

# Kierkegaardian anxiety in modern psychological research

Aamir Sohail<sup>a,b,c,\*</sup>

<sup>a</sup>Centre for Human Brain Health, School of Psychology, University of Birmingham, Birmingham, UK, B15 2TT

<sup>b</sup>Institute for Mental Health, School of Psychology, University of Birmingham, Birmingham, UK, B15 2TT

<sup>c</sup>Centre for Integrative Neuroscience and Neurodynamics, School of Psychology and Clinical Language Sciences, University of Reading, Reading, UK, RG6 1QE

\*Correspondence should be addressed to A.S. (axs2210@bham.ac.uk)

The philosopher Soren Kierkegaard argued in his 1844 work ‘The Concept of Anxiety’ that anxiety is a vital aspect of the human condition, a consequence of freedom and choice. In this article I argue that this, along with other key concepts of anxiety identified by Kierkegaard including the avoidance of past negative experiences, and education in choice outcomes, are supported by modern theories of anxiety using evidence from social and experimental psychology as well as psychiatry. A proposed future body of work involving anxiety and free will stemming from Kierkegaard’s philosophy is also discussed.

## Defining and updating Kierkegaard’s definition of anxiety

In 1844, writing under the pseudonym of ‘Vigilius Haufensis’ Soren Kierkegaard published ‘The Concept of Anxiety’ (Kierkegaard, 1844), a seminal work in which he defines anxiety as a fundamental state of the human condition. Specifically, Kierkegaard links anxiety with the nature of freedom and the possibility of dealing with the subsequent consequences of our actions. In doing so, he also differentiates anxiety from more concrete emotions such as fear, with anxiety representing a more metaphysical construct:

*“Therefore, I must point out that it is altogether different from fear and similar concepts that refer to something definite, whereas anxiety is freedom’s actuality as the possibility of possibility.” (Kierkegaard, 1844) (p. 42)*

This is demonstrated through the Biblical story of Adam and the Apple, in which Kierkegaard posits that the feeling of anxiety is instilled through Adam not by the nature of the choices that can be made (i.e., good vs evil), but instead by virtue of *having the possibility to choose*. He writes:

*“The explanation is therefore subsequent. The prohibition induces in him anxiety, for the prohibition awakens in him freedom’s possibility. What passed by innocence as the nothing of anxiety has now entered into Adam, and here again it is a nothing-the anxious possibility of being able.” (p. 44)*

Reflecting man’s free will, anxiety therefore can be distinguished from fear, with fear instead reflecting the negative response (from God) associated with the chosen option. Kierkegaard carries this narrative in the subsequent chapter, using it to make the distinction between two types of anxiety: objective and subjective:

*“In the strictest sense, subjective anxiety is the anxiety that is posited in the individual and is the consequence of his sin... By*

*objective anxiety we understand, on the other hand, the reflection of the sinfulness of the generation in the whole world.” (p. 57)*

*“...anxiety has two analogies, the objective anxiety in nature and the subjective anxiety in the individual...” (p. 60)*

Therefore, the example given previously is one of subjective anxiety. Objective anxiety on the other hand can be more accurately described as the anxiety instilled through one’s environment. In the modern sense, an important job interview may be said to have an objective anxiety through its anxiety-provoking nature, by facing a tough examination from individuals in a position of power. However, it is through subjective anxiety that Kierkegaard re-states the relevance of freedom, comparing it to a state of vertigo:

*“Anxiety may be compared with dizziness. He whose eye happens to look down into the yawning abyss becomes dizzy. But what is the reason for this? It is just as much in his own eye as in the abyss, for suppose he had not looked down. Hence anxiety is the dizziness of freedom ... In anxiety there is the selfish infinity of possibility, which does not tempt like a choice but ensnaringly disquiets with its sweet anxiousness.” (p. 61)*

Again, the idea of anxiety resulting from the ability to choose, rather than a consequence of choosing, is stated. It is not the action of deciding to look over the cliff edge, but rather of having the choice to do so if one wishes, which causes subjective anxiety. Kierkegaard notes that this anxiety can be affected by one’s past experiences or be manifested towards one’s future:

*“For freedom, the possible is the future, and the future is for time the possible. To both of these corresponds anxiety in the individual life. An accurate and correct linguistic usage therefore associates anxiety and the future. When it is sometimes said that one is anxious about the past, this seems to be a*

*contradiction of this usage. However, to a more careful examination, it appears that this is only a manner of speaking and that the future in one way or another manifests itself. The past about which I am supposed to be anxious must stand in a relation of possibility to me. If I am anxious about a past misfortune, then this is not because it is in the past but because it may be repeated, i.e., become future.” (p. 93)*

This represents another similarity between Kierkegaard’s interpretation and the modern definition of anxiety, as individuals with anxiety consistently brood and ruminate over negative past events, over-projecting the likelihood that such events will re-occur in the future. Indeed, before concepts such as ‘mental-time travel’ or ‘operant conditioning’ where associations between stimulus and response and the likelihood of repeating actions were understood, Kierkegaard accurately describes future-oriented avoidant behaviour in anxiety stemming from a negative experience. This can be demonstrated by a situation where an individual with anxiety has a negative experience at a social event. Subsequently they may choose to avoid all social events from then on, as dictated by the logic:

- 1) Personal experience at social event -> negative experience
- 2) All social events -> negative experiences

Kierkegaard then links this notion of past and future-oriented anxiety with the theme of ‘possibility’, by defining the continuous aspect of living as a constant movement between states, with possibility (what we may term today as ‘uncertainty’) in these states leading to anxiety:

*“The history of the individual life proceeds in a movement from state to state... This state is the object of psychology. To the extent that in every state possibility is present, anxiety is also present.” (p. 113)*

In the final chapter of the book, Kierkegaard then writes on the essential nature of anxiety, and argues that it is an essential part of the human condition, one which is ubiquitous.

*“However, I will say that this is an adventure that every human being must go through-to learn to be anxious in order that he may not perish either by never having been in anxiety or by succumbing in anxiety. Whoever has learned to be anxious in the right way has learned the ultimate. If a human being were a beast or an angel, he could not be in anxiety.” (p. 155)*

He firstly suggests that – to not succumb to anxiety – we must endure it, as only then can we build an appropriate response. This sentiment is echoed a few pages later, in which he acknowledges that whilst anxious situations will still exist regardless of previous experience, the effect of this experience diminishes subsequent episodes of anxiety.

*“...but only he who passes through the anxiety of the possible is educated to have no anxiety, not because he can escape the terrible things of life but because these always become weak by comparison with those of possibility.” (p. 157)*

*“Whoever is educated by anxiety is educated by possibility...” (p. 156)*

Kierkegaard links this education through experience with understanding the nature of possibility, a central component of his definition. However, the exact meaning of ‘possibility’ in this context is unclear. One interpretation, which would fit with modern evidence, relates to understanding the true nature of events and the associated outcomes. Take again the example given earlier, where an individual with anxiety decides to avoid all social events due to a single negative occurrence. Being educated (by targeted behavioural interventions) in part teaches the individual to not over-generalise one specific instance by objectively thinking about the causal nature of such events (i.e., Was I the cause of the negative experience in the first instance? How likely is it to recur in a future event?). In this way, one is educated by virtue of having anxiety to identify the underlying maladaptive patterns of thinking, making it easier to identify similar future patterns. Another interpretation relates to the resolution of uncertainty, in which the possibilities (or consequences) of choice are made certain to the individual. Sticking with the same example, this could be demonstrated by changing the information made available to the individual regarding the event’s attendance from ‘between 50-100 attendees’ to ‘75 attendees’, reducing a source of uncertainty. Whilst the exact meaning of ‘possibility’ is unclear, Kierkegaard’s narrative when defining anxiety as a consequence of freedom and choice can be summarised as follows:

1. Anxiety stems from the quintessential human feature of freedom
2. This is primarily due to the concept of choice itself, more so than the outcome
3. Anxiety can be influenced by (the avoidance of) negative past experiences
4. Where possibilities are present, so is anxiety
5. Anxiety is a natural part of the human condition
6. Education in ‘possibility’ can help to alleviate – but not eliminate - anxiety

As these concepts were made with a very limited understanding of the human mind, I therefore propose a modern interpretation, one simply adapting Kierkegaard’s dialect, but not the underlying theory:

1. Anxiety is associated with the nature of *uncertainty*
2. This can be due to both the *feature* of choice, as well as the concept of choice itself

3. Anxiety can be influenced by (the avoidance of) negative past experiences
4. Modulating one's thought patterns *towards possible outcomes* can help to alleviate anxiety

The rest of this paper will now discuss evidence supporting the four points above using evidence from experimental psychology and cognitive neuroscience, with areas for future development proposed.

## **Evidence for Kierkegaardian psychology in modern psychological research**

### **Anxiety is associated with the nature of uncertainty**

Responding to uncertainty often results in changes to one's preparatory behaviour, which whilst adaptive in relevant circumstances, is inappropriately exaggerated among those with anxiety. The exact definition, cause and symptomatology of anxiety is an ongoing debate, with initial simplistic models being replaced by complex, multi-faceted models in recent years. One example of the latter, the 'Uncertainty and Anticipation Model of Anxiety' (UAMA) (Grupe & Nitschke, 2013), whilst self-marked as not either a complete model of anxiety, nor a replacement for existing models, is nevertheless a popular theory utilising a neuroscientific framework based upon empirical evidence. The UAMA lists five key processes involved in responding to threat uncertainty that function maladaptively in anxiety:

1. Inflated estimates of threat cost and probability,
2. hypervigilance,
3. deficient safety learning,
4. behavioural and cognitive avoidance,
5. a heightened reactivity to threat uncertainty.

Of these, processes one, two and five are relevant when pertaining to the nature of uncertainty. Reflecting the first, an inflated estimate of threat cost and probability stems from continued reinforcement of a negatively framed event. This subsequently affects the valuation and probability of future decisions that are similar in nature, making them less likely to be chosen. Reflecting the second and fifth points, individuals with anxiety-induced hypervigilance (Bar-Haim et al., 2007), spend more time scanning for threats within the social environment (Armstrong & Olatunji, 2012). Importantly, hypervigilance towards the expectation of aversive stimuli also increases, especially when the delivery of these stimuli is unpredictable, measured by the magnitude of physiological responses (Davis et al., 2010). Ultimately, the uncertainty of an event is a key component underlying the subsequent response among those with anxiety, reflecting the modern take on Kierkegaard's theory.

### **Anxiety is influenced by the components and availability of choice**

Choice is commonly assessed through studies investigating decision-making, a facet of behaviour affected by multiple components including economic and social factors. Given

the increased tendency to avoid situations with specific features (e.g., uncertainty), due in part to a change in focus (e.g., on threat-related information) as similar features are also apparent with individual decisions, those with higher levels of anxiety display changes in their decision-making preferences (Grupe, 2017; Levy, 2017). A key example of this pertains to risk-aversion (Tversky & Kahneman, 1992) – a preference for higher-probability, lower-value outcomes over lower-probability, higher-value outcomes. Whilst a normative level of risk-aversion is expected – for example, if given a choice between a certain gain of £50 or a 50% chance of winning £0 and a 50% chance of winning £110, many people would select the certain amount, despite the fact that the uncertain lottery has a higher expected value – risk-aversion is more pronounced in individuals with high levels of anxiety (Hartley & Phelps, 2012). This is commonly observed in tasks such as the Balloon Analogue Risk Task, where participants are instructed to inflate a balloon – gaining more money/points the longer they choose to inflate it – but run the risk of the balloon bursting at a random point and all the cumulative reward for that trial being lost. Individuals with higher levels of trait and social anxiety subsequently have earlier stopping points (Maner et al., 2007), reflecting either a deficit in learning or a preference for low risk despite uncompromised learning (Bishop & Gagne, 2018).

The literature above describes changes in behaviour attributed to the nature of the choice one is faced, but an additional component of anxiety proposed by Kierkegaard (one which is arguably in his view more important) is the option of having a choice at all. Take for example the scenario where you are choosing a restaurant to have dinner. There are dozens of potential options, each with its advantages and disadvantages over the others, with the final decision stemming from a calculated weighing of numerous factors including price, distance, menu options, reviews, etc. Would you be faced with the anxiety of having to make this decision, or would you rather have the decision made for you? The initial theory set by Lewin (Lewin et al., 1939) and Goldstein (Goldstein, 1939) stating that the lack of control over one's environment would subsequently increase anxiety, was initially supported (Stotland & Blumenthal, 1964). However, conflicting results subsequently led to opposing theories, with the first (Janis & Mann, 1977), arguing that the constraint of having to choose among competing alternatives may plunge the individual into a conflict situation, heightening subjective stress and often resulting in anxious, panicky behaviour. The second on the other hand (Averill, 1973), argued that providing individuals with a choice instead strengthens their perceived sense of control over a situation, decreasing anxiety and stress. A study attempting to reconcile this issue (Keinan & Zeidner, 1987), supported the latter, namely that the provision of decisional choice in an evaluative situation enhances the examinee's perceived feeling of control over the source of the threat, thereby lowering state anxiety.

However, the initial emergence of multiple theories in describing the effect of choice options on anxiety itself accurately reflects the underlying variance in the human response, with the results discussed above not manipulating a key facet of the decision: the decision complexity. Reducing choice in a five-question math test does not accurately reflect the same phenomena observed in real-world decisions. Subsequently, the next phase of research in this area shifted from the field of behavioural psychology to applied marketing and social psychology. A key publication in this field (Iyengar & Lepper, 2000) demonstrated for the first time the possibility that, although having more choices might appear desirable, it may sometimes have detrimental consequences for human motivation. This framework was subsequently extended to another domain: choosing with the inclusion of unattractive options (Botti & Iyengar, 2004). Within this framework, whilst choosers experienced greater anticipated and experienced satisfaction than non-choosers when the decision-making context was more preferred; when the choice was less preferred, choosers experienced lower anticipated and experienced satisfaction than non-choosers. These findings ultimately reflect that the nature and features of the decision-space adversely affect our wellbeing. Whilst the prevailing theory suggests the desire to exercise control, and thus, the desire to make choices, is a primal human behaviour essential for survival, the psychological impact of choice likely depends on the available cognitive resources of the decision-maker in the given context, as well as the subjective value of the choice contents (Botti et al., 2023; Leotti et al., 2010). Indeed, both neuroimaging and behavioural experiments point towards a ‘Goldilocks effect’ regarding the ideal number of options for any decision (Reutskaja et al., 2018; Reutskaja & Hogarth, 2009).

Whilst research into choice overload is popular (Reutskaja et al., 2020), in contrast, very little research in the fields of cognitive and computational neuroscience has been conducted with respect to free vs restricted choice. One such study however, examining in part the influence of conflict upon learning in both free and instructed trials found that learning rates were higher in the former versus the latter (Sidarus et al., 2019), suggesting that we might learn more about the consequences of actions that are driven by our own intentions and motivations than for decisions made for us. Regardless, existing evidence from psychology and marketing research highlights the importance of both the decision-space, as well as the choice options on well-being, supporting Kierkegaard’s view.

### **The influence of past experience**

As with other similar mental health conditions, in anxiety, the effect of a negative event continues to manifest long after the event itself. This is propagated by post-event processing which may feature the constant replaying of the event in one’s mind (rumination). Post-event processing is an important facet of social anxiety disorder (SAD) in particular, as the construction of a negative event can occur

in response to what may objectively be a positive or neutral event, due to biased framing. This can subsequently lead to a lower learning rate and updating of one’s beliefs regarding social interactions. Take for example a situation where an individual with SAD goes to the cinema to watch a movie. At the ticket booth, the ‘receptionist’ makes a light-hearted joke about something the individual says. Whilst this may be a positive experience for some, after the event an individual with SAD may replay the joke and frame it negatively. Subsequently, they will decide going forward that cinemas in general will produce a negative experience and should be avoided.

Post-event rumination not only preserves social anxiety by consolidating negative impressions the individual may hold about themselves and preserving negative memories of past perceived social failures but can directly lead to negative assumptions about future social situations, i.e., pre-event rumination (Brozovich & Heimberg, 2008). Pre-event rumination then leads to anticipatory anxiety, with thoughts dominated by memories of past failures and simulated negative constructs of themselves when in the social situation. This may result in avoidance of the situation altogether, but if the socially anxious individual does enter the social situation, they will likely do so in a negative self-focused processing mode, which in of itself makes a negative experience more likely (Modini & Abbott, 2016; Penney & Abbott, 2014; Wells et al., 1995).

The altered representation and processing of past events is a primary facet of anxiety, reflecting Kierkegaard’s view. I now discuss his final point regarding how one can help to alleviate anxiety through modulating one’s thought patterns, effectively predicting modern-day psychotherapy.

### **Modulating thought patterns towards choice outcomes**

Psychotherapy, reflecting Kierkegaard’s view, relies upon modulating one’s thought patterns towards the outside world, by teaching the individual to objectively assess and challenge their existing biases and promoting exploratory behaviour to reinforce this. Cognitive-behavioural therapy (CBT) (Beck, 2020), is one such example, incorporating two types of therapy: exposure and cognitive therapy (Borza, 2022; Kaczurkin & Foa, 2022). Exposure therapy attempts to correct biased worldviews which individuals are not able to realise are false as avoidance leads to the avoidance of such contradictory information. This is done through imaginal exposure, where the patient vividly imagines the feared situation and does not avoid their subsequent anxiety, and/or in vivo exposure, which involves a gradual approach to places, objects, people, or situations that were previously avoided although they are safe. Cognitive therapy aims to modify the content of thoughts to reach a more objective evaluation of situations, with the goal for the individual to identify and challenge against their own cognitive biases, such as overgeneralization or maximization of danger. Ultimately, the specific treatment components of CBT,



generally include various combinations of psychoeducation about the nature of fear and anxiety, self-monitoring of symptoms, somatic exercises, cognitive restructuring, imaginal and in vivo exposure to feared stimuli while weaning from safety signals, and relapse prevention (Arch & Craske, 2009; Otte, 2022). These psychotherapies lead to significant reductions in anxiety-related behaviour, with meta-analyses confirming that CBT is by far the most consistently empirically supported psychotherapeutic option in the treatment of anxiety disorders (Otte, 2022).

To summarise, modulating thought patterns towards potential outcomes is a key component of psychotherapy and lies central to Kierkegaard's final point regarding anxiety. However, contrary to the view that anxiety can only be alleviated and not eliminated through 'education about possibility', modern therapies are able to do so. Whilst clinically, anxiety can be eliminated, anxiety is also a natural component of the human condition, one which will always exist in some sub-clinical capacity. This same factor limits inferences made by Kierkegaard in general, hence why certain changes to his statements are necessary.

## Conclusion

The main points made in the Kierkegaardian interpretation of anxiety align with the modern view in the fields of psychology and psychiatry. This includes dealing with the consequences of our choices, and the avoidance of negative past experiences. Kierkegaard's method of reducing anxiety by modulating thought patterns towards outcomes and avoiding past negative experiences are supported by their implementation in cognitive-based therapies.

However, one domain which requires further investigation is the notion of having free choice. Whilst it has been investigated in applied psychology paradigms, the neurocomputational mechanisms of forced vs free choice has yet to be understood. Such studies should be undertaken including both small-simple and large-complex decisions, possibly reflecting the difference in anxiety-provoking behaviour observed between the two in the existing literature. If observed, all of Kierkegaard's hypotheses regarding freedom and anxiety will be validated.

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### **Competing interest statement**

The authors report no competing interests.