# From Algorithmic Culture to Algorithmic Anxiety

We would rather be ruined than changed  
We would rather die in our dread  
Than climb the cross of the moment  
And let our illusions die.

— W.H. Auden, The Age of Anxiety

The point of departure of this chapter is the observation that facial recognition algorithms, trading algorithms and search algorithms have become addressees of anxiety in public debate, in academic disciplines, and contemporary art. The entanglement of human beings in algorithmic networks has become a cause of concern for artists and critics alike. The anxiety evoked by algorithms is not a sentimental subjectivity or a personal pathology related to one's feelings regarding algorithms. What artists and academics share are worries about the possible effects caused by the developing entwinement of humans with algorithms on societies and the people living in them. This has created a fervour around the supposed corresponding loss of certain aspects of the self, of what constitutes visible reality, and of the possible affordances of algorithmically produced information on socio-political relations.

As mentioned in the introduction, I am not primarily concerned about the computational, mathematic or technical aspects of algorithms—what they are or what they do. Neither do I seek to find one underlying and comprehensive cause for a multitude of anxieties, as that would not do justice to the different concerns algorithms raise and also runs the risks of falling in the trap of generalisation. The different anxieties conditioned by different types of entanglements reveal a more complicated image. Therefore, the following chapters are structured around specific types of algorithms and the different anxieties they inspire.

To start this chapter, I briefly introduce the main focus points of concern in the academic literature about the close-knit relationship of humans to algorithms—namely, what I describe as algorithmic governance, algorithmic selves, algorithmic opacity, and algorithmic replacement. In the second part of this chapter, I present an outline of the central concepts and dynamics that structures Kierkegaard's conception of anxiety—the self as a synthesis, the limits of knowledge, and the possible. Anxiety concerns the possibility of the possible. The possible exceeds the self and defies rationalisation, systematisation, prediction, and calculation. After sketching out the major constituents of Kierkegaard’s account of anxiety, I move to and close this chapter with a first rough sketch of the concept of algorithmic anxiety, which will be further developed in the chapters that follow this one.

### Algorithmic Governance

Concerns about the dynamics and mechanics between algorithmic systems and human actors and between the facial recognition algorithms, trading algorithms and search algorithms and the social seem to be widely shared amongst a growing group of academics. Algorithms, in general, are associated with having and exerting commanding powers. The nature and extent of these powers are based on the different ideas critics have of how algorithms organise, produce, order or impede socio-political life. Nicholas Diakopoulos (2013), for instance, sees algorithms as powerful wire-pullers. He writes: "we're living in a world now where algorithms adjudicate more and more consequential decisions in our lives. Algorithms, driven by vast troves of data, are the new power brokers in society" (2013, p.2). In *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy,* Cathy O’Neil (2016)writes that decisions such as whether someone gets a job, gets into a particular college, gets sentenced to jail, gets a loan or is considered a possible fraud, is increasingly controlled by algorithmic routines (O'Neil, 2016, p. 13). What she calls "weapons of math destruction" are "churning away in every conceivable industry" (p. 11). This situation "slams doors in the face of millions of people, often for the flimsiest of reasons, and offer no appeal" (p. 31), she argues. Antoinette Rouvroy and Thomas Berns (2013) speak of "algorithmic governmentality" (p. 10). They argue that the ubiquity and trust in algorithms and the logic of numbers on which they are centred mark a “transition from statistical governance to algorithmic governance” and that this algorithmic governmentally can be described as “a type of rationality founded on the automated collection, aggregation and analysis of big data so as to model, anticipate and pre-emptively affect possible behaviours” (Rouvroy & Berns, 2013, p. 10). Algorithmic governance is self-referential, they contend. “[A]lgorithmic governance ‘creates’ a reality at least as much as it records it” (Rouvroy & Berns, 2013, p. 25). Referring to Rouvroy and Berns in his book *We Are Data: Algorithms and the Making of our Digital Selves*, John Cheney-Lippold (2017) claims that "when our embodied individualities get ignored, we increasingly lose control not just over life but over how life itself is defined" (p. 5). Matteo Pasquinelli would likely agree. He makes a similar point when he contends that algorithms operate as an automated bureaucracy that silently reinforces dominant patterns of behaviour, where the norm of what counts as dominant behaviour is standardised by algorithms (Pasquinelli, 2016, p. 288). Tarleton Gillespie (2016) follows a similar line. He argues that algorithms are part of mechanisms that privilege quantification, proceduralisation and automation in human endeavours (2016, p. 27). I will discuss concerns about the algorithmic governance of socio-political life, specifically in relation to facial recognition algorithms in chapter 2, and also in chapter 3. Chapter 2 focuses on masks and camouflage wear as artistic responses to facial recognition algorithms, and chapter 3 explores the spectral imaginary of trading algorithms.

### Algorithmic Selves

As algorithms are deployed by the governments, institutions and corporations that impact on individual lives, there is concern amongst artists and critics about the social implications of these often invisible and secretive algorithmic practices, specifically in relation to the way individuals are perceived and treated. Cheney-Lippold (2017) argues, “who we are in the face of algorithmic interpretation is who we are computationally calculated to be” (p. 6). Who you are, he writes, is decided by advertisers, marketeers, and governments’ their secretive, proprietary algorithmic scripts, recasting identity “into the exclusive, private parlance of capital or state power” (2017, p. 6). Data analytics firms may mark an employee as “high cost” or as “unreliable worker” without their knowledge or participation (p. 4). Stefania Milan (2015) puts it thus: “creators, owners and exploiters of algorithms control much of our digital life” and “deeply influence our ways of making sense of interpersonal and spatial interactions… altering our perception of self and our relational being-in-the-world,” she observes (p. 22). “[I]ndividuals,” she fears, “become merely a pile of data” (Milan, 2015, p. 22). Adam Morris (2012) argues that people are treated "as a conduit of wealth" and "a mine of data" to the twin imperatives of marketing and surveillance (p. 107). He associates data mining and data profiling by companies and governments as a form of exposure. These practices “give transparency to the fundamental opacity of the population,” he argues (p. 107). Finally, Tarleton Gillespie (2014) is worried about the ways algorithms influence our notions of ourselves. He is specifically concerned about search engine algorithms. Search algorithms shape ways of relating to the self, Gillespie argues. He explains how search engine algorithms self-referentially present publics back to themselves and in doing so "shape a public's sense of itself" and generate a "calculated publics" (Gillespie, 2014).

Algorithms also shape our social life. Stephanie Hankey and Marek Tuszynski argue in *Nervous Systems* that every individual, locked inside algorithmic filter bubbles, "becomes a digit, a dot, a self-entered data point" (Franke et al., 2016, p. 14; 22). Our social life is "filtered into patterns," Hankey and Tuszynski claim, and in this process, subjectivity changes fundamentally while normative patterns are reinforced, "flattening and smoothing out our lifeworlds and singling out any form of dissent" (Franke et al., 2016, p 11; 13). In this context, Pasquinelli writes about an "epistemic revolution comparable to previous paradigm shifts, displacing the centrality of the human" (2016, p. 281). I will discuss algorithmic anxiety about rigid algorithmic regimes that conscript the self and its lifeworld further in chapter 2, as part of the artistic portrayals of facial recognition algorithms. I will also further analyse the self-referential filter bubbles that search algorithms produce in chapter 4, as part of the assessment of artistic representations of Google’s search engine algorithms.

### Algorithmic Opacity

The opacity of algorithms is another dominant concern among artists and critics. Again and again, in art and academia, algorithms are invoked as omnipresent yet invisible, powerful yet elusive, inscrutable yet invasive, and shaping social worlds and the people living in them. I address anxiety as a response to the opacity and unknowability of algorithms repeatedly in artistic portrayals of trading algorithms and search algorithms in, respectively, chapter 3 and 4. For context, we can identify several reasons for this response.

For one, algorithms' operational mechanisms cannot be observed at work. Algorithmic routines are mostly invisible, not in the least because of the secrecy surrounding algorithms used by tech giants, for-profit corporations and on financial markets. "Many of the algorithms we encounter daily are proprietarily owned—and thus opaque and inaccessible to outside critique," Michele Willson explains (2017, p. 140). Trade-secret protection governs many of the algorithms that are used daily, notably on the financial markets and in search engines. The opacity surrounding algorithms has led Frank Pasquale (2015) to contend that we live in a black box society, or a society in which "decisions that used to be made by humans are now made by algorithms of which we know little to nothing" (2015, p. 83). Pasquale calls for transparency and intelligibility of these systems and the possibility of auditing algorithms. As regards to search algorithms, he argues that ‘without knowing what Google actually does when it ranks sites, we cannot assess when it is acting in good faith to help users, and when it is biasing results to favour its own commercial interests’ (2015, p. 9). The encoded rules of algorithms, which he calls “enigmatic technologies” (p. 141) and their concomitant values, biases and prerogatives, are well-hidden and guarded secrets that must be opened to inspection, according to Pasquale, because they “undermine the openness of our society and the fairness of our markets” (p. 5).

Secondly, according to Jenna Burrell, the opaqueness of algorithmic systems is not limited to corporate secrecy and hence cannot be countered by inspection. Algorithmic opacity stems from the level of technical complexity and the expertise required to understand the entire structure of the software algorithms are embedded in (Burrell, 2016, p. 4). Algorithmic opacity also relates to the techniques used in algorithms and the complexity of and the scale distinctive to algorithmic systems (Burell, 2016, p. 5). Machine learning algorithms, for example, are deployed in areas where they augment or replace white-collar labour and in "consequential [classification] processes that were previously human-determined"— such as credit evaluation and insurance or loan qualification, but also in search engines, spam filters and for marketing purposes (p. 2). However, the high speed at which these algorithms calculate billions of data examples and tens of thousands of features of data in a matter of microseconds makes them opaque and illegible to humans. Their internal decision logic, Burrell points out, ‘is altered as it ‘learns’ on training data. […] While datasets may be extremely large but possible to comprehend, and code may be written with clarity, the interplay between the two in the mechanism of the algorithm is what yields the complexity (and thus opacity)’ (p. 5).[[1]](#footnote-1) The artistic responses to the different forms of opacity and incomprehensibility of algorithms will be discussed predominantly in chapter 3.

### Algorithmic Replacement

Future scenarios of human displacement or replacement by algorithms are a topic of concern amongst critics of algorithmic culture. Anxieties about the future self are widespread in the work of critics of algorithmic culture. They range from scenarios of automated societies in which fascism reigns with the helping hand of a small elite running algorithmic systems, or—and worse—scenarios in which humans live in the service of self-operating algorithms, that may, at some point in the future, turn against humans when their services are no longer needed. In his often-cited book *Automate This: How Algorithms Came to Rule Our World* (2012), Christopher Steiner concedes, “the bounds of algorithms get pushed further each day” (p.18). He argues that algorithms have augmented and displaced human labour in a growing number of industries: “[t]hey’re faster than us, they’re cheaper than us, and, when things work as they should, they make far fewer mistakes than we do” (p. 18). This gives reason to pause, according to Steiner. He claims that algorithms can evolve: “[t]hey observe, experiment, and learn—all independently of their human creators” (p. 19). Algorithms can create improved algorithms, Steiner cautions. Worrying about these developments and what it means for human agency, Steiner contends: ‘As our world shifts from one where humans have made all of the important decisions to one in which we share that role with algorithms, the value of superior intellect has increased at a compounding rate’ (p. 419).

On the dark side of replacement theories, being outsmarted by algorithms is taken as a warning sign for the future of human labour. In part, this is because intelligence has been used (and is still used) as a "fig-leaf to justify domination and destruction," Stephen Cave (2017) explains in his essay on the dark history of the concept of intelligence. Cave argues that intelligence is a political concept with a long history as the rationale for domination. He traces this political conception of intelligence to Plato's *The Republic*, early Greek experiments with democracy, and Aristotle’s *Politics*. Not inherited elites—neither those with the strongest army, nor those who were said to have received divine instruction—should rule, but the cleverest of men should rule over the rest. Lest one forgets, to be counted as a citizen of the Greek polis one had to be a European, educated, *male* citizen. Cave: ‘What marked the ruler was his command of reason and rationality which both justified and naturalised his rule over those deemed less intelligent, irrational, emotional and so forth’ (2017).

According to Cave, as Westerners have justified their positions of power and repression of others by virtue of their supposed superior intelligence, this makes algorithms that outsmart and outperform Westerners a possible deadly threat.[[2]](#footnote-2) Anxieties about human replacement or displacement have found its way into prominent artworks that engage with facial recognition algorithms, trading algorithms, and search algorithms, to which I return in chapter 2, 3, and 4.

## Kierkegaard’s Concept of Anxiety

In the following section, I provide an outline of the central concepts and dynamics that structure Kierkegaard’s conception of anxiety—the self as a synthesis and the self in despair, faith and the limits of knowledge, and the synthesis between possibility and necessity. But to start, a few words on Kierkegaard the author, philosopher, theologian, Socratic ironist, humorist, and novelist.

### A few words on Kierkegaard

Most of Kierkegaard’s philosophical writings do not bear his name; they were written pseudonymously, though some carry his name as the editor of the book. A pseudonym makes a point of separating the author from its written words, acting as a form of indirect communication. In the case of Kierkegaard, it was not a strategy to protect his anonymity. Multiple pseudonyms are used by him, creating novel-like characters; these pseudonyms say different things and reappear in other books, for example *Stages On Life’s Way* (1845) and *Either/Or*: *A Fragment of Life* (1843). These pseudonyms represent different personas. In *E/O,* there are multiple personas in the same book with different points of view, each representing different philosophic standpoints.[[3]](#footnote-3) Yet, they are all too often (self-)contradictory, too; they are divided by opposing thoughts or reflect on the contingency of their own deliberations. Obviously, then, one cannot understand Kierkegaard's philosophy by reading only one book. However, reading all of his work does not give its reader a clear and ordered idea of his thinking either. And this is the point.

Kierkegaard opposed the way philosophy was taught at his time—which was much dominated by Hegelians. While his contemporaries focused on over-arching systems of thought and theories of everything, Kierkegaard opposed this kind of philosophy by *performing* anti-systemic thinking in his writing, by contradicting himself, taking different positions in and within his different books, as well as by writing in different styles and adopting a range of genres. With these different pseudonyms, styles, genres and positions his oeuvre takes the form of one of his central concepts, movement at the spot – that I discuss in more detail below – as well as his conviction that one has to synthesise thinking and being. One’s thinking “should bear on a person’s existence, it should bear on how life is lived” (Evans, 2009, p. 30). With the constant play of positions and stances, he also disorients his readers in order to help them to remain open to other perspectives and different ways of understanding being and thinking.

Some of his books — *The Sickness Unto Death (1849), Repetition (1843)* and *E/O* among others— are set up as a dialectical movement between a philosophical and religious approach. But there is also a dialectic at work within his books. A reader may find shifts in position, from the particular to the transcendental, from unity to multiplicity, and from interiority and exteriority—and the reverse. Further, *SUD* and *CA,* the two works in which he writes about anxiety in relation to conceptions of self and knowledge, seem thematically related, yet differ in approach, whilst *Philosophical Fragments (1844)* and *SUD*, two works in which he writes much about the self and knowledge, seem to form each other’s counterparts.[[4]](#footnote-4)

Kierkegaard also has a knack for turning phrases and does so throughout many of his books. For example, subjective truth is described as an objective uncertainty. Anxiety is described as an antipathetic sympathy. And 'authenticity' [*autenticitet*], which is qualitatively different from the notion of being ‘genuine’ or a ‘true self,’ is described as stepping into character — “*traadt i Charakteer.*”[[5]](#footnote-5)The meaning of the major concepts in his work is never straight forward, and he refuses to provide a conclusive answer to what the major concepts in his work mean. Adding to this, Kierkegaard's oeuvre consists of journals, letters, sermons, poetry, literature, and philosophical tractates, and all written in diverse styles, tones, formats, and lengths. He mixes irony with devotional comments on Biblical history, polemics with dense philosophical writing, and epistolary writings, that at times approach kitsch, with lyrical tales.

The pseudonyms, the shifting positions, the self-contradiction, the rhetorical devices, the mockery, the puns, they are not made in jest, but stress his conviction that we lack a 'timeless,' 'impersonal,' or 'objective' view from which the world can be understood. His philosophy is not one of finding *the* truth, but one of questioning what you thought you knew to be the truth and then questioning *that* truth, too. Kierkegaard does not want to add to the pile of all-explaining theories, but rather to unscrew these theories and give them a good kick. Altogether, this makes his writings bristling with problems of interpretation and signification. It has resulted in a notoriously difficult body of work that is resistant to definitions and also to citation and paraphrase because of its density, complexity and idiosyncratic style and because of the endless winding on of conflicting views with no clear resolution. “What are we to make of his conception and your interpretation of anxiety, then?”, you may rightfully ask. “That it is embodied, embedded, partial, subject to interpretation, and time-bound”, is my answer. As Kierkegaard scholar C. Stephen Evans argues, many of Kierkegaard's ideas are inextricably intertwined, and the best remedy to this is to sketch key related ideas—which I will try to do in the following sections (Evans 2009, p. 29).

### The Self as a Relational Synthesis

Kierkegaard links anxiety to forms of being, presence and knowledge. Kierkegaard’s conception of the self differs from that which is dominant in western philosophy, which typically views the self as private conscience, a type of substance, an autonomous entity, or as a subject of knowledge. In contrast, Kierkegaard rethinks the self as a relational synthesis. In an often-cited paragraph from SUD, he explains in turgid prose his notion of the self as a synthesis:

But what is the self? The self is a relation that relates itself to itself or is the relation’s relating itself to itself in the relation… A human being is a synthesis of the infinite and the finite, of the temporal and the eternal, of freedom and necessity, in short, a synthesis. (SUD, p. 13)

The self is relational, a synthesis of contrasting elements and this synthesis must relate to itself (become self-aware), and it must relate to something outside of itself. To say that the self is merely a finite being is to emphasise one side of this synthesis. It is to emphasise gender, ethnicity, geographic location, abilities, and weaknesses and aspects of one's social, political, and cultural habitat, which are indeed finite. They matter to how one appears to the world, how one appears to oneself, and how the world appears to this self, even though it is not all that one is and no one can be reduced to these finite aspects. Many of these things are not up to us to begin with. We cannot freely choose our gender, ethnicity, the family we are born in, our place of birth, or numerous other things. We are inseparable from, but cannot be reduced to, our finitudes. We cannot be reduced to finitudes as the self is always grounded in something other and something larger than its finitudes. The self is both individual and social and also exceeds the individual and the social. Kierkegaard further explains this in SUD. He writes: “[f]or the self is the synthesis of which the finite is the limiting and the infinite the extending constituent” (p 29-30). One does not *have* a self; the self is not a substance, not a unit or a thing somewhere inside the self. Kierkegaard's point is, I would argue, that the self is not the sum of its finite parts but is open to the dimension of the infinite. Thus, a human being is a synthesis of (f)actual and concrete existence and abstract infinitude.

With his conception of the self as a relational synthesis, Kierkegaard rejects what he calls the "standard of his age" which holds the individual responsible for their own life, without further ado. The illusion that the individual is the creator of their own life "[leaves] the individual entirely to himself so that in a stricter sense he becomes his own creator" (E/O, p. 404). That is, within such an understanding, the individual likens with God. Kierkegaard: "It leads you to think this must be a kingdom of gods, this generation in which I too have the honour to live. However, that is by no means the case…" (E/O, p. 392). In *E/O,* he calls the notion of the autonomous self "ridiculous" (E/O, p. 393). It is ridiculous because any such attempt denies the existence of God (E/O, p. 392). This is not to say that the individual has no responsibility whatsoever, it is to say that "[e]very individual, however original, is still a child of God, of his age, of his nation, of his family, of his friends. Only thus does he have his truth" (E/O, p. 393). It is to say that a self is inevitably grounded, embedded and situated in sociality, but also composed of extending constituents that transcend other people and society. There is a constant tension between what *is* and what *ought* to be, between necessity and possibility. In *Concluding Unscientific Postscript* (CUP), Kierkegaard describes this dynamic as if “a Pegasus and an old nag were hitched to a carriage” (CUP, p. 680).[[6]](#footnote-6) The self is the dynamic relationship between what has shaped you, or your historicity of which you are intimately familiar, *and* infinitude and possibility.

There is the self that is self-aware (aware of its self as a self); there is the self that is constituted by an unchangeable past and limited by finitudes and necessities (the self embedded and situated in a social order with the ideals expressed by the state); and there is the self that is constituted by possibility and infinity of (the self before God, or the possible self (Evans, 2009, p. 48-50). As the human self exists in relation, we are not autonomous, and neither are we transparent to ourselves or others, nor are others transparent to us; there is always something that slips out of our grasp. One exists in relation, Kierkegaard explains, to our body, to our abilities and inabilities, to the cognitive skills we have and lack, to our surroundings, our family, our past and future, the nation we inhabit, its culture, *and* to the extending constituents of the infinite, the possible—to God. (CA, p. 68-69). Human existence is the never-ending attempt to synthesise these limiting and extending aspects, Kierkegaard explains in SUD. It is never-ending because this attempt to synthesis is never fully realized and, although some people are more successful than others, tension, contradiction, and mishap remain. “Through being a synthesis the human being can be made anxious…,” he writes (CA, p. 256). Which is to say, because the self is a relational synthesis of opposites – necessity and possibility, the temporary and the eternal and finitude and infinity – it experiences anxiety. Anxiety follows from this delicate and wobbly synthesis that is the self. He describes the never-ending attempt to synthesis as a process of becoming in *CUP*: "The process of becoming is the thinker's very existence…" (CUP, p. 182). This process of becoming has no endpoint or resolution; it is a constant striving. ‘How far the subjective thinker might be along that road, whether a long way or a short, makes no essential difference (it is, after all, just a finitely relative comparison); as long as he is existing, he is in the process of becoming’ (CUP, p. 182). Thus, although this continual striving directed toward the infinite, the infinite remains unreachable, which makes existence “as pathos-filled as it is comic” (CUP, p. 182). As well as filled with anxiety.

### Anxiety and Despair

Anxiety and despair, two connected concepts in the work of Kierkegaard, are not personal pathologies. Kierkegaard discusses these concepts primarily in *The Concept of Anxiety* and *The Sickness Unto Death*. Howard V. Hong argues that the two books ‘might be regarded as a two-stage explication. Both are based on the concept of man as a synthesis of the finite and infinite, the temporal and the eternal’ (Howard quoted in Beabout 1988). Gregory Beabout explains in *Kierkegaard on Anxiety and Despair* (1988) that “anxiety is the condition for despair” (Beabout, 1988). It is the radical openness of the possible which conditions anxiety. Kierkegaard understands anxiety as a form of *angst* related to the unknowability of future possibilities. Anxiety pertains to the possibility of the possible, to possible events that are unknown and unknowable and thus cannot be anticipated. He writes: “anyone formed by anxiety is shaped by possibility” (CA, p.257). Anxiety seizes when one is confronted with possibility, at a moment of possible change and the endless possibilities of that possible change. Anxiety is undetermined (time), vague and unstilted (ambiguous). Kierkegaard describes anxiety as an ambiguous power, which both attracts and frightens us and demands each one of us to relate to it (CA, p. 94-96). The question is how one relates to it, how one positions itself in relation to it.

His concept of despair is mapped onto the self as a relational synthesis. Despair, he explains in *SUD*, is a mis-relationship between the relations that constitute the self, between finitude and necessity *and* infinitude and possibility. Despair happens when the relational synthesis is skewed to one side. In such a mis-relationship, one side of the relation is emphasised over the other; one side is overdeveloped, the other underdeveloped. In *SUD,* Kierkegaard distinguishes different forms of despair by reflecting upon what each form of despair lacks. Thus, when an individual tends to infinitude, the despair they feel is caused by a lack of finitude. Similarly, the despair of finitude lacks infinitude; the despair of possibility lacks necessity, and the despair of necessity lacks possibility (SUD, p. 30-42). A person who grounds themselves merely in infinitude is a person who gets carried away by its daydreams and fantasies. What is missing in such a situation is “to submit to the necessity in one’s life, to what may be called one’s limitations” (SUD, p. 36). And the other way around: when focused merely on one’s limitation, one can get lost in determinism, fatalism, nihilism. What is missing then is a sense of possibility. Despair is conditioned by a lack of balance between the finite and infinite, necessity and possibility.

Most adults, Kierkegaard writes, are good at keeping themselves in the dark or prefer not to relate to their despair (SUD, p. 48). And there are many ways to do so, Kierkegaard explains. Through diversions, through work and busyness, by latching on to certainties, conventions, convictions, traditions. Or by living ordinary lives, and by externalising discomfort, rationalising feelings of unrest (SUD, p.48). In *PA*, he argues that his time is an age of anticipators and the risk-averse, everyone is given rules and calculators to aid one's thinking (PA, p. 33-35). In an attempt to escape their despair, many people try to find safety and security in living by the numbers. This is futile, Kierkegaard argues,

This philistine-bourgeois mentality thinks that it controls possibility, that it has tricked this prodigious elasticity into the trap or madhouse of probability, thinks that it holds its prisoner; it leads possibility around imprisoned in the cage of probability, exhibits it, imagines itself to be the master, does not perceive that precisely thereby it has imprisoned itself in the thralldom of spiritlessness and is the most wretched of all (SUD, p. 41-42).

Those who claim never to be anxious are earthbound. Despite necessity, despite finitude, despite the delimitations around living as gendered bodies, of a particular ethnic and religious descent, within certain social-economic groups, within a specific nation and at a certain time, and despite all the precautions taken for safety and security, there remains the possible. I will return to Kierkegaard’s understanding of the possible below.

In the next chapter, Chapter 2, I flesh out the concept of the relational self and how it manifests into artistic masks and camouflage wear. Algorithmic anxiety caused by facial recognition algorithms is about both the radical openness toward the unknown and about algorithmic regimes that attempt to ensnare this openness. The algorithmic capture of the face conditions despair in part because the desire for sovereignty, autonomy, and self-transparency is perceived as being tarnished and inhibited by the capacities with which facial recognition technology is associated. What is missing is a sense of possibility. However, a Kierkegaardian reframing of the meaning of the mask and camouflage might offer a response to what seems to be a lack of possibility.

### Faith as the Limit of Knowledge

Another central concept of anxiety has to do with Kierkegaard's distinct understanding of the synthesis between faith and knowledge. Kierkegaard critiques a kind of philosophy that extends its limits. For philosophy to be faithful to its aim requires it to be aware of its limits. In *CA,* Kierkegaard insists that a total system of knowledge is impossible; one has to live on the basis of faith (CA, p. 176). Philosophy can do no more than form conceptions of faith, but is not equipped to understand or explain it fully, Kierkegaard insists.

To start with Kierkegaard's take on knowledge: central to his argument is that we live our lives in relationship to things that we cannot ever be knowledgeable about. A prime villain in Kierkegaard's writings is all-embracing and all-explaining systems of thought and the arrogance of a way of thinking that presumes any topic can be "grasped" or "captured" or "covered" by knowledge. He rejects a kind of thinking that assumes knowledge is cumulative or universal or that one can throw a great book at any given problem or dilemma.[[7]](#footnote-7) It is not for him to reject notions of objective knowledge wholesale. It may exist, but it is not within reach of mortals. “There is a knowledge in the external world”, he writes in *Fear and Trembling* (FT), "that believes it is enough to know what is great—no other work is needed. But for this reason it does not get bread, it perishes while everything changes to gold" (FT, p. 27-28). According to Kierkegaard, knowledge is of limited use when it comes to existence. He insists that existence cannot be reduced to systematic explanations or rationalisations; it cannot be explained or explained away. He laments that people are enchanted by knowledge for the sake of knowledge. They are immersed by facts, engrossed in books, contemplating in abstraction, without relating this knowledge to themselves, to their relation to others, or to the spiritual world, the unknown.

One thing we cannot be knowledgeable about is God. As mentioned earlier, according to Kierkegaard we exist in relation to God. Kierkegaard’s God is Christian. However, it is not some entity or bearded man somewhere up on a cloud, nor is it an all-seeing judge. In his work, Kierkegaard uses different terms to write about God, including (but not limited to) “absolute freedom”, “possibility”, “spirit”, “the god”, “faith”, and “the unknown”. One of his more devout Christian pseudonymous personas might be Vigilius Haufniensis in *CA,* or Anti-Climacus in *SUD*. While one of his most semi-religious pseudonymous personas might be Johannes Climacus, the author of *Philosophical Fragments*. In discussing the unknown he writes, “the ultimate paradox of thought: to want to discover something that thought itself cannot think” (PF, p. 106). This is similar to his writings on faith and the possible, to which I will return below. Kierkegaard continues:

But what is this unknown against which the understanding in its paradoxical passion collides and which even disturbs man and his self-knowledge? It is the unknown. But it is not a human being, insofar as he knows man, or anything else that he knows. Therefore, let us call this unknown the god. It is only a name we give to it. (PF, p. 107, italics in original).

It is clear that Kierkegaard’s conception of the unknown, of the limits of knowledge, is different from a normative understanding of the unknown as that which is “not known”, a “known negative”, a “known unknown” or a case of “insufficient knowledge”. A.D.C. Cake explains that the unknown as Kierkegaard conceives it “cannot fall under the auspices of understanding” (Cake 2010). The unknown forms the incentive and torment of understanding as it forms the frontier, the boundary of human knowledge—of thought itself. The unknown, as Kierkegaard conceptualises it, cannot ever be known or grasped, as understanding cannot transcend itself. As Cake puts it:

[T]he understanding and the unknown are at odds in such a way that where the understanding advances, the unknown recedes; as the understanding seeks to subject the unknown to its established categories, the unknown remains indefinable. …The understanding’s paradoxical passion is thus the irresistible urge to subject the unknown to its own standard of truth, which is impossible. (Cake 2010, n.p.).

One cannot describe in human terms what transcends the earthly, Kierkegaard argues. Before continuing, I want to propose an agnostic reading of Kierkegaard's Christian god and interpret the unknown as unknowable abstractions to which we stand in relation but do not have access to or knowledge of. From an agnostic perspective, what we stand in relation to cannot fully be covered by knowledge. Sure, we are grounded in and limited by necessity, determined by all kinds of social forces, and yes there is causality, but there might be dimensions that defy determinism and causation and that nonetheless affect us, perhaps even fundamentally.

For Kierkegaard, the limits of knowledge are formed by what transcends the earthly, which is faith. To live with faith is to open up to the presence of things outside of the thinkable, a relating to what transcends the earthly and the self, but what is nonetheless fundamental to human existence (SUD, p. 38). To live with faith requires to give up on the pretence that science can explain everything (SUD, p. 38). Faith is not a theoretical construct. It is not something that can be understood by intellectual pursuit. Importantly, neither is it the result of carefully followed Biblical instructions or saying grace on Sunday visits to some church. In FT*,* Kierkegaard writes about the relation between faith and knowledge. Faith, he argues, flourishes in the impasse of not-knowing. To have faith requires the ability to relate to that which the eye cannot see and reason and logic cannot fathom. In CA, Kierkegaard describes faith as that “which no science has explained and which no science can explain” (CA, p. 116). When it comes to understanding existence, we depend on faith, Kierkegaard argues. Importantly, faith conditions the possible, without faith no possibility. I will return this in the next section.

"What does this synthesis of faith and knowledge mean for Truth?", you may ask. It would be hyperbolic to say this comes down to relativism or subjectivism or scepticism. The truth may not be attainable, but what Kierkegaard offers in return is subjective truth, a truth that is true for you, or what he describes as "the truth of appropriation" (CUP, p. 41). Subjective truth is an idea or value you should be willing to commit your life to. Thus, subjective truth does not preclude strong, passionate convictions. However, subjective truth is haunted by its own limits, by uncertainty and the unknown. Subjective truth will always remain an "objective uncertainty" as it is never granted that status of a fact or Truth. Therefore, to choose to commit to a subjective truth is a risky business, giving rise to anxiety, and takes courage, perseverance, and imagination. Kierkegaard:

Without risk, no faith… If I am able to apprehend God objectively, I do not have faith; but because I cannot do this, I must have faith. If I want to keep myself in faith, I must continually see to it that I hold fast the objective uncertainty, see to it that in the objective uncertainty I am “out on 70,000 fathoms of water” and still have faith (CUP, p. 435).

Chapter 3 zooms in on artistic representations of algorithmic trading on the financial markets. Engagements with trading algorithms, broadly speaking, fall into two categories. In the first, trading algorithms are imagined as ungraspable structures with divine-like foreknowledge and power, inaccessible to mortals and human understanding. Algorithmic anxiety in relation to such an understanding of trading algorithms is similar to fears of God's wrath. In the second, the emphasis is given to the limits of algorithmic knowledge production and focus shifts to that which cannot be calculated, predicted or anticipated. In chapter 3, I discuss different artworks that explore what may become possible when one lives in relationship to things that we cannot gain knowledge of.

Finally, Chapter 4 engages with algorithmic anxiety in relation to search engine algorithms. Anxieties of this kind are conditioned by an awareness of the limits of knowledge. The chapter primarily focuses on one artist whose work could be regarded as a contemporary response to living with faith, more generally; and to how the commitment to a subjective truth might take shape in relation to algorithmic knowledge production, more specifically.

### The Possible as Movement, as the Antidote to Anxiety and Stand-still

Perhaps the red thread in Kierkegaard's conception of anxiety and, by extension, in his conception of the self as a relational being and his conception of faith, is a profound reflection on the conditions—and importantly *not the causes*—under which change becomes possible. That is the conditions under which the possible becomes possible. The concept of the possible—and other terms with which Kierkegaard refers to it, “absolute freedom”, “God”, “infinitity”—is central to his conception of anxiety and is interlinked with his epistemology of the self and his ontology of knowledge. In *CA,* Kierkegaard describes the possible as an event, an unexpected moment, and he associates it in FT with the “absurd” (FT, p. 46) and in CA with “the suddenness of the enigmatic” (CA, p. 71).

However, although everything is possible in the possible, not everyone is aware of it. In *SUD,* Kierkegaard assumes that fatalists, determinists and those who he calls ‘philistine-bourgeois’ lack awareness of possibility. For these people everything has become necessary and trivial, which means they live in deeply sunk in finitude (SUD, p. 40). As mentioned earlier, the self, as a process of becoming, is a synthesis of possibility and necessity, the finite and the infinite (SUD p. 40). Kierkegaard likens this synthesis to breathing. You need to both inhale and exhale to stay alive. The fatalist, determinist, or the philistine, he argues, cannot breathe, ‘for it is impossible to breathe necessity exclusively, because that would utterly suffocate a person’s self. [P]ossibility is for the self what oxygen is for breathing’ (SUD p. 40). And just as inhaling alone or exhaling alone cannot be the condition for breathing, so too possibility alone or necessity alone can no more be the condition for existing. The possible needs to be grounded in necessity. The possible is about thinking possibility and necessity at the same time; it is about thinking and doing the actual and the virtual at once.

This is not an easy task. It is a process of “continual movement on the spot”, to use Kierkegaard’s phrase. The outcome of this process is uncertain, as the possible defies laws of calculation and causation. It is not something that can be produced, mobilised, or spoken into existence. In *FT* he writes:

From the external and visible work there comes as old adage: “Only one who works gets bread”. Oddly enough, the adage does not fit the world in which it is most at home, for imperfection is the fundamental law of the external world, and here it happens again and again that he who does not work does get bread, and he who sleeps gets even more abundantly than he who works (p. 27).

The idea that if you do good, the good of the possible will come to you is a falsity, according to Kierkegaard. Some people work their socks off, are exploited, and have no bread to eat. Others do not do a stroke of work and have their bellies full of bread. For the possible everything is equally possible, which is why the possible inspires anxiety. Anxiety concerns the possible of the possible.

To explain the possible, in *FT* Kierkegaard metaphorically stages a ballet dancer. He says:

‘[I]t is supposed to be the most difficult feat for a ballet dancer to leap into a specific posture in such a way that he never once strains for the posture but in the very leap assumes the posture’ (p. 41). By assuming the posture he never once strained for, the dancer makes “the movement of faith” (FT, p. 34). The idea is that one orients one’s thinking, being and acting to an ideal, even though this ideal may very well be unreachable. To relate to the possible is a recognition of how things are *and* a recognition that things could be and should be otherwise, even if they won't be otherwise. The ideal ought to be realisable, but may not be realisable; by assuming it, one resigns to its possibility. This happens “by virtue of the absurd, for human calculation is out of the question,” Kierkegaard insists (FT 46). By calling such an event absurd, he emphasises that it is qualitatively different from knowledge and that it is not identical with the improbable, the unexpected, or the unforeseen (FT, p. 47). It also stresses his point that there is *no causality* between really wanting something and working your fingers to your bones and achieving what you want. A similar logic of can be found in his writings about the exception. The exception, Kierkegaard writes in *Repetition* (1843), cannot bypass the universal but “battles through it” (p. 226). It is an absurd and paradoxical simultaneity of the universal and the particular, of the immanent in the transcendent—a movement of infinity in a finite world.

Movement is central to Kierkegaard's conception of the possible and to his thinking in general. In Kierkegaard's work, movement is often expressed with notions such as "the leap of faith", the "movement of infinity", "battling through" and the "step into". It is not a linear or progressive movement he has in mind. Movement, as he understands it, does not have an address or destination. Movement at the spot, Kierkegaard explains, "neither moves from the place where it is nor arrives anywhere" (SUD, p. 36).

In *CA,* Kierkegaard describes this synthesis as follows:

The eternal is […] the present. [The eternal] is a going on that never moves from the spot, since for our powers of representation, the eternal is the infinitely contentful present. In the eternal, there is again no division to be found into past and future, because the present is posited as the annulled succession (CA, p. 152, italics mine).

His idiosyncratic conception of movement at the spot is not, of course, merely a theoretical construct. Moving, or walking to be more precise, was essential to the way he *lived* his philosophy, too, both as a tribute to his great inspiration, Socrates, and crucially as a way to avoid stagnation or paralysis in his thinking-as-being. In a letter to his deeply depressed sister-in-law he writes: ‘Above all, do not lose your desire to walk […] Every day I walk myself into a state of well-being and walk away from every illness; I have walked myself into my best thoughts, and I know of no thought so burdensome that one cannot walk away from it’ (Kierkegaard quoted in Kirmmse 2018, p. xvii, xviii).

Kierkegaard associates movement with passion, with becoming inspired, or with being motivated. With passion, with inspiration and elation, an opening may occur, an opening to the possible. To an extent, movement at the spot is a principle against succumbing to necessity—and for living with possibility. It is what keeps the endless human endeavour going on. In the final chapter, chapter 5, movement at the spot will be reframed as a creative and productive form of living through algorithmic anxiety. In that chapter, the central motifs and concepts of the artistic representations discussed in the previous chapters—masks and camouflage (chapter 2); hybrids and spectres (chapter 3); collectors and collections (chapter 4)—will be interpreted as figures of movement at the spot that represent a synthesis between possibility and necessity and that each in their own way present different ways to relate to the possible in order to live through algorithmic anxiety.

## Towards a Conception of Algorithmic Anxiety as a Relation to the Possible

We might be entangled with, but we are not tied to algorithms. Artistic engagements with algorithms have often been interpreted as expressions of concerns about algorithmic governance, algorithmic opacity, and algorithmic selves. Algorithmic anxiety should be understood as a lack of movement, a dwelling in and an overemphasis of one side of the relation between the finite and the infinite and possibility and necessity. It is about the possible of algorithmic culture; what algorithms might do, what they might become, and the position the self occupies in relation. However, algorithmic anxiety is not a sentimental subjectivity, nor a personal pathology related to one’s feelings regarding algorithms. It concerns the possible of the entanglement between the social and algorithmic technologies. Despair about the future possibilities of algorithmic culture arises predominantly when the narrow and converging aspects of algorithmic culture are over-emphasised, and this happens when the possible self is perceived to be circumscribed, bounded, and governed by algorithmic regimes. The finite aspects of algorithmic culture are then over-coded and the relations around which the self, the structures of actuality, and the production of knowledge cohere and are then imagined to be predominantly produced and constrained by the algorithmic. Despair about the future of the self in algorithmic culture may also be conditioned by the over-emphasising and over-coding of the infinite and the possible, up to the point that is has lost its footing in necessity. This happens, for example, with a type of thinking in which the algorithmic technologies of advanced capitalism are mystified, depoliticised, and imagined as having infinite powers.

The starting point for the development of the concept of algorithmic anxiety is the suggestion that anxiety about algorithms lacks grounding in either possibility or necessity and requires imagination. Imagination is key here. Imagination does not preclude reason, logic, or the finite, but it may break open algorithmic determinism, fatalism, cynicism, and nihilism, opening up to possibility. Imagination, as Kierkegaard puts it, “is not a capacity, as are the others—if one wishes to speak in those terms, it is the capacity *instar omnium* [for all capacities]” (SUD, p. 30-31). As such, algorithmic anxiety also provides the opportunity to open up to alternative imaginations. And imagination can take many forms—such as faith, passion, and movement at the spot, which all condition the possible. It is not about *this* or *that* utopian vision of the future of algorithmic culture. Instead, it is about imagining the conditions for change, imagining movement in a situation of experienced stand-still and constriction. Imagination as the condition for movement at the spot is here understood as relying on a sense of possibility, beyond what is given in the algorithmic present. It is about extending the present.

Which is to say, the Achilles’ heel of algorithmic anxiety is not “the algorithm” per se, but the “finitising” of the infinite. Algorithmic anxiety requires a response and this response signals one’s relationship to the extending constituents of the self, actuality and knowledge—to the possible. This is the paradox of algorithmic anxiety: it is the *un*-algorithmic which conditions possibility within the algorithmic. The task is to engage with what conditions the possible, but in relation to and grounded in necessity. The possible is conditioned by imagining “movement in that place,” (SUD, p. 36) and “that place” is algorithmic culture.

A few intriguing contemporary artworks that underline the interrelation and overlap between the confining and extending aspects of the self, actuality and knowledge emblematise this kind of "movement" in algorithmic culture. In these artworks, an articulation of movement at the spot arises in the form of masks and camouflage (chapter 2), of spectres and deities (chapter 3), and collectors and collections (chapter 4). This articulation shows practices that are conducive to living with algorithmic anxiety. These works take different positions in relation, on the one hand, to the radical openness of the self, knowledge and actuality; *and,* on the other, tothe rigid algorithmic regimes that attempt to circumscribe this openness in the interest of profit and control. These different stances are not fixed nor given, but dynamic, relational, uneven, interdependent and context-dependent, pointing to the many contradictory relations within algorithmic culture and opening it up to alternative imaginations that move towards algorithmic possibility.

1. That is to say, models for machine learning are developed in line with how algorithms process data, without regard for human comprehension. They are not legible to humans as the scale required to apply them makes them illegible to humans. On June 15, 2017, *The Atlantic* published an article titled "An Artificial Intelligence Developed Its Own Non-Human Language." The piece reports about a paper, published by researchers at Facebook Artificial Intelligence Research Lab, on an experiment it ran to train chatbots to negotiate with one another. The researchers at Facebook used a large dataset of human-human negotiations that ran on machine learning algorithms used to train chat-bots with the communication and reasoning skills required to negotiate with other chat-bots. Over time, however, the bots started to negotiate with each other, but they did so in a language incomprehensible to the researchers involved. The article went viral. [↑](#footnote-ref-1)
2. Admittedly, not all scholars consider algorithmic culture to be a cause of concern. Some academics muse optimistically about the algorithmic replacement of human labour and envision scenarios of happy post-work co-existence. On this end of the spectrum, we find the work of, amongst others, Pedro Domingos. In his *The Master Algorithm: How the Quest for the Ultimate Learning Machine will Remake our World*,Domingos (2015) foreshadows that the line between "automatable and non-automatable jobs" will drastically change (p. 278). He assumes that soon there will be a robot in every household, running all quotidian chores, perhaps even looking after children and pets while you are seeking self-actualisation in a post-work world. How soon this will happen "depends on how hard finding the Master Algorithm turns out to be," he writes (p. 42). Domingos: "For those of us not working, life will not be meaningless… People will seek meaning in human relationships, self-actualization, and spirituality, much as they do now. The need to earn a living will be a distant memory, another piece of humanity's barbaric past that we rose above" (p. 279). [↑](#footnote-ref-2)
3. *Either/Or* will hereafter be referred to as “E/O” in-text. For a complete list of sigla, please see the note in the front of this book. [↑](#footnote-ref-3)
4. *The Sickness Unto Death* will hereafter be referred to as “SUD” in-text.

   *Philosophical Fragments* will hereafter be referred to as “PF” in-text.

   For a complete list of sigla, please see the note in the front of this book. [↑](#footnote-ref-4)
5. Translated by Kierkegaard scholar Bruce Kirmmse as "step into character." Kierkegaard's oeuvre could be considered a series of steps into different characters; each pseudonym takes on a different character that relates in its own way to the central concepts in his work. Thus, there is no conclusive answer to what these concepts mean because they are thought out and acted out in different and often contradictory ways and fail to provide closure. [↑](#footnote-ref-5)
6. *Concluding Unscientific Postscript* will hereafter be referred to as “CUP” in-text.

   For a complete list of sigla, please see the note in the front of this book.. [↑](#footnote-ref-6)
7. Kierkegaard argues in *CUP*: “Knowledge [of the historical] merely assists one into an illusion that is infatuated with the palpably material. What is that which I know historically? It is the palpably material. Ideality I know by myself, and if I do not know it by myself, then I do not know it at all, and all the historical knowledge does not help. Ideality is not a chattel that can be transferred from one person to another, or something thrown in to boot when the purchase is a large one. If I know that Caesar was great, then I know what the great is, and this is what I see—otherwise I do not know that Caesar was great. History’s account—that reliable men assure us of it, that there is no risk involved in accepting this opinion since it must be obvious that he was a great man, that the outcome demonstrates it—does not help at all. To believe the ideality on the word of another is like laughing at a joke not because one has understood it but because someone else said that it was funny” (CUP, p. 706-707). [↑](#footnote-ref-7)