
Original Article

Affect and automaticity: Towards an analytics of experimentation

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Abstract This article is a response to an increasing rapprochement taking place between the humanities and the sciences, and specifically between cultural theory and the cognitive sciences within the field of affect studies. The focus of the article will be on the area of automaticity research in both its past and present formations. This field of research has furnished cultural theorists with concepts and theories for animating affect and therefore provides a fruitful intersection for interdisciplinary enquiry. The article offers a strategy of incorporating cognitive science into affect theory that returns to a pre-positivist analytics of experimentation found within early psychology. When this analytics is brought into dialogue with science and technology studies and performative approaches to experimentation, the problematic of subjectivity is not displaced or elided but rather becomes a central recurring issue. It will explore what might be at stake in such strategies of appropriation and re-invention.

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Introduction: Affect as Critique and Counter-Critique

This article is a response to an increasing rapprochement taking place between the humanities and the sciences, and specifically between cultural theory and the psychological sciences. The focus of the article will be on the nature of some of the reparative readings (Sedgwick and Frank, 1995) that are being made within the field of affect studies. These have formed the basis of a range of critiques and counter-critiques (see Leys, 2011; Wetherell, 2012 for example). It is written from the perspective of somebody who has spent the last 20 years working within the field of media and cultural studies, but whose intellectual formation originated initially within psychology and

particularly its feminist, discursive and critical instantiations. The focus of the article will be on the area of automaticity research within cognitive science as it intersects with experimental social psychology discussing some of the field's past and present formations. This controversial tradition of research has also furnished cultural theorists with concepts and theories for animating affect and therefore provides a fruitful intersection for interdisciplinary enquiry. The article will identify some of the trends within affect studies and offers a strategy of incorporating psychology into debates on affect that returns to a pre-positivist analytics of experimentation found within early psychology. When this analytics is brought into dialogue with science and technology studies (STS) and performative approaches to experimentation (Barad, 2007), the problematic of subjectivity is not displaced or elided as is often claimed, but rather becomes a central recurring issue. The article will therefore bridge debates within cultural theory and long-standing debates on the problematic of subjectivity represented in the pages of this journal. It will explore what might be at stake in such strategies of appropriation and re-invention.

Affect studies is a contemporary field of debate that offers the potential for interdisciplinary dialogue and the invention of new methods, modes of experimentation and theorising across the arts, humanities and the sciences. It has in part been shaped by the voices of key interlocutors who have helped to establish particular orientations, concepts and ontological assumptions about what affect is or does and indeed could become. One key debate that has shaped a specific series of reflections has been initiated by the contributions and interventions of the historian of science, Leys (2011). As a historian Leys (*ibid.*) has critically reviewed some of the theories, concepts, debates and ontological assumptions that some humanities scholars have made about affect. Her focus is specifically the trend towards engaging the neuroscience of affect and emotion across the humanities, and specifically those concepts, theories and theorists which exemplify and to whom she suggests, 'go most directly to the heart of what is at stake in the general turn to affect' (p. 435). The question of 'what is at stake' in such rapprochement with science, by the humanities, is her key concern and one shared by others also more critically immersed within the neuroscience of affect and emotion (see Wetherell, 2012). What is missed, Leys, Wetherell and others such as Papoulias and Callard (2010) argue, are the complex circuits of contestation, argumentation, verification and authorisation, which surround the theories, explanatory concepts and forms of experimentation that have shaped and continue to shape this area.

Leys' main focus is on the status of non-intentionality or what is often described as the non-cognitive within some accounts of affect. As Leys suggests, the psychological sciences are one knowledge practice, which has provided humanities theorists with a variety of concepts and theories for ways of theorising affect as non-cognitive process. One figure who has formed a focus for debate and become central to many accounts of affectivity is the work and theories of the American psychologist Silvan Tomkins (see Frank and Wilson, 2012; Wetherell, 2012).

As readers who are familiar with these debates will know, Tomkins' theories and his re-articulation within the present, have opened up a series of contentions, controversies and conversations regarding the materiality and neo-materiality of those forces, motivations, desires, habits and instincts that might guide behaviour, thought and feeling. In part these debates offer an alternative to what is seen as an over-preoccupation with psychoanalysis within cultural theory as a way of theorising how power operates to produce and shape affects and desires (see Grusin, 2010).

What such dialogues disclose are the parameters of what currently circulates and is enacted via the affective turn and its distinctive markers and characteristics. These have been rehearsed by many, which include for the purposes of this article, a critical re-appraisal of the sciences (and particularly the psychological and neurosciences) by the humanities; a critical and creative re-engagement with ontological as opposed to epistemological concerns; a grounding of what might have passed as immaterial within a neo-materialist reading of what a body is capable of doing, and to that end a radical re-conceptualisation of embodiment, often beyond a distinctly singular, phenomenologically experiencing human subject. Of course these concerns have pre-histories that *affect* acts as an attractor for and pick up on more longstanding debates surrounding power, agency, subjectivity and biopolitics; and how to invent methodological and conceptual apparatuses that allow a purchase on the question of power, subjectification and the complex problematic of subjectivity (see Blackman *et al*, 2008). This is often but not always set within a de-stabilization of what it means to communicate beyond the context of (human) talk, discourse and conversation. This includes an exploration of theories that are sensitive to non-human agencies, entanglements and thresholds, which confound and unsettle humanist and sometimes post-humanist beliefs and sentiments (see Clough, 2008; Seigworth and Gregg, 2010).

Networked Virality and Reparative Reading

This article will be situated within the increasing attention given to concepts such as contagion, suggestion and automaticity for animating affective processes. Within the humanities contagion, suggestion and automaticity in different ways are considered useful and productive figures to account for non-linear, distributed processes of movement, change and transformation.¹ The paradoxes that govern discussions of network culture, for example, ask how and why do certain contagions spread and intensify across social and digital media. This problem is seen by some to be usefully addressed by turning to theories of suggestion, imitation and automaticity found within experimental social psychology, and the cognitive sciences. One recent book, which explicitly draws on such theories and concepts to explore the virality or viral logic of network culture is a book by the

cultural theorist, Sampson (2012), *Virality: Contagion Theory in the Age of Networks*. He argues that contagion and theories of imitation found within the past and present of experimental social psychology and the neurosciences might provide important heuristics for re-thinking communication processes beyond the human, singularly bounded, cognitive subject. This is an attempt to grasp what is termed a ‘contagious relationality’ (p. 3), which he relates specifically to biopolitical strategies in the present that are taken to work pre-emptively. Sampson suggests that pre-emption tendencies attempt to modulate and exploit emotion and affect, as well as to ‘affectively prime social atmospheres, creating the conditions for increasingly connected populations to pass on and imitate the suggestions of others’ (p. 5; also see Massumi, 2009). Sampson draws a lineage with the concerns of nineteenth and early twentieth psychologists and sociologists and specifically with the potentially unconscious, instinctual or even affective bases of contagion (also see Blackman and Walkerdine, 2001; Reicher, 2001; Blackman, 2012; Borch, 2012). These theories of the crowd, imitation and suggestion are brought into dialogue with explicitly contemporary concerns; with how communication is intensified and spreads within networked populations. The question for Sampson, as with many others, is exactly what does spread? Clearly not just information as understood within traditional media theory, or cybernetics, as what spreads includes political rumours, fads, fashions, trends, gossip, hype, emotions, feelings, affects, sensations and moods, for example; forms of contagious communication that as many people have argued, take us back to the nineteenth century concerns and potentially to those theorists, such as Gabriel Tarde and Gustave Le Bon, whose interests in contagion underpinned their own models of sociality (see Blackman, 2012).

Sampson announces the present as an ‘age of contagion’ (p. 1), and brings the past, primarily the French micro-sociologist and criminologist Gabriel Tarde’s work² – decribed as ‘Tarde’s imitation-suggestion thesis’ (p. 13) – into dialogue with contemporary neuromarketing and post-WWII experimental social psychology (specifically the work of Stanley Milgram and his famous obedience experiments). In different ways all these theories and experimental practices are seen to potentially explain, animate, articulate, dramatise, make visible and allow a purchase on the modulation of processes which exist, below, beyond and to the side of cognition (see Protevi, 2009). These processes are taken to reveal our fundamental relationality with others – human and non-human. On this basis, Sampson argues for a ‘revised notion of subjectivity’ based on a refiguring of Tarde’s ‘sonambulistic subjectivity’ embedded within ‘technological network relations’ (p. 13). Tarde’s sonambulism relates to his oft-quoted assumption that suggestion rather than rationality or reason are the basis of sociality, disclosing his interest in hypnotic suggestion and contagious forms of communication (see Blackman, 2007).

Sampson’s reading is a complex one that mines early and contemporary psychology, micro-sociology and the cognitive and affective neurosciences for

those theories, which are taken to articulate some of the complexity of contagious processes. He draws primarily on theories, experiments and theorists who are more known outside of psychology (Milgram, for example) and does not remain faithful or attentive to the nuance of critique, debate and argumentation which Milgram's tradition is part of. Sampson's approach has similarities with Massumi's (2002) strategy of 'creative contagion', where theories, concepts, ideas and experimental practices are taken out of one context and put into another. This method of refraction – reading psychology and the neurosciences through philosophy and cultural theory – for example, is designed to open up new thinking (refraction has some similarities to Donna Haraway's method of diffractive reading). The inventiveness of this strategy is not designed to operate according to a positivist ethics (the world is like this) but rather as a performative opening; '*What if* one conceived the world in this way?' (Gibbs, 2010, p. 189). Philosophers have long engaged this practice in order to create wonder, and to enable the present to be seen as a process of becoming rather than the natural and inevitable outcome of historical processes. Deleuze (1992) has re-staged Spinoza's philosophical writings on ethics in order to re-figure the body as a process, rather than a substance or essence. Latour (2002) has re-staged the work of Gabriel Tarde in order to inject psychic energy into social processes, and Massumi (2002) has re-staged the writings of William James, in order to make visible the limits of science's ability to theorise affect, passion and emotion. Similarly, Sampson refracts contagion theory through a Deleuzian 'topographical diagrammatics' (p. 3) in order to extend the relationality and intersubjectivity of contagion theory beyond the distinctly human.

Many inspired by affect and its twists and turns have foregrounded related concepts such as the subliminal, the contagious and automaticity to reframe power as working affectively, in ways which by-pass conscious, rational attention. These approaches are often described as vitalist and appear across many debates within cultural theory. This includes the re-invigoration of power within understandings of networked cultures, mediation, cognitive capitalisms and preemptive strategies of control where power is seen to 'get under the skin' in ways which exceed cognition and the self-regulating capacities of distinctly human subjects. The use of the term subliminal in much work on affect relates to a more hypnotic modality of power, often described as non-representational (see Thrift, 2007) – or in a related context as operating with a technological un- or non-conscious (see Grusin, 2010; Sampson, 2012). These terms relate to those processes which are seen to operate below the threshold of conscious attention and awareness and which become the target and object of strategies of power and regulation. A key question for many humanities scholars is what engaging with the sciences might furnish in terms of our understanding of such vitalist or affective processes.

The resulting strategies of poaching and piracy of the sciences by humanities scholars will likely not land well with those trained within the psychological

sciences, for example, who know that any theory or concept exists within complex circuits of contestation, contradictory experimental evidence, anomalies, puzzles and contrary interpretation, often shaped by specific allegiances and forms of training. Thus refraction or ‘creative contagion’ as a form of reparative reading might not open up the kind of interdisciplinarity or rapprochement perhaps needed by both the humanities and the sciences in affect theory. As Reicher (2001) has said in relation to contagion theory, or what is more commonly known within psychology as crowd psychology, it is largely a ‘theory without a referant’. What we find are a dispersion of theories and competing explanations within contemporary experimental social psychology built on specific ideological assumptions made about the working classes at the turn of the twentieth century (also see Blackman and Walkerdine, 2001). These assumptions were popularised by Gustave Le Bon’s (1922) treatise on the crowd, *The Crowd: A Study of the Popular Mind*, that influenced mass (fascist) politics, early media studies, and how contagion primarily became explained and understood within the psychological sciences (Blackman, 2012).

Reicher engages with contagion theory in the present as a social psychologist who trained with the social identity theorist Henri Tajfel. Social identity theory was an attempt to displace the individual–social dualism that for many critical psychologists has plagued psychology and prevented it from addressing the fundamental relationality of psychological processes. This work has a lineage to discursive and critical psychology, paving the way for explorations of how psychological processes are constituted through talk and discursive practices (see Potter and Wetherell, 1996). Although this work was considered by many to be overly cognitivist, the emphasis on social action and the accomplishment and emergence of subjectivities through practice has its place within contemporary affect theory (see Wetherell, 2012). Reicher (2001) importantly also recognises how scholars outside of psychology (particularly historians such as E.P. Thompson), have provided convincing theories of action, change and transformation, and links social identity theory to the importance of context, ideology and practice found in this writing. He argues that the legacy of Le Bon underpins the way in which contagion, refigured as ‘social influence’ is implicitly approached within contemporary experimental social psychology. This is despite the fact that Le Bon’s theories are and have been largely discredited. He reads and evaluates these traditions through his own commitments to social identity theory, investing the gaps, contradictions, conflicting evidence and experimental apparatuses with the possibilities and assumptions of his own theoretical investments; what we might recognise as an empirical approach to experimental evidence typical of the discipline. Reicher presents social identity theory as a theory of social action which can potentially resolve and convincingly explain contagious processes.³

Reicher’s strategy of reading psychology is to show Le Bon’s legacy in what took form within post-WWII experimental social psychology, particularly in the

traditions of work on conformity and obedience associated with Ash, Festinger, Milgram, Zimbardo and Sherif. At least some of these social psychologists will be familiar to non-psychologists as their theories and experimental practices have travelled across media and science, being both influenced by and influencing reality TV formats (see MaCarthy, 2009; Brown, 2012). To that extent histories of exchange and collaboration are integral to scientific forms of experimental culture and these movements and circulations always already exceed the assumption that rapprochement is necessarily about increasing intimacy, familiarity and knowledge of science by humanities scholars. This inevitably results in the kinds of cherry-picking of specific theories, concepts and experimental evidence by humanities scholars and underpins some of the critiques of affect theory that have been well-rehearsed by many (Papoulias and Callard, 2010; Leys, 2011; Wetherell, 2012).

In the remainder of this article I want to propose a different strategy of reparative reading/rapprochement that is influenced by an early minor archive of psychological experimentation in the area of automaticity that has largely been forgotten within psychology. My approach to reading and engaging this archive in the present is primarily genealogical inflected through hauntology (see Derrida, 2004; Barad, 2010). I explore the traces of what could have been if psychology had adopted an analytics of experimentation that was more attuned to the processual, indeterminate, entangled technical-material-affective agencies that cannot be reduced to psychological capacities relating to distinctly bounded human subjects. The approach to science and experimentation enacted within this archive is one that has been described as 'radical empiricist' rather than empirical (see Meyer, 2001). Radical empiricism associated primarily with William James refused the idea that knowledge was knowledge *about* fixed objects or entities. Rather experience was always experience of relations, where there was no 'inside' of psychological experience that pre-existed the experience of relations (which were indeterminate and contingent).⁴ This distinction and its importance in opening up what I am calling the lost-futures of psychology and is one that has much to offer both the humanities and sciences, and is more faithful to the commitment to process, vitalism, movement, becoming, relationality and indeterminacy found within the field of affect theory than might be found within the contemporary cognitive, neuro and psychological sciences. I argue that this minor archive acts as an interesting precursor to more performative approaches to experimentation found in STS and some queer and feminist approaches, including the seminal work of Barad (2007).⁵ This archive lingers at the margins of early psychological experimentation in the late nineteenth century and is marked by a close relationship between psychic and psychological research (see Valentine, 2012). This includes early psychological experiments on automaticities using the technique of automatic writing derived from experiments with psychic phenomena.

The experiments I am particularly interested in were carried out by Gertrude Stein and Leon Solomons, under the tutelage of Hugo Munsterberg at William James' Harvard Psychological Laboratory in the late nineteenth century. I argue that this psychological archive and the way in which it has taken form in the present is also instructive for thinking through the problematic of power, subjectivity and affectivity. I will argue it offers up some radical ways of theorising affectivity as a historical counterpoint to those which have become part of mainstream psychological theorising in the present. The disjuncture between this archive and what took form as psychology engaged in processes of professionalisation throughout the early twentieth century, offer an interesting challenge to some of the ways psychological concepts, theories and figures have been adopted and taken up within contemporary cultural theory. The legacy of this archive in a modified form has found its way into contemporary cognitive science and studies of priming and automaticity, but operates according to a rather different 'social technology' (Brown, 2012). The best way to illustrate my argument is to take the reader back to early psychology, where the traces of what could have been and might become can be found.

Queer Science – Gertrude Stein and Automatic Writing

Before becoming a significant and celebrated modernist experimental writer, Gertrude Stein studied a degree in psychology at Harvard with William James. Stein became interested in the question of what it means to designate a process automatic, such as writing, for example, and was in conversation with William James' reflections on the undivided nature of experience in his lectures that took place while she studied between 1895 and 1897. She disagreed with William James and with her co-experimenter Leon Solomons who equated automaticity to distraction; a (writing) process seen to occur without conscious thought or attention (see Meyer, 2001). Perhaps Stein's disagreement might be considered distinctly feminist as the attribution of automaticity to certain experiences, such as hysteria, contributed to the assumption that women were less capable of engaging will and therefore more suggestible and susceptible to others. This was an assumption embedded within biological psychiatry of the time, which equated mental ill-health to degeneracy of the will (Blackman, 2001). As Stein argued in relation to her subsequent modernist writing practice, she objected to the characterisation of any of her writing as automatic because of the close links made between female hysteria, automaticity and loss of control to an abnormal secondary personality (Meyer, 2001). Stein was right to be sceptical because as the reader will be aware already, the politics of will and automaticity were not simply psychological categories of mind, but adjudications of worth, value and status (also see Ahmed, 2014). Despite her own scepticism about the nature of

automatic writing and the distinction between consciousness and non or secondary consciousness that were part of the experimental *a priori*, Stein's theoretical resistances reveal something much more interesting about the recruitment and enrolment of subjectivity within the experimental apparatus.

Stein took up the position of a knowing, interested experimental subject, who through training, discipline and choreography was able at times to feel as if she was being directed or governed by an imperceptible force or agency, or even by a secondary personality (see Solomons and Stein, 1896). This did not take place through deception by the experimenter (a feature of contemporary forms of experimentation within social psychology and cognitive science), or not knowing the parameters of the experiment. Rather it required her to engage in certain processes of transformation by attuning to what it might be possible to achieve through actively engaging with the affordances of the experimental apparatus. The clues to the efficacy of the experiment come when we consider the labour, effort, concentration and practice that enabled Stein to experience her own arm moving and writing as if it was a so-called foreign will. Meyer (2001) emphasises the paradoxes of automaticity in this context by referring to Stein's achievements as examples of *non*-automatic writing; a reflection she also later made. The description of the practice as non-automatic confounded any easy distinction between consciousness and unconsciousness, will or automaticity and I think point to something very important in the analytics of experimentation that Stein was helping to shape (and arguably went on to develop within writing and literature rather than psychology).

Solomons and Stein adapted a device known as a planchette from psychic research used by psychic researchers to investigate what were considered supra-normal experiences, such as spirit communications. A planchette was a metal ball supporting a round glass disk with a rod on which a pen or pencil could be attached. If a person held the pen or pencil the planchette would move around, creating particular motor rhythms or automatisms because of its rolling movements. The device required the participation of a human subject (usually Stein herself) who would engage in certain practices, such as reading a novel, while at the same time attach her other hand to the pencil/pen. This novel practice of divided attention (reading while conjoining the hand with a device that would produce rolling movements) allowed for an experience of doubleness that could be attuned to, extended, modulated and explored within different experimental parameters. There are many permutations of these experiments where they were populated by different actors and agencies, which included a dictator (playing with different frequencies of sound and speed), novels (of different emotional intensities), fragments of remembered poetry, as well as different embodied experiences (of fatigue, restlessness, absorption, distraction and so forth).

Perhaps Stein's interest in this apparatus was carried by her developing interest in writing and the experience of absorption that often accompanies reading and writing, but whatever the motivation Stein decided she would be the ideal

experimental subject to undertake the series of experiments. Her capacity to offer herself as an ‘embodied instrument’ (Martin, 2013) would involve periods of training, discipline and choreography (a training that was formulated as overcoming the actions of will and certain habits of attention or what she also termed the limits of the willing subject). Through attending to and transforming specific thresholds of sound, labour and attention, Stein was able to experience her arm moving and writing as an extra-personal entity – as not-me; what she equated to a ‘feeling of extra-personality’ (p. 495). These forms of motor automatisms were equated by Stein to a process of becoming unconscious and reveals the more transitive and processual approach to what was designated psychological at the time. Importantly, Stein’s subjectivity was central to the experimental apparatus and her capacity to affect and be affected by the apparatus was crucial to its efficacy and the effects that were produced. It is interesting that this experience was difficult for other experimental subjects to replicate, perhaps one reason why it has not become a classic psychology experiment!

Why might these experiments be of interest to contemporary affect theorists engaging with psychology and specifically the area of automaticity research? First I argue that they operate according to an analytics of experimentation that is neither positivist or empirical. They were not trying to prove the nature of automaticity but rather explore the efficacy of the apparatus itself (which includes the experimental subject) to enact certain phenomenological, epistemic and aesthetic effects. The reflections on the efficacy of the apparatus include reflections on what it was possible to actualise under specific conditions. The effects are not decipherable or measurable by psychometric tests or the visual gaze of a detached experimenter, as they rely on the experimental subject coming out of the process changed (and experiencing that process of transformation as other-directed). This experience is not equated (at least by Stein) to the triggering of a process separate from consciousness or will, but rather to the experience of an entanglement of processes – material, technical, semiotic, immaterial – which are related to a process of becoming unconscious. This process is marked by the focused exploration of specific thresholds of experience that are distributed across human and non-human actors, rather than reflections on inner psychological processes. These entangled processes are considered dynamic, indeterminate, fleeting and related to distributive forms of agency and capacity. This distributive agency requires a lot of work; as Stein herself said it ‘required a great deal of concentrated attention’ (Meyer, 2001, p. 231), as well as ingenuity, effort, commitment and sensitivities to what might be possible.

Towards an Analytics of Experimentation

What is striking about these early psychological experiments, when compared with the positivist empiricism of contemporary psychology, is that they did not

operate according to an analytics of experimentation concerned with verifying particular theories or concepts. They were not so much concerned with proving or disproving hypotheses concerning the nature of hysteria, for example, but rather with how particular phenomenological experiences or epistemic or aesthetic events could be produced and enacted within the laboratory. They were akin to material-semiotic events, and became open to a range of competing concepts used to decipher and interpret the significance of the experiments. This of course includes my own subsequent interpretation of the experiments. In that sense, they exist as an interesting forerunner to contemporary debates on the performativity of experimentation, which we find in the work of Barad (2007) and others (see Despret, 2008) who have explored meaningful and even creative experimentation as a set of obligations, affordances and sensitivities to the experimental subject or object under investigation; human and non-human. This more performative logic, what I am going to call following Schmidgen (2005) – an epistemology of analytic experimentation – is one that affect theorists have not adequately explored, either within the humanities or the sciences. This is perhaps an area of interdisciplinary enquiry that offers the possibility of invention and creativity, holding up the potential for the development of new methods, forms of practice and strategies of reading and engaging with scientific and non-scientific theories. Although these comments are speculative they extend arguments that have already been made by critical psychologists, such as Brown (2012), who have been influenced by STS, process and vitalist philosophies and affect theory.

Brown (ibid.) argues that rather than see psychological forms of experimentation as reductive, we might instead explore the layered and contingent histories which organise different experimental traditions. His focus is on post-WWII social psychology and particularly the traditions associated with Milgram and Zimbardo, who were both influenced by reality TV (specifically the creator of *Candid Camera* – Allan Funt), and went on to influence contemporary reality TV formats such as *Big Brother*, for example. He argues that these forms of experimentation are related to specific *dispositifs* or ensembles and arrangements of forces or relations, that draw an equivalence with the dramatic theatre of Bertold Brecht, as well as abstract expressionist art. These are consolidated for Brown in terms of the shared experimental cultures and practices (or *devices*), which he terms ‘abstract experimentalism’. Brown is influenced by Stengers (1997) and Despret (2004) who have taken psychological forms of experimentation as objects of investigation (specifically Milgram and the case of Clever Hans, for example), but departs from their evaluation of these forms as primarily impoverished; as not bringing about anything new and therefore inventive. As Despret (2004) has argued in relation to the psychological interpretation of Clever Hans the horse at the turn of the twentieth century, for example, the potential of this controversy is reduced to and replaced by ‘the most impoverished version of Hans’ marvellous story’ (p. 121).

In relation to these arguments and their obvious tensions, I want to return to the problematic of subjectivity and reflect on the place of subjectivity within different forms of psychological experimentation. This will allow me to speak to some assumptions that are being made within cultural theory and philosophy concerning subjectivity and its eradication from theorising as a redundant and even obsolete concept. For example, there is a trend among some contemporary researchers interested in non-human agencies to increasingly draw an equivalence between the human and non-human. This includes speculative realism and object-oriented ontologies, where a focus on non-human agencies often displaces the centrality of the human altogether. For example, speculative realism or philosophy is framed as allowing objects to exist aside from the interpretative frameworks that might be brought to bear on them. This flat ontology, where distinctions between subject and object are not only displaced, but the potential anthropocentrism of the human subject is eradicated is one that is gaining popularity across the arts and humanities. Although these arguments are important for re-qualifying the status of the human, and for distributing agency among human and non-human actors, the rush to dismiss subjectivity seems premature. When subjectivity is still retained as important for analyses, as with Sampson's (2012) work, for example, the more transitive approaches to subjectivity are often 'fleshed out' by some recourse to the neurosciences or a neuro-physiological body (brain). This is a growing trend within an area known as 'new materialist' philosophy, for example, which is gaining ground within media and cultural theory for analysing the place of the subject within biopolitical analyses of mediation (see Parikka, 2012; Valiho, 2014). Within the context of affect theory, for example, many argue that this presents a 'crisis of the phenomenological, experiencing human subject' (Parikka, *ibid*, p. 84). On the basis of this assumption the phenomenologically experiencing subject is replaced by brain or body, underpinned by a variety of neurophysiological concepts (including distinctions made between will and automaticity). Subjectivity is replaced with the somatic, which easily reduces to the neuro-physiological aligned to concepts such as the automatic, the subpersonal, the pre-programmed, the non-conscious and non-cognitive.

In order to explore the tensions in these trends I will turn now to an area of cognitive science, which is often used to authenticate these claims – studies of reaction time. We will see that the problematic of subjectivity becomes much more vexed and complicated when we consider some of the different experimental traditions which converge in relation to this problem. What we will see are some of the displaced histories and submerged potentialities which are carried by different experimental cultures and practices. The tensions and anomalies do not displace subjectivity, but rather bring the problematic to the foreground. I will then draw a link back to the Stein experiments and draw a provisional conclusion.

Libet's Reaction Time Experiments Revisited

One account of automaticity that has been brought into cultural theory and become invoked as an account of affective processes draws from cognitive science and specifically the reaction-time experiments carried out by Libet *et al* (1983). These experiments have been used to authenticate what has come to be known within affect theory as the 'half-second delay' between thinking and action (see Thrift, 2007). As Leys (2011, p. 454) argues, these experiments have been taken up across the humanities 'to prove' that 'material processes of the body-brain generate our thoughts and that conscious thought, or intention', arrives after a 'half-second delay'. Libet and his associates published the article based on their studies in the journal, *Brain*. They assumed that they were exploring 'free will' or intentionality and that this had been done by measuring what is known as 'readiness potential' (RP). They used electrodes that were placed on six college students scalps and asked the students to engage in certain tasks and activities, or to elicit voluntary actions in a spontaneous manner; spontaneity was of course circumscribed by the parameters of the experiment.⁶ They were able to measure the activation of brain processes several 100 milliseconds before the experimental subjects performed particular acts, and on this basis they concluded that 'the brain decides to act before awareness of, or conscious initiation of that act' (Rose and Abi-Rached, 2013). This has become known as the half-second delay between thought and action, or even cognition and affect. This *a priori*, which as Rose and Abi-Rached (*ibid.*) argue is 'alive and well' (p. 211) in the neurosciences, has also taken on an after-life within affect theory. On this basis it has almost become a truism that if you want to analyse subjectivity in the context of affect the neurosciences hold the answers.

I want to turn now to an area of automaticity research which has a lineage with the Stein experiments and which has retained her interest in how subjectivity enters into or might enter into the experimental apparatus. This work does not reduce subjectivity to the singularly bound experiencing phenomenological subject but rather works with a more relational account of subjectivity. This tradition of work is known as the phenomenology of authorship; that is, how, when and why subjects feel a sense of authorship within processes of co-enaction and co-constitution. That is, rather than adjudicate between intentionality and non-intentionality as discrete psychological processes, the question is directed to why and how subject's determine authorship and what this *feels* like when the subject is not considered rational and autonomous, but rather understood to be part of a distributed system of co-enaction, which includes human and non-human actors and agencies.

This philosophy of mind, or philosophy of extended mind (Clark, 2008) considers cognition as embedded, extended, enacted and embodied, (what is often referred to as the 4E's), and is central to the approach of the late cognitive scientist Daniel Wegner and his colleagues. It has also been a source of inspiration

for some cultural theorists and philosophers, such as Protevi (2009), who recognise that going beneath, below or bypassing the subject when analysing affectivity is ultimately reductionist, unless you also consider the relations between power, subjectification and subjectivity – what he terms the alongside and above of political affect. Libet's reaction-time experiments, and how we might decipher the effects produced, are central to debates surrounding the phenomenology of authorship, and show that the assumption that affect precedes cognition (the so-called half-second delay), and how we might interpret this is still very much an open controversy. I very partially review some of these debates below, not because I think they have the 'correct' theory of automaticity, but I am more interested in how the vestiges of the Stein experiments are carried through within these experimental practices or devices (Brown, 2012). There are of course distinct differences and these will also be discussed and conclusions will be drawn.

Ebert and Wegner (2011) argue that Libet's reaction-time experiments were not simply measures of reaction time or RP as they have been interpreted and understood by many, including many affect theorists. Ebert and Wegner (*ibid.*) argue that the experimental subject was not enrolled into the experiment solely as a neuro-physiological subject (despite Libet *et al's* assumptions). Rather the subject was also recruited into the experiment as a phenomenologically experiencing subject; one required within the parameters of the experiment to engage in practices of reflexive attention and specifically asked to judge and provide a coherent account of their own experience of agency or conscious will. In short, Ebert and Wegner (*ibid.*) argue that Libet's participants had an experience of 'conscious will' that was produced by the experimental apparatus and has not been adequately taken into account in subsequent interpretations of the significance and implications of the studies. To that extent, they argue that the experiments *primed* the subjects where the instruction to judge reaction time worked to produce a delay between stimulus and perceived response, which itself was an artifact of the instruction. They argue, rather controversially, that the experiments do not tell us about reaction time *per se*, but about the vagaries of 'self-reported authorship'. To that extent these experiments are argued to be part of a 'time-judgement paradigm' (p. 138) rather than measures of reaction time. In other words, that 'conscious will can be experienced that does not correspond to causation' (Wegner, 2003, p. 65). And of course, this is a common and normative response to subjectification in (neo-liberal) subjects, who have primarily been produced to believe that they are predominantly autonomous, rational, conscious agents; what Bargh and Morsella (2008) in a related context terms a 'conscious-centric bias' (p. 73). This contestation of the original experiments and their significance relates the delay between action and thought to an inference that subjects would have held that thought causes action. It is suggested that what they were actually reporting on was how this inference can be confounded and modulated within particular experimental practices. As Bargh (*ibid.*) suggests, people are *not* very good at reporting on the ways in which their thought, action,

feeling and beliefs are modulated and this is primarily what these experiments demonstrate. Importantly he suggests that we need to go outside of psychology to understand this. This is perhaps an opening and invitation that cultural theorists and affect scholars ought to heed.

Leys (*ibid.*) also suggests that the interpretation of the experiments by some affect theorists sets up a ‘false dichotomy between mind and matter’ (p. 457). I want to extend these critiques by situating Libet’s reaction-time experiments within a longer history. This history, following Schmidgen (2005), might also be considered a history of ‘machines’; of what he calls ‘those spatially circumscribed and temporarily limited installations that connect a vast number of heterogeneous components: partial objects derived from the experimenter and the experimental subject (eyes, hands, voices, etc), more or less isolated organs (hearts, lungs, muscles, nerves, etc), energy sources, styli, sooted paper, tables, notes and publications’ (p. 211). In this context Schmidgen analyses the Donders Machine, a specific material-semiotic apparatus which physiologists used in the nineteenth century to measure the speed of excitation within nerves, producing all kinds of ‘epistemic’ and even aesthetic effects. Schmidgen develops the concept of the experiment as a machinic apparatus via the work of Deleuze and Guattari and particularly the assumption that subjectivity is transversal; that is that technologies and bodies are ‘always component parts of each other’ (p. 216 – a view that he also credits to the work of Donna Haraway). Schmidgen’s analysis of experiments as histories of machines is an attempt to bring the body back into discussions of experiments as particular cultures and forms of practices.

Reaction-Time Experiments and the Machinic-Body

What is striking about these early forms of psychological experimentation on reaction time is the rather materialist body that is recruited and articulated by the experimental apparatus. Schmidgen recognises that the human body, as it was articulated by the apparatus, offered ‘itself for an almost infinite number of experimental variations’ (p. 221), but that the body was very much conceived as a rather flat organic body, connected and restricted by neurophysiological measures (galvanic skin response, heart-rate, temperature and so forth). This created a separation and distinction between the physiological and the psychological (viewed as an autonomous realm), engendered he suggests by the machinic practices of the experimental apparatus ‘based on its own practice of intensities’ (p. 231). Thus the body was produced and enacted as an anatomical and physiological entity, helping to engender a split between the physiological and psychological, which as we have seen endures to this day. One of the implications of this approach to machinic apparatuses, which as Schmidgen also argues, is common to other machines, such as cinema and other media, is that bodies do not

pre-exist the experimental apparatus, but are recruited and enacted in particular ways – what he terms, following Deleuze and Guattari, the ‘becoming of a body’ (p. 231). Although this assumption is central to a long tradition of feminist work and work within STS and related perspectives, it has not been followed through sufficiently within work on affect, which often relies on an under-recognised logic of positivist experimentation, despite its commitments to process and movement.

The contemporary area of automaticity research, with all its anomalies, controversies, contestations and puzzles, retains an interest in how we can be moved and made to move by our conjoining with human and non-human others. This *a priori* has a long history, which takes psychology back to its close links to psychic research (also see Andriopoulos, 2008). This is perhaps disclosed by the range and diversity of phenomena that are brought together and specified as part of automaticities reach. These include phenomena such as table-turning, tapping and tilting (associated with the nineteenth century medium), ouija board spelling, dowsing or divining, facilitated communication, hypnotic suggestion, trance states, voice hearing, motor automatism (this includes involuntary muscular movements), through to actions, thoughts and feelings seen to be produced as a result of priming. This might include so-called yielding to media forms and practices. The concept of priming relates to a variety of techniques used to modulate thought, action, belief and feeling, such that people arguably can be made to do things that they experience as being consciously willed, or conversely to experience a sense of un-willed action, which confounds their own sense of agency and control (Moore *et al*, 2009). So-called unwilled action relate to what Ansfield and Wegner (1996) term ‘actions that are so remarkably divorced from a feeling of doing’ (p. 483) that they are often attributed to supernatural forces. People often feel as if they are directed by someone or something else; actions or feelings are not experienced as phenomenologically willed. They do not have a conscious sense of acting or what is often termed phenomenal will.

However, one distinct difference between contemporary automaticity research and Stein’s automatic writing experiments concerns the place of the subject or subjectivity within the experimental apparatus. In contemporary automaticity research, subjects are primarily deceived as to the real aims of the experiment, and de-briefing after the experiments often involves determining whether subjects were actually aware and therefore influenced by what are termed ‘experimenter expectations’ (see Shanks *et al*, 2013). The potential to be actively involved in the processes of modulation that are afforded by different experimental apparatuses is foreclosed from the outset. As with post-world war II social psychology, the experimental culture is one where the ideal experimental subject is largely unaware of the unfolding drama, where the experimenter plays an executive role, and where there are various cover stories, confederates, props and pranks to ensure that this is accomplished (see Brown, 2012). The prehistory of these experiments and the very different social technology from those which organised the Stein experiments is notable in this respect. Stein was perhaps a very wilful

subject (Ahmed, 2014). She refused the attribution of automaticity to the automatic and saw herself as an active participant in processes of modulation. Her own reflections on the difficulties, challenges and experiences of these processes were not internalised within her own psychological processes. She rather reflected on the different intensities afforded by the capacity of the apparatus to hold together and allow herself to articulate and be articulated by different component or *machinic* relations. In that sense I argue that her approach was more ‘radical empiricist’ than empirical, reflecting an assumption of transversal subjectivity more attuned to the process philosophies and vitalism that she was steeped in (see Meyer, 2001). This is perhaps something that we might recognise now in modernist traditions of writing, which pay attention and attune to the potentialities and possibilities of the materiality of language in all its combinatory forms. Stein was perhaps the ideal post-human or ‘post-human phenomenological subject’, in that her approach to experience was not bound by a discrete psychological subject. As we have seen this assumption is retained in some areas of automaticity research and could usefully be extended.

As Rose and Abi-Rached (2013) have argued in their recent book, *Neuro: The New Brain Sciences and the Management of Mind*, there are certain debates, problematics and modalities of experimental practice within the neurosciences, which create opportunities for collaboration across the humanities and neurosciences. In the context of cognitive neuroscience, research on automaticity seems to me to proffer such an opportunity for a shared venture. Prominent humanities scholars interested in diverse practices, including social media, contagious forms of communication, image-making, ‘viral’ forms of advertising and marketing, and what has generally been subsumed within the ‘turn to affect’ across the humanities have drawn on the concept of automaticity, often with little awareness of its specific histories of contestation, debate and legitimation within the sciences. This leads to the rich and complex histories of automaticity and experimental practices within the sciences being ignored. When science is engaged, it is generally a very narrow, reductionist and problematic engagement with the neurosciences.

As Rose (2013) suggests in a recent article in *Theory, Culture & Society*, there is a new openness of the sciences to the humanities, made possible by the neuromolecular gaze, epi-genetics and the plastic and social brain, and there is the opportunity for some kind of rapprochement. There are, however, other areas of cognitive science and experimental social psychology that exceed the neuromolecular gaze, and these areas also offer the potential for interdisciplinary engagement. As I hope I have convinced any rapprochement or reparative reading must also include more critical reflection and attention to the ontologies of subjectivity that are produced, recruited and enacted via different forms of experimentation. To that extent, the turn to affect is not a turn away from the subject and makes the problematic of subjectivity more urgent and not less important. As I have argued in my recent book, *Immaterial Bodies: Affect*,

Embodiment, Mediation (Blackman, 2012) neuroscientists such as Damasio who have provided many affect theorists with neuro-physiological concepts for exploring non-conscious processes, also rely on minimal, often under-explored theories of subjectivity to make their claims. These proto-theories of the self are rarely examined and the problematic of subjectivity haunts such claims.

Automaticity is a concept then, which links the arts, humanities and sciences, has an important historical past, and is one that I am calling, following the important work of the biologist and science studies scholar Rheinberger (1994), an 'epistemic thing'. He uses this term to refer to entities that escape fixation, and where there is always more to be said than any experimenter at any given moment is trying to tell. There are what Rheinberger terms submerged narratives, repressions, displacements and excesses, which create alternative directions, contributing to the potential dynamism of science. As he argues, 'experimental systems contain remnants of older narratives as well as fragments of narratives that have not yet been told' (p. 77). This potentially opens up the possibility of the experimental system 'becoming different', that is attending to and reflecting on its histories and conditions of emergence, and remaining young; this is a term that Rheinberger uses to refer to the capacity of experimental systems to produce differences. I am interested in those differences which continually defy the language of neurophysiological reductionism and which open experimental systems up to traces of the past. Automaticity takes us back to a time when transdisciplinary enquiry and experimentation was commonplace, indeed institutionalized, and where concepts travelled across borders and boundaries blurring the lines between art, science and culture. This archive of 'queer science', characteristic of science, arts and humanities research and theorising in the late nineteenth and early twentieth centuries, brought together philosophers, artists, scientists, literary theorists, economists and physicists, for example, who were united in their focus on and fascination with hypnotic suggestion, mediumship, telepathy, voice hearing, automatic writing and so forth, all considered signs of automaticity – that is, signs that a person could be directed by someone or *something* else.

Automaticity has travelled as a concept from this early archive and become dispersed across the arts, humanities and sciences, taking on an increasing visibility within the contemporary 'turn to affect', directing attention to forms of perception, knowing and sense-making, which are primarily considered non-conscious, non-cognitive, non-representational, shareable, trans-subjective, collective and operating as thresholds or conversion points. Automaticity also brings together cognitive and neuroscientists within the present, and circulates across distinct yet interrelated traditions, concerned with how brains, minds and worlds connect to produce experiences of automaticity that unsettle some of the assumptions and concepts that have become rather black-boxed within the psychological and neurosciences; will, consciousness and intention, for example. Although this research primarily comes from the psychological sciences and particularly the cognitive neurosciences, the concepts that are deployed travel

across and within media and cultural theory, as well as perhaps lying behind some of the new ways of imagining our relationship to mediation, or what Grusin (2010) terms mediality (combining approaches to mediation with specific understandings of affectivity, for example). Automaticity deserves attention and is an area which would benefit from collaboration across the humanities and sciences. The turn to affect therefore does seem to be one area that holds such a promise.

Towards a Conclusion

Many affect theorists have focused attention on how affect does not require a (human) subject to take form, focusing on transmission across space and time through a Deleuzian topology of the virtual/actual and the biomediated body (see Clough, 2008). Despite these moves I want to retain the place for a radically transformed subject within such discussions. The trans-subjective ontology of subjectivity, which underpins work on automaticity, rather than displacing the human, brings questions of ‘post-human phenomenology’ to the foreground in ways that I argue have not been displaced. Although the ‘alongside’ and above are recognised as important processes of affectivity, the ‘below’ has itself become somewhat stuck within particular traditions and paradigms for exploring and theorising subjectivity. In the spirit of the way Silvan Tomkins’ theories were taken up by Eve Kokofsky Sedgwick (2003) who she suggests was a psychologist who was ‘sublimely resistant’ to core psychological assumptions,⁷ I want to remain open to other resistant ways of modelling subjectivity which are still of interest. And of course, the dynamism of science, as much as cultural theory, must surely be in exploring and inventing new models or modelisations of subjectivity, which allow radical and creative forms of experimentation to take shape.

Work on automaticity refigured within the context of affect studies is one area that has the potential to allow imaginative work on subjectivity to be enacted and transformed. It could open up rather than close down the question of the ontological status of affect within current formulations. Surely this is a direction to pursue if only to breathe life into debates, which are fast in danger of becoming limited by academic defence and posturing. The focus on more controversial areas within the sciences (including what I am terming Queer Science) might also open up our own research to more creative experimentation with method, attuning to what it might be possible to produce, perform and enact in our own research. The more performative strategy to experimentation that I am advocating is something that clearly haunts scientific experimentation in relation to automaticity in the present. It is one that we would be wise to acknowledge in our own potential engagements with the neurosciences and beyond.

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Notes

- 1 See *The Fibreculture Journal*, 'Exploring Affect in Interaction Design, Interaction based art and Digital art', Issue, 21 edited by Jonas Fritsche and Thomas Markussen (December, 2012).
- 2 Tarde influenced the work of Deleuze and Latour and there is now a sizeable scholarship on his significance for contemporary cultural theory. This includes an edited collected by Candea (2010) and a special issue of the journal *Economy and Society* in 2007 edited by Andrew Barry and Nigel Thrift.
- 3 See Haslam and Reicher's 2009 article published in *Scientific Mind*, 'The Psychology of Tyranny', which makes a case for the relevance of social identity theory in the context of explaining genocide, 'ethnic cleansing', the abuse of Iraqi prisoners in Abu Ghraib and suicide bombing, for example.
- 4 There is also a lineage from this to Merleau-Ponty's phenomenological approach to perception. I do not have the time in this article to explore this connection but thank you to Valerie Walkerdine for pointing this out.
- 5 Karen Barad's work has been hugely influential across the humanities, extending Judith Butler's concept of performativity in relation to the liveliness of matter and post-human agencies. She is often cited as one of the founders of new materialist philosophy, although it is unclear whether she would use this term to describe her own approach.
- 6 For a useful description and extended discussion of the experiments see Rose and Abi-Rached (2013).
- 7 This would not be the view of many trained within critical approaches to psychology.

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