 2015 table 1 p114)

Table 2.5 - Ten uses of social media covered by the SME questionnaire.

## **2.6. APPENDIX 2D - HIGH FACEBOOK USE**

Aladwani (2014) introduced the idea of "gravitating towards Facebook" (GoToFB) to cover the attraction of the social networking site. "One of the main reasons why Facebook is attracting ever expanding user-base is because it empowers them to engage in a multiplicity of social activities in a vibrant and responsive manner through the Web... Therefore, any effort advanced to

understand Facebook use must take the diversity of this situation into account... Facebook use not as an activity related to using just another communication medium but as deep human-technology interaction episodes in a social context. These multifaceted activities and interactions represent 'social experiences' that cover all the facets of the user's interface with Facebook to meet his or her needs" (Aladwani 2014 p292).

Aladwani (2014) developed a thirty-four-item questionnaire to cover the proposed eight dimensions of GoToFB (table 2.6).

"While I was interacting with Facebook, I felt gravitated toward exploiting its features to":

- initiate new relationships with people I did not meet before (Connecting)
- distribute content (Sharing)
- reduce my emotional worries (Relaxing)
- show off my coolness (Branding)
- arrange meetings (Organising)
- keep an eye on my friends (Monitoring)
- talk about my beliefs freely (Expressing)
- learn new things (Learning)

(Based on Aladwani 2014 table 2 p275)

Table 2.6 - Eight dimensions of GoToFB and items from questionnaire.

A step further is "Facebook addiction disorder" (FAD), which includes spending entire days or nights on the site, and when offline, thinking about the site (Zaremohzzabieh et al 2014).

Zaremohzzabieh et al (2014) interviewed nine postgraduate students in Malaysia who used Facebook for thirty-eight hours or more per week. Three themes emerged from the semi-structured interviews:

- Compulsion to check Facebook
- High frequency use
- Using Facebook to avoid online responsibilities.

For example, one male interviewee admitted: "I couldn't resist checking my Facebook and before I know it, few minutes had turned into many hours and I had not done my assignment at the end of the day" (Zaremohzzabieh et al 2014 p111).

Ryan et al's (2014) literature review of twenty-four studies found that measurement of FAD was inadequate, and this limited the legitimacy of the concept. The researchers distinguished different "types" of addiction

related to Internet use - eg: posting on social networking sites is "cyber-relationship addiction", which is different to "gaming addiction" with sites like "Farmville".

Fox and Moreland (2015) found a "dark side" to Facebook use in their twelve focus groups with US students. This "dark side" was described in five themes that emerged from thematic analysis:

i) Managing inappropriate or annoying content - eg: "The most frequently cited annoyance was Facebook's automated birthday notifications, which participants felt obligated them to post birthday wishes on that person's page. A female participant reported: 'You have to make sure to log on to their wall that day and say ''Have a great day!'' '. Another female participant agreed: 'Right, or then people are upset. It's totally the success of Facebook that we feel bad about not being on Facebook on that day. Isn't that some bullshit?'. Participants wanted to ignore these posts, but they realised doing so came at a social cost" (Fox and Moreland 2015 p171).

ii) "Being tethered to Facebook" - eg: One participant said: "I think Facebook is one more thing that you have to like be accountable for.. 'Hey, I posted on your Facebook wall. Why didn't you see it?... Like, why didn't you read my message?'.... [I] already have all these other things that I need to be doing and keeping track of and Facebook is just one more thing you have to be responsive to... it's kinda like work, like you have to do it" (p171).

iii) Privacy frustrations - Controlling who sees what information, including the fact that material on Facebook is searchable on the Internet.

iv) Social comparison - eg: In number of "friends": One woman described getting "friends" "seems like such an arms race".

v) Relationship tension - eg: One male participant said: "It's kind of stressful sometimes because it becomes drama, it becomes conflict. The stupid little fights, and it comes up bigger and bigger and bigger, just for these little reasons: oh, you didn't comment me back, or oh you didn't post this picture up. I think every relationship is like that - my past two girlfriends were like that the same way" (p172).

Fox and Moreland (2015) noted evidence of the "third person effect" (Davison 1983): "Although many participants downplayed their own negative interactions

on Facebook, they were quick to assert others posted negatively, created drama on or about Facebook, or overreacted to Facebook content. Later disclosures, however, revealed that, like their peers, these participants were responsible for negative content or events" (p173).

This was an example of inconsistency in what the participants said during the focus groups. Another inconsistency was claiming that Facebook was not important to them, but later telling stories that showed that it was. For example, one participant described getting upset over Facebook as "ridiculous", but later told of a falling out over comments made by a friend on Facebook.

A further inconsistency was where "users demonstrate a blind spot when it comes to their own Facebook negativity, although they continue to judge others" (Fox and Moreland 2015 p174). For example, another person caused a "drama" because they were "desperate for attention", but the speaker did so because of the situation (eg: in response to another person). This could be seen as an example of the fundamental attribution error <sup>12</sup>.

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<sup>12</sup> A survey of users of Facebook's social resolution tool suggested that individuals do not intend to cause offence. Among users requesting removal of content, only 20% thought the intention of the material was to offend, 44% said not, and the remainder felt that the posters "probably don't think about it" (Ho 2015).

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