

# **The Choice Phenomenon in the Digital Age: Is it Making Us More Depressed?**

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*Abstract: - This paper is the study of the choice phenomenon in the digital age as a contributing factor to depression. It investigates how the amount of decisions, as well as the types of choices that need to be made influence personal satisfaction. The aim of the study is to perform a review of the available literature on the theory of choice and its effect on stress and depression in the digital age. It draws on social cognition theory in order to shed light on the expectations of society in different aspects of our decision-making lives. A review of the choice phenomenon will be undertaken with a particular focus on how this relates to increasing rates of depression. The results present how existing theories of choice fair in their ability to predict mild to moderate depression, and how they align with the model presented in this paper. Limitations of studies to date will be discussed and ideas presented for further research.*

*Key-Words:- Choice Phenomenon, Digital Age, Depression, Choice Paradox, Stress, Satisfaction, Technology*

## **1. Introduction**

This paper is the study of the choice phenomenon in the digital age and whether this is a contributing factor to the rate of escalating depression evidenced in developed countries and regions of the world that are on the advantageous side of the digital divide. It focuses on how information technology influences the amount of decisions that need to be made in society by living in the digital era, as well have types of choices that need to be made, and how these factors influence personal satisfaction. The aim of this study is therefore to perform a review of the available literature on the theory of choice and its effect on stress and depression in the digital age. It will also draw on social cognition theory, in order to shed light on the expectations society places on an individual in their work, school, and personal lives.

The paper will firstly give a brief outline on the importance of depression. It will then outline the existing

literature on choice theory as background to the concept proposed in this paper, as well as an outline of social cognition theory, in order to put into context how this affects individuals living in the digital age. The author will then present their own theory on the choice phenomenon, focusing on how this applies to increasing rates of depression in the digital age.

The methods section will outline the search strategy used in conducting the review on the choice phenomenon with a particular focus on how this relates to depression. The results section will show how the existing theories of choice fair in their ability to predict mild to moderate depression, and how they align with the model presented in this paper. Limitations of studies to date will be discussed and recommendations made for further research.

## 2. Background and Rationale

Depression is a major global disease burden and is predicated by the second most common cause of global disability by 2020 [1]. Globally, depression affects about 121 million people [2]. The prevalence of depression is highest in developed countries [3]. This includes countries with vast investments in the underlying infrastructure that allows tools such as the Internet and the World Wide Web to operate [4]. Relative to non-developed countries, developed regions of the world have access to information and education online, as well as the flexibility of working from home or whilst traveling. With such convenience and luxury available, the question has often been posed as to why the prevalence of depression is rising in developed countries.

### 2.1 Different problems different stressors

In this global and segregated world, people in developed countries have different stressors to those in non-developed countries. They are not having to be too concerned with the provision of food on a daily basis and the rates of infectious disease, and generally have access to public welfare, should they need it [3]. People in developed countries, have a lifestyle which predisposes them to different types of stresses such as the pressures of work and career building, escalating mortgage repayments, balancing family life, education and constant retraining.

The Department of Employment and Industrial Relations (2006) [5] reports that work, family and lifestyle statistics have changed dramatically compared to the last few decades. In over 56% of cases, both parents work, and work longer hours – only 24% worked a 40 hour week in 2002 compared to 39% in 1982 (prior to digital communication). In this same period, the amount of people working over 50 hours per week rose from 20% to 30% [5].

“The Organisation for Economic Co-operation and Development (OECD) Employment Outlook (2004) ranks both Australia and Slovak Republic as the 5th highest country for hours worked per worker, behind the Czech Republic, Poland, Greece and Mexico.” All of these countries have relatively high level of technological infrastructure, more choices and higher levels of depression than less developed regions of the world [5].

There is also a blurred distinction between work time and personal time [6] for those who are teleworking. This includes almost 45 million US workers (2004) [7]. They experience the demands of working virtually on call through mobile phones and e-mail. It is these types of environments that are conducive to constant stress and

constant choice having to be made in their daily lives, which were a lot simpler prior to the advent of the Internet and digital communication.

## 3. The choice phenomenon

As more people are gaining access to the Internet, there is less of a need for them to make the effort to go and visit each other, get together socially, have children play together on the street, or even write a letter. Just like television, the advent of the internet has changed the way that we live and work and has significantly changed the habits of our daily lives, with more people working, and working longer hours.

Prior to the advent of the Internet children would come home from school and before or after doing their homework would ride bikes to play on the street and interact socially with each other. The rates of obesity were not as high, despite television. In developed countries in this digital age, however, they are more likely to get home from school, log on to the computer and e-mail or SMS their friends, and spend hours playing indoor digital individualised computer games, rather than outdoor physical or socially interactive activities. This is evidenced by the increasing rates of obesity in children in developed countries [8], particularly those of the USA and Australia. Prior to the advent of the Internet, there was not the choice of whether to play outside, or stay inside and be on the computer in order to talk to each other socially; children and young adults would interact in a healthier way. Adults also find it easier when they get home to continue working as they no longer leaving their work at the office when they take their mobile phone and a laptop with them.

Whether life was easier just a few short decades ago is debatable, but it certainly was less complex. Prior to the digital age and the concept of being constantly available, whether it be for work purposes, family, or friends, it is undeniable that such a stressor, either positive or negative, however the reader may experience it, was not present prior to the digital age. Sibley (1998) [9] reports that today's technology-enabled communications tools are leading to a new workplace health hazard in terms of constantly messaging via telephone and e-mail leaves workers feeling overwhelmed. Reports have shown that on the one hand, technological devices such as wireless and handheld laptops, PDAs and mobile phones make life a lot easier because of being able to keep up and communicate during waiting times like at the airport, etc., so people are able to be more productive, but are not entirely satisfied [6], and from just about anywhere on

Earth [9] within signal range. However, it has also been reported that this same "convenience" has also made life a lot more stressful as that very possibility has turned the tide on the culture of work and availability into, to varying degrees, an expectation and social norm [6]. Barry Schwartz (2004) [10], has recently written about this in his book entitled "The Paradox of Choice: Why More is Less" when he talks about to "satisfiers" as people who make choices that are "good enough" for them to be happy with and at the other end of the spectrum are "maximizers" who spend more time researching their choice, have a harder time deciding and in the end are less satisfied with their decision than the "satisfiers". He draws on the definitive studying this area by Iyengar and Lepper (2000) [11]. This study reveals examples of shoppers who are happy with a display of 6 jams rather than 30, students who are happier and submit higher quality essays when they have a choice of 6 rather than 30, or people who think they want choice in medical treatment for cancer, but in actual fact do not want the control and responsibility. Schwartz [10] also explains how satisfiers are a more likely to have more better job satisfaction and be less stressed, anxious and frustrated than maximisers, who obsess over the whole process a lot more and spend a longer time making a decision

## 4. Social Cognition

The author draws on the subtle but complex social cognitive theory of the relationship between people and the environment as a way towards understanding individual's behaviour in the digital age. Nutbeam and Harris (1999) [12] neatly summarise the principle of reciprocal determinism which describes how "an individual, their environment and behaviour continuously interact and influence each other", referring to the notion of modifying behaviour through social influence. The example given is the one of modifying social norms as one of the most powerful ways of helping people to quit smoking. The same theory can be applied to modifying social norms when it comes to societal expectations and decision-making, in order to help people moderately disengage and pull back a little and not be obsessed about technology. Making this a social norm would be the most powerful way of promoting a more balanced lifestyle. There are three main cognitive factors that affect and influence how a person is affected by their behaviours and environments. These are described here in the context of how they relate to the choice phenomenon.

### 4.1 Learn by observing both behaviour and rewards of others

A young person climbing the career ladder and doing 50 to 60 hours in their company in order to try to impress higher management may try to change this behaviour by looking at somebody they are influenced by and look towards as role model. They can then follow the example set by this role model and switch their phones off to separate from work when they get home for dinner, as well as not take their laptop with them.

### 4.2 The capacity to anticipate and place a value on expectations

This cognitive element within social cognitive theory places emphasis on the importance of understanding that the personal beliefs and motivations that underlie different behaviours are key ingredients in this short term and tangible benefits, which can be aligned here is "instant rewards". A way of putting this into practice within the choice phenomenon of always living this on-call, information technology orientated lifestyle, is to let peers and friends know the limits of work versus personal life. Practical examples include auto reply e-mails to alert the sender of the receiver being unavailable during their downtime.

### 4.3 Self efficacy

Self efficacy is the third pillar of cognition within social cognitive theory, which refers to believing that the behaviour is possible; also known as "behavioural capability". Translated into information technology terms in line with the theory of this paper, this would mean that the individual has to take steps in trying this behaviour, believing it will work, and realising that the world keeps rotating even if they are not on call 24/7.

## 5. Aim and Objectives

The aims and objectives of this study are to:

- examine the choice phenomenon in the context of the digital age as a contributing factor to increasing rates of depression in developed countries
- to perform a review of the available literature on the theory of choice and its effect on stress and depression in the digital age

## 6. Hypothesis

The choice phenomenon influences the stress level of an individual which in turn influences. rates of depression

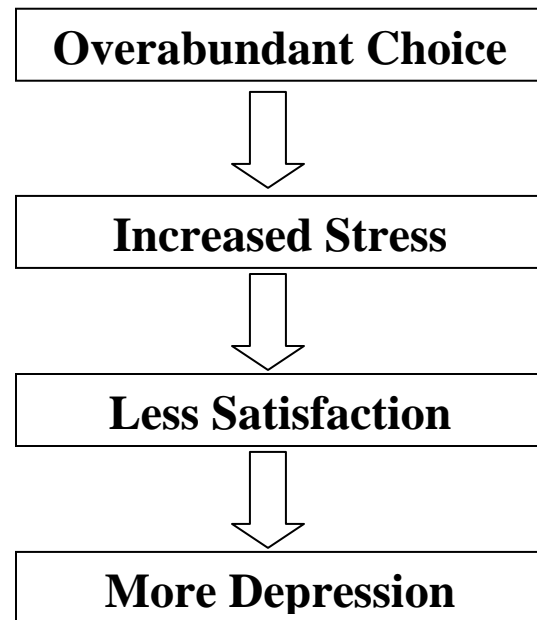
## 7. The choice phenomenon model

The model underlying the hypothesis in this study consists of a series of steps. The first part of this model starts with an individual being in a position where they have to make a choice. They are not comfortable with this and it can be either a choice that is a hard decision to make or commonly, and more closely aligned with the theory explored in this paper, that of having too many choices in this day and age. The Internet alone gives a person unlimited choice in what they read, view, buy, who they communicate with, and what information they can find. Internet shopping is one example. Rather than going to the local mall and choosing from the variety available, which is normally limited by shelf space, the current Internet consumer has exposure to a limitless variety of the same product, which can be bought through any brand or country in the world. Whilst the position of this paper is all for variety, it is believed that too much choice can be a stressor that, after a certain threshold, is no longer positive.

The next step in the model is therefore a closer look at the amount and type of stress involved in the choice phenomenon. The right amount of choice, which often depends on the individual and their personal threshold for variety in decision making is obviously a positive one. It is however, when this personal threshold is reached and exceeded that the exciting positive choice of variety, turns to stress, indecision, personal doubt, dissatisfaction, and even regret [10].

Such reactions naturally lead to the next step in the choice phenomenon, which is a general feeling of dissatisfaction in either the short or long term. This dissatisfaction and constant pressure to make choices, deal with an increasing amount of choices, and having to constantly weigh up the options may often lead to a person wondering whether they made the right choice, and in more serious circumstances lead the person to be plagued with self-doubt. This type of constant pressure, which is beyond the personal threshold of the right amount of choice, will start to make a person feel drained and less satisfied with the final outcome than if they had less options and didn't have to deal with all of these issues.

The conceptual model of the choice phenomenon on is illustrated in Figure 1.



**Fig. 1: Choice Phenomenon Conceptual Model**

## 8. Method

In order to examine existing literature on choice theory as a background to the conceptual theory of the choice phenomenon as proposed in this paper, the author started by examining the literature published to date.

The author conducted the literature search on the Medline medical database (1966 to present) in an attempt to identify any links between choice theory and depression. Search terms included various combinations such as ("depression" and "choice") and ("depression" and "choice theory"). But this yielded no relevant results. A search using the key words "choice theory", was also attempted but this led to 45 results which were not relevant or specific enough to the current study. A wider search was then performed on a search engine Google, starting with the search term "choice theory" and a couple of similar combinations, which only yielded two relevant responses. One was a student paper [13], which was a most relevant finding. It was a self-report of a student's personal experience in having too much choice in the college courses she had to choose from at the beginning of each semester, and how this was a direct cause of heightened stress. She states:

“Add/Drop week might just be the most stressful week of my semester. Maybe, just maybe, even more stressful than finals. Some people, such as

my parents, view the ten-day fiasco as a blissful opportunity for discovery. But others (like me) just can't handle the thought of so many choices. The class-search is inextricably tied to the most nerve-racking book I own: the Cornell Courses of Study, 2006-07. Just the thought of those 690 pages filled with endless options make my heart palpitate a bit faster. When choosing courses each semester, my over-analytical neuroses kick in. The very fact that I have so much choice sets me up for dissatisfaction with whatever decision I make. I'll always wonder whether I made the right one, or if I'd have benefited more from the route not taken."

This quote clearly demonstrates the student going through at least the first three phases of the choice phenomenon model.

It was soon apparent that scholarly material on the subject, which was relevant, was rare to come by, especially when relating the choice theory to depression. The search yielded five sources as possible references for reflection, where four referred back to or originated from Schwarz's book [10] entitled "The Paradox of Choice: Why More is Less." This along with one of the journal articles at the time of writing [11] are the definitive sources of scholarly published material on whether the choice phenomenon leads to an increase in depression. This other relevant finding was a journal article in the *Journal of Personality and Social Psychology* [11]. The results of these findings and how they relate to the effect of choice in the digital age on depression, is outlined below.

## 9. Results

A study by Iyenger and Lepper (2000) [11] is an important one because it describes the hypothesis of choice overload, meaning that although an "extensive [number of] choices may still be seen as initially desirable, it may also prove unexpectedly demotivating in the end". They found that customers were more likely to purchase from a limited number (n=6) of Jams versus a more intensive selection (n=24) in a grocery store. They also found that more students completed an essay assignment in introductory social psychology and submitted a higher quality assignment when they had a choice of 6 assignments, versus a choice of 30. They similarly found that when consumers were given a choice of six chocolates, they felt that this was "about right" compared to a choice of 30, which was "too many".

Schwartz draws on these findings, quoting the jam, chocolate and essay experiments and wrapping it in a theory of maximizers as opposed to satisficers. He also

identifies several processes that help to explain why an increase in choice decreases satisfaction. He states that:

"Greater choice:

- increases the burden of gathering information to make a wise decision
- increases the likelihood that people will regret the decisions they make
- increases the likelihood that people will anticipate regretting the decision they made, with the result that they can't make a decision at all
- increases the feeling of missed opportunities, as people encounter the attractive features of one option after another that they are rejecting
- increases expectations about how good the chosen option should be...
- increases the chances that people blame themselves when the choice has failed to live up to expectations..."

This therefore shows that consumers, be they students or shoppers, as in the cases studied, like to have some choice, but are unhappy and have more stress placed upon them when the choice gives too much variety in terms of having many decisions to be made. This increased level of stress, which is commonly evidenced in college students choice of courses [10,11], leads to less satisfaction in their final choice and less motivation overall. This increased stress and decreased level of motivation may be a contributing factor to increasing levels of depression. This is particularly evident in college students who are of an increased prevalence of depression in the 18 to 24-year-old age group [14]. This makes sense as at this time in life they are often making many other choices outside of the choice of courses. They decide on which career to undertake, which subjects to do, which career path to follow, what type of job they will apply for, where to send their resumes, what type of lifestyle they will choose, whether they will get married straight away or wait until a bit older, who they will date, what type of life choices they will make, choices about their sexuality, as well as choices about where and with whom to live. All of this at a young age is a lot to deal with and leads to increasing levels of depression in University aged students. Such findings can also be generalised to the wider population, as evidenced in the studies conducted to date.

## 10. Conclusion

It can therefore be seen how the current published evidence to date is aligned with the conceptual model of the choice phenomenon on how greater choice leads to greater stress levels in making a decision; just by having

too much choice people are more prone to less satisfaction with the outcome. This pressure of making more choices and having less satisfaction lead to increased rates of depression.

## 11. Future Research

The most significant study conducted to date is [11] has important findings and implications for the increasing number of choices people are facing in the digital age. Further research needs to be conducted in order to enhance the existing literature. The author intends to conduct a study similar to this, which asks consumers and students about their choice habit. They will be asked specifically about information technology and how this affects the choices they make in their lives, including the areas of work life balance and information overload. Depression scores will be collected after the choice has been made and had time to be experienced in order to determine a direct causal relationship between the choice IT affords in developed countries in the digital age, as compared to less technologically-dependant lifestyles.

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