THE CARD INDEX AS CREATIVITY MACHINE

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… everything that matters is to be found in the card box of the researcher who wrote it…
(Benjamin, 1996: 456)

Introduction: Tableau Vivant

A particular photograph of Roland Barthes has always fascinated me. It is a well-known image, taken by Henri Cartier-Bresson in 1963, around the time of the publication of Barthes' *Sur Racine* (*On Racine*). The image is of a youthful Barthes in an office setting, reclining in a chair. He has mute but playful eyes and a sardonic half-smile. His legs are crossed, right over left. He wears crisply creased slacks, and a white shirt under a woollen cardigan. His right arm is hooked over the back of his chair – a rather awkward gesture but one that nevertheless conveys confidence, perhaps even arrogance. His left elbow rests on the left arm of his chair; the left hand is raised and cocked slightly, a cigarette stub between his first two fingers and his thumb. In the background is office shelving, housing various hanging files, and, above these, a series of smaller wooden boxes.

In one sense, this photograph is amusing as a playful homage to a writer Barthes admired and studied in great depth: Michelet. As Barthes' biographer Louis-Jean Calvet notes, in the course of his research, Barthes 'had been fascinated by Couture's portrait of Michelet sitting at his desk with a slightly disdainful, superior air' (Calvet, 1994: 114-115). Is this a case of Barthes and Cartier-Bresson knowingly recreating this earlier image? The photograph is also revealing if one follows Cartier-Bresson's own *modus operandi* and recognises it as a 'decisive moment'. Interpreting the image in this way, and by reading it, scanning it, as Barthes himself might have done, for a *punctum*, we might reasonably be drawn to the ever-so-slightly effeminate gesture of the cocked hand and delicately held

cigarette. Alternatively, we might fix our gaze on the half-smile and straight-ahead gaze, which seem to speak a certain bemusement or curiosity on the part of the (famous) subject as he poses for the (equally famous) photographer. There exists a kind of ocular repartee between the unsighted photographer and his subject.

Yet, what interests me in this image is not explained by the *punctum*, for there is nothing which necessarily leaps out to 'sting' in the way that the *punctum* is understood to do. Rather, what takes my attention would ordinarily be attributed to the *studium* of this image. I am speaking here of what appear to be Barthes' *fichier boîte* or index card boxes which are visible on the shelf above and behind his head. On one level, these boxes are banal in the precise sense that they add to the 'reality effect' of the image; they are tools of his trade as a researcher, 'seemingly functionless detail', and included 'because it is there', to signal that 'this is indeed an unfiltered sample of the real' (Mitchell, 1994: 27; Barthes, 1982: 11-17). On another level, however, they can be read symbolically – perhaps even metonymically – as a kind of crucial pictorial 'biographeme'. What I am alluding to here is well drawn out in Walter Benjamin's reflection in his *Moscow Diary* on how we 'grasp' a visual image. 'One does not in any way enter into its space', he writes. Rather, 'It opens up to us in corners and angles in which we believe we can localise crucial experiences of the past; there is something inexplicably familiar about these spots' (Benjamin, 1985: 42). Denis Hollier, in an essay on index card use by Barthes and Michel Leiris, argues that Leiris' use of index cards in writing his autobiography results in 'a secondary, indirect autobiography, originating not from the subject's innermost self, but from the stack of index cards (the autobiographical shards) in the little box on the author's desk' (Hollier, 2005: 39). In a parallel way, I too am interested in a 'secondary', indirect autobiography: that which tells the story of the creative use of index cards, a tale told via an exploration of Barthes' usage, and the shaping role of the index card in influencing his own textual production and the evolution of his thinking on textuality.

Thus, I begin with the description of this photographic scene not in order to present the index card as some kind of fetish object or totem. Rather, this scene serves to usefully introduce the main theme and preoccupation of this paper: the card index as a key, analogue form of creative media. In exploring this theme, I wish to use Barthes' use of index cards as a case study. While Barthes' use of index cards has been documented elsewhere (Krapp, 2006; Hollier, 2005; Calvet, 1994), the general case I wish to make is that, at all

levels of his work, the significance of his card index has been understated and that, while part-and-parcel of his usual daily professional activities, they have in fact played a key but largely hidden role in shaping many facets of his intellectual endeavours. More specifically, I want to argue that Barthes' use of index cards moved from operating as an archival device – an *aide-memoire*, on which he transcribed passages from his reading and recorded his thoughts – to operating, increasingly, as an organisational device, a kind of 'creativity machine' that served a crucial function in the very construction of his written texts, and shaped his thinking on textuality and the role and operation of literary criticism.

In this way, I want to extrapolate from the specific case of Roland Barthes to develop a larger, concluding argument: that Barthes' specific usage is illustrative of wider intellectual usage of card indexes as pre-digital creative media; in other words, not just as an archival device, but, crucially, as a key historical technology of *invention*. I intend this last term in the precise sense in which Derrida (1989) understands it, that is, as an oscillation between the performative and the constative, with the former working to disrupt itself (the performative) and the latter (the constative) – or what might be termed the unsettling operation of invention.

Historical Precedents: Card Indexes in the Production of Philosophical Thought

Barthes is by no means the first thinker and writer to maintain a card index. In a remarkable essay on precursors to hypertext, Peter Krapp (2006) provides a useful overview of the development of the index card and its use by various thinkers, including Locke, Leibniz, Hegel, and Wittgenstein, as well as by those known to Barthes and part of a similar intellectual milieu, including Michel Leiris, Georges Perec, and Claude Lévi-Strauss (Krapp, 2006: 360-362; Sieburth, 2005).[1] In constructing this list, Krapp argues that, despite its 'respectable lineage', the card index generally 'figures only as an anonymous, furtive factor in text generation, acknowledged – all the way into the twentieth century – merely as a memory crutch' (361).[2] A key reason for this is due to the fact that the 'enlightened scholar is expected to produce innovative thought' (361); knowledge production, and any prostheses involved in it, 'became and remained a private matter' (361).

With respect to the use of index cards, this all changed with the work practices of Wittgenstein and Lévi-Strauss, where knowledge production and innovative thought are closely entwined. In the case of Wittgenstein, he worked with typescripts and would often cut up the typed text into fragments so he could rearrange the order of the remarks jotted on them (Krapp, 2006: 362; von Wright, 1969). One output generated via this approach was an unpublished typescript of 768 pages (entitled *The Big Typescript*), which was generated by Wittgenstein from his 'Zettel', a box containing over 700 text fragments (or 'scraps') and other loose pages (Krapp, 2006: 362). Walter Benjamin employed a similar technique (Benjamin, 2006, 2007). Such radical compositional approaches are contemporaneous with the Surrealist use of montage, but predate Burrough's cut-up-fold-in technique, and 'put[...] the avant-garde claims of hyperfiction to shame' (Krapp, 2006: 362). In the case of Lévi-Strauss, meanwhile, the card index continued to serve in important ways as a 'memory crutch', albeit with a key difference from previous uses of the index as an *aide-memoire*. In Lévi-Strauss' case, what the fallibility of memory takes away, the card index gives back via the workings of chance. As he explains in an interview with Didier Erebon:

> I get by when I work by accumulating notes – a bit about everything, ideas captured on the fly, summaries of what I have read, references, quotations… And when I want to start a project, I pull a packet of notes out of their pigeonhole and deal them out like a deck of cards. This kind of operation, where chance plays a role, helps me revive my failing memory. (Cited in Krapp, 2006: 361)

For Krapp, the crucial point here is that, through his use of index cards, Lévi-Strauss 'seems to allow that the notes may either restore memory – or else restore the possibilities of contingency which gives thinking a chance under the conditions of modernity' (2006: 361).

These examples demonstrate a rich part of the tradition of using index cards as a memory aide and as an experimental organisational device. Indeed, for Krapp, the long-standing use of index cards in creative intellectual labour forms a crucial part of his own attempt to develop what he calls an 'archaeology', or a 'prehistory', of multimedia. It is in this context that Krapp suggests the index card serves as a useful reminder that 'fiction and technology "converge"

long before the age of the personal computer' (2006: 369), and that hypertextual chance and play are part of a long and rich history of textual innovation. It is this tradition of textual innovation (to which we shall return later) that provides a valuable context in which to situate the following discussion of Barthes' own use of index cards.

The Card Indexes of Roland Barthes

Over the course of his intellectual life, from about 1943 until his sudden death in 1980, Barthes built a card index consisting of more than 12,250 note cards – the full extent of this collection was not known until access to it was granted to the manuscript researchers of the Institut Mémoires de l'édition contemporaine (IMEC) in France (Krapp, 2006: 363).[3] Barthes' use of these cards goes back to his first reading of Michelet in 1943, which, as Hollier (2005: 40) notes, is more or less also the time of his very first articles. By 1945, Barthes had already amassed over 1,000 index cards on Michelet's work alone, which he reportedly transported with him everywhere, from Romania to Egypt (Calvet, 1994: 113). The filing cards or slips that Barthes inserted into his index-card system adhered to a 'strict format': they had to be precisely one quarter the size of his usual sheet of writing paper. Barthes (1991: 180) records that this system changed when standards were readjusted as part of moves towards European unification. Within the collection there was considerable 'interior mobility' (Hollier, 2005: 40), with cards constantly reordered. There were also multiple layerings of text on each card, with original text frequently annotated and altered.

Much of Barthes' intellectual and pedagogical work was produced using his cards, not just his published texts. For example, Barthes' Collège de France seminar on the topic of the Neutral, the penultimate course he would take prior to his death, consisted of four bundles of about 800 cards on which was recorded everything from 'bibliographic indications, some summaries, notes, and projects on abandoned figures' (Clerc, 2005: xxi-xxii).

By the early 1970s, Barthes' long-standing use of index cards was revealed through reproduction of sample cards in *Roland Barthes by Roland Barthes* (see Barthes, 1977b: 75). These reproductions, Hollier (2005: 43) argues, have little to do with their content and are included primarily for reality-effect value, as evidence of an expanding taste for historical documents. Wider knowledge of Barthes' card index was also disseminated to the general public

through interview. In one notable example, published under the title 'An Almost Obsessive Relation to Writing Instruments', which first appeared in *Le Monde* in 1973, Barthes describes the method that guides his use of index cards:

> I'm content to read the text in question, in a rather fetishistic way: writing down certain passages, moments, even words which have the power to move me. As I go along, I use my cards to write down quotations, or ideas which come to me, as they do so, curiously, already in the rhythm of a sentence, so that from that moment on, things are already taking on an existence as writing. (1991: 181)

This passage is preceded in the interview by a discussion of Barthes' use of typing in which Barthes laments his inability to 'naturalise' use of this mechanical prosthesis, to become so familiar with it that it becomes part of the flow of his writing. What is noteworthy about the above passage, in contrast, is the way in which this other machinic prosthesis – the card index – has nestled successfully in and has become indispensable to his daily rhythms of textual production.

The function that index cards serve in the planning and organisation of his texts is also clear from various accounts of Barthes' work. For instance, Louis-Jean Calvet details the pivotal role played by index cards in the organisation of Barthes' *Michelet*. This book, Calvet argues, is one of the least talked about but most important of Barthes' publications, 'both in terms of the method he employs in it and its form' (1994: 113). A slim volume of just over 100 pages, it took Barthes twelve years to complete and his index cards were key in resolving the final structure and themes of the book. As Calvet explains, in thinking through the organisation of *Michelet*, Barthes 'tried out different combinations of cards, as in playing a game of patience, in order to work out a way of organising them and to find correspondences between them' (113). In this sense, the card index is the quintessential structuralist tool in that it simultaneously combines the paradigmatic (selection) with the syntagmatic (combination) in one mechanism.

Michelet itself is book-ended by what Calvet calls 'a kind of instruction manual' (114) for the reader in which Barthes sets out 'directions for use' for how the book is structured and what he sees

as its project. In his words, *Michelet* is an attempt to recover 'an organised network of themes' in Michelet's work (Barthes, 1987a: 3). As Barthes goes on to add at the end of the book, 'Michelet's discourse is a kind of cryptogram, we must make it into a grid, and this grid is the very structure of th[is] work' (Barthes, 1987a: 206). What is evident from this discussion of *Michelet* and the earlier interview excerpt is the way that Barthes used index cards both as an organisational and as a problem-solving tool. In this respect there are clear parallels between Barthes' use of cards and the similar organisational strategies of Wittgenstein and Lévi-Strauss noted above.

Calvet suggests that it is through Barthes' early experiences with using index cards, particularly in organising *Michelet*, that he discovered a research and compositional method which suited him. As Calvet explains, this consisted of Barthes 'writing out his cards every day, making notes on every possible subject, then classifying and combining them in different ways until he found a structure or a set of themes' (1994: 113) which he could proceed to work with.

Like Lévi-Strauss, Barthes was also quite explicit about the role that chance – or what he prefers to call the 'controlled accident' (Barthes, 1991: 182) – played in this organisational process. Barthes remarks:

> In the second part [... of] *Sade, Fourier, Loyola*, for example, chance intervenes only in the initial constructive action of giving a title to each fragment. In *The Pleasure of the Text*, these fragments are chosen according to letters of the alphabet. In the end, each book requires a search for its own appropriate form. (Barthes, 1991: 182)

According to Krapp, admissions like this, along with Barthes' inclusion of facsimiles of his cards in *Roland Barthes by Roland Barthes*, are all part of Barthes 'outing' his card catalogue as 'co-author of his texts' (Krapp, 2006: 363). The precise wording of this formulation – designating the card index as 'co-author' – and the agency it ascribes to these index cards are significant in that they suggest a usage that extends beyond mere memory aid to form something that is instrumental to the very organisation of Barthes' ideas and the published representations of these ideas.

In order to tease out the full implications of this more active understanding of the card index, it is first necessary to give consideration to what Hollier calls Barthes' 'signature form': the 'discontinuous'.

The (Non-Totalisable) Fragment

Underlying Barthes' enduring concern for the discontinuous, as many critics have noted (Bensmaïa, 1987; Mellamphy, 1998; August, 1981), was his deep and abiding interest in the concept of the fragment. Central to the work of Barthes – and the work of his contemporaries, such as Maurice Blanchot – is a particular understanding of the notion of the fragment, in Bensmaïa's words, as 'non-totalisable' – that is, the fragment that stands alone, that does not, when joined with other fragments, form a coherent whole. For instance, in one textual fragment in *Roland Barthes by Roland Barthes* which addresses the role of the fragment, Barthes writes, 'Not only is the fragment cut off from its neighbors, but even within each fragment parataxis reigns' (1977b: 93). Similarly, Blanchot remarks that, 'fragments are written as unfinished separations' (1995: 58):

> Fragments, destined partly to the blank that separates them, find in this gap not what ends them, but what prolongs them, or what makes them await their prolongation – what has already prolonged them, causing them to persist on account of their incompletion. (58)

Consistent across both these descriptions is an understanding of the fragment as an autonomous unit that not subsumable within a greater whole.[4]

The full implications of this particular (and perhaps counter-intuitive) approach to conceiving of the fragment have been explored at length in a 1998 essay by Dan Mellamphy. In this essay, Mellamphy underscores the need to resist thinking of the fragment as part of a larger whole. 'The fragment as fragment', he writes, 'is eternally unfinished – it is never *whole*, nor (following this very logic) a *part* of any given *whole*' (Mellamphy, 1998: 92 – original emphasis). Mellamphy urges instead that we think of the fragment as '*apart from* a part, and therefore as wholly distinct from the whole (of which the part is a part) as well' (83 – original emphasis). The 'fragment as fragment', he declares, 'escapes the logic … of *part* and

whole (83 – original emphasis). Instead, the fragment 'breaks off, breaks up, ruptures, shatters' (84). Conceiving of the fragment in this way requires both a reorientation of our thinking and a leap of faith. This is because the 'the experience of the fragment as fragment', according to Mellamphy, 'is the experience of the eternal return of the unfinished, of the incomplete, of the abandoned' (85). In developing this reading of the fragment, Mellamphy extends beyond a consideration of its textual implications to develop what might be described as an 'ethics' of the fragment. 'To think the fragment', he writes, 'is to think [that] which overcomes, overturns, overtakes stratified organisations and subject-formations' (85). In this respect, Mellamphy's essay is ultimately a call-to-arms of sorts, an encouragement to treat seriously what he (after Blanchot) calls the 'fragmentary imperative' (91): the need to 'think the fragment' as 'the state of being of becoming … of the *return to* or *turn to* … the unfinished' (85 – original emphasis).

It is beyond the scope of the present article to develop the wider epistemological, ontological and ethical dimensions that Melamphy sees as carried by the 'fragmentary imperative' of the 'non-totalisable' fragment. While these extensions are important, the primary aim here is to explore how Barthes uses the notion of the 'non-totalisable' fragment in his own work, and how this ties in with a discussion of his use of index cards.

In his delicately argued book-length study of the Barthesian essay, Bensmaïa (1987) situates the 'non-totalisable' fragment at the very heart of Barthes' intellectual endeavours and argues that it plays a crucial role in the development of his thinking on textuality and writing, particularly from *S/Z* onwards.[5] Bensmaïa argues that Barthes' critique of the traditional relationship of writer and reader-critic led him to refuse 'any idea of mastery' and, with this, to reject 'both the notion of the system and the classical norms of textual composition' (Bensmaïa, 1987: 31).[6] This refusal is expressed clearly in *Roland Barthes by Roland Barthes*, where Barthes declares: 'No more anguish of "schema", no more rhetoric of "development", no more twisted logic, no more dissertations!' (1977b: 147). In desiring an alternative to these things, it is suggested that Barthes became increasingly interested in the 'economy of the fragmental text', and with how the fragmental text might serve (in Bensmaïa's words) as 'the "matrix" of all genres' (xxvii). We get a clear illustration of such deliberations in the following passage from *Writer Sollers*, in which Barthes touches on the inadequacies of

traditional literary criticism, inadequacies that are exposed in his attempts at a critical reading of Sollers' novel *H*:

> How do you write an article of literary criticism? You read the book through, you make notes, you make a plan, and you write. Here, this isn't the right way. *H* takes you to the limit of commentary. It doesn't allow 'the general idea'. Hence the fragments with which I am presenting you. They alone, it can be hoped, will prevent the production in the commentary of this 'fantasma of unity' that *H* precisely sets out to dissolve. (Barthes, 1987b: 84)

Here Barthes is gesturing towards the idea of the text 'as a space of many voices, of quotations drawn from many discourses' (Moriarty, 1991: 122) – as Barthes writes in 'From Work to Text', 'the discourse on the Text should itself be nothing other than text' (1977a: 164). Barthes is also drawing attention to the idea that the practice of writing text is one that is 'generated from [non-totalisable] fragments outside established classifications which refuse a fixed center or totalizing scheme' (Richman, 1987: xi). Both these tactics are crucial components within Barthes' attempt to construct a 'critique of metalanguage', which, it has been argued, he 'deemed crucial' to his developing theory of textuality (Mowitt, 1992: 134).

In this context Bensmaïa argues that *S/Z* constitutes a crucial text in the development at the time of Barthes' thinking on, and strengthening commitment to, the fragment and the fragmental text. Bensmaïa describes *S/Z* variously as marking a turning-point, as a 'privileged instrument', a critical 'rehearsal', and a 'commentary on the "ideal text"' that, he suggests, Barthes systematically and consistently put into practice following the publication of *S/Z* (1998: xxvii). All of the major books that were to follow – *Sade / Fourier / Loyola* (1997), *The Pleasure of the Text* (1975), *Roland Barthes by Roland Barthes* (1977), *A Lover's Discourse* (1990), and *Camera Lucida* (1993) – are texts that are 'plural' and 'broken', and which are 'constructed from non-totalizable fragments and from exuberantly proliferating "details"' (Bensmaïa, 1987: xxvii-xxxviii). In all of the above cases the fragment becomes the key unit of composition, with each text structured around the arrangement of multiple (but non-totalisable) textual fragments.

Yet, in embracing the fragmental text in his later works, Barthes was also clearly aware of the compositional difficulties associated with it: in *Roland Barthes by Roland Barthes*, for example, he asks, 'What is the meaning of a pure series of interruptions?' and 'If you put the fragments one after the next, is no organization possible?' (1977b: 94). In spite of this apparent self-reflexivity, for all intents and purposes these are largely rhetorical questions. Barthes is clear that, 'from start to finish … fragments remain fragments' (Bensmaïa, 1987: 35) and that 'parataxis reigns' (Barthes, 1977b: 93). As Bensmaïa (1987: 40) asserts, the very essence of the fragment is to be self-sufficient; its economy, its method is that of 'abrupt, separated, broken openings' (Barthes, 1977b: 94).[7]

Importantly, the logic of the non-totalisable fragment also pervades and underpins many of the concepts and devices Barthes draws on in the course of his textual analyses. For instance, the non-totalisable fragment is evident in his concept of the *scriptible* text as one that insists on 'plurality, heterogeneity, non-totality' (Moriarty, 1991: 128) and which allows for 'a multiplicity of critical languages … without according any one precedence over the others' (139). It is even more obvious in *S/Z*, where Barthes develops the concept of *lexias* as 'contiguous fragments' or 'units of reading' that 'will not then be regrouped [and] provided with a metameaning' (Barthes, 1991: 13-14).

The Card Index and Textual Theory

Having outlined Barthes' commitment to the non-totalisable fragment, and the way this commitment pervades many of the key theoretical concepts he developed, I wish to return to the card index and to Barthes' use of it as a device for textual production. I want to suggest that it is not at all difficult to discern in these theories and concepts of his the imprint of his card index. For instance, it is possible to view Barthes' concept of the *lexia* as an almost literal translation of his own use of index cards for recording various 'units of reading' and other ideas and associations. Here, however, the organisational function is downplayed insofar as the actual ordering of the lexemes in *S/Z* is dictated by the structural sequence of Balzac's story. Nevertheless, what becomes clear is that, by the time of *S/Z*, Barthes' card use appears to have undergone a transformation from a mnemonic and problem-solving tool to a crucial *critical* device, a transformation that is crystallised in the

concept of the *lexia*. In this sense, the index card serves as both example and facilitator of the concept of the *lexia*.

The imprint of Barthes' card index is also felt in his concept of *scriptible* texts. Moriarty describes these as texts combining 'multiple networks of meaning, many points of access, of which none would have priority over the others, so that meaning would be ultimately undecidable' (Moriarty, 1991: 119). It is an understanding that also mirrors the inner workings of the card index itself: as Denis Hollier points out, as a filing system, the card index is 'indefinitely expandable, rhizomatic (at any point of time or space, one can always insert a new card) [and …] its interior mobility allows for permanent reordering' (Hollier, 2005: 40). In a related vein, Thody states that texts, in the sense in which Barthes employs the term, 'do not contain a solid centre of guaranteeing truth' (1977: 2). Rather, they work 'by setting into motion an infinite interplay of ideas in the mind of the reader' (2). This idea similarly describes the precise way that Barthes (and Levi-Strauss, for that matter) drew on the card index for inspiration and as a creative, organisational and free-floating or flexible device in textual production.

The argument put forward here, in short, is that Barthes' index cards (and the larger card indexes from which individual cards are drawn) can be read as a kind of 'tutor text', a form of instruction by example, for the sorts of theoretical reorientations that Barthes was attempting in developing his theories of textuality, and in resolving the critique of the textual object with textual performance (Hollier, 2005: 42).

To this point I have suggested that Barthes' use of index cards is significant on two levels. On one level they operate as a key compositional device employed in the construction of his texts. On another level, they can be read as a precursor to – or 'tutor text' in – the development of his thinking on textuality and criticism. Beyond this again, on a third level, the full significance and impact of Barthes' card index on his engagement with the notion of the non-totalisable fragment, the process and purpose of literary criticism, and his development of specific theoretical concepts, can be productively understood by situating his card index use in the context of French intellectual avant-gardist invention (Lash, 1990: 264; Gasché, 1994). Derrida argues that invention is a process that operates between two poles. At one end is the performative, which involves 'producing, instituting, transforming', and, at the other end, is the constative, which involves 'discovering or unveiling, pointing

out or saying what is' (Derrida, 1989: 33-34). Within these two poles, Derrida argues,

> The infinitely rapid oscillation between the performative and the constative, between language and metalanguage, fiction and nonfiction, autoreference and heteroreference, etc., does not just produce an essential instability. This instability constitutes that very event … whose invention disturbs normally, as it were, the norms, the statutes, and the rules. (1989: 34-35)

Relating this conceptualisation of invention to his own interest in deconstruction ('deconstruction is inventive or it is nothing at all', 42), Derrida suggests that it is not enough for the performative to perform. The performative aspect of invention, he insists, must continually 'unsettle the performative and of whatever distinguishes it comfortably from the constative' (61).

Barthes' use of his card index, I want to suggest, can be viewed as inventive in the precise sense in which Derrida means it: as an oscillation between the performative and the constative and where the former (the performative) is continually working to unsettle itself and the latter (the constative). In Barthes' case, at the heart of this process, this movement, and 'mediating' the unsettling oscillation between the two poles, is his card index. Writing on structuralism, Barthes (1972b) states that 'the goal of all structuralist activity, whether reflexive or poetic, is to reconstruct an "object" in such a way as to manifest thereby the rules of functioning (the "functions") of this object'. This insight can be applied to the 'object' of critique (such as Michelet's *oeuvre*) as well as to the *critique as 'object'* (such as Barthes' own *Michelet*). In the latter case, as in much of his published work, Barthes doesn't just perform critique; he works to unsettle the performance of critique through performance, especially via his creative engagement with the fragmental text – an engagement, as I have argued above, which is very much shaped by his own card index use.

This concludes my examination of Barthes' engagement with index cards. In the final section to follow, I want to draw from this examination of Barthes' own use of the index card to consider some of the wider implications of the index card as a particular form of creative media.

The Card Index as Creativity Machine

In a remarkable German study of 'the media-technological conditions of files and recording devices', Cornelia Vismann (2008: xii) distinguishes files according to different forms of action (xiv). These include transmission, storage, cancellation, manipulation and destruction (xiv; see also Derrida, 1996). What is underplayed in Vismann's account of files, however, is the crucial act of *creative* production associated with file use. This, I wish to assert, is a key feature of contemporary, critical engagement with the card index as a specific file type.

In Barthes' case, as we have seen, there is a strong engagement with the index card as a form of creative production. From his writing of *Michelet*, and in his *Le Monde* interview declarations, to the production of *S/Z* and the texts which follow this, there is an evolving use of the card index from an organisational and problem-solving device to something more akin to a 'creativity machine' that exerts a distinct shaping influence on the very development and trajectory of Barthes' theories of textuality and overall philosophical outlook.

The machine metaphor of the 'creativity machine' is an appropriate one in this instance insofar as it already appears in a number of places in the available literature on Barthes. For instance, in a discussion of the fragmentary, discontinuous nature of Barthes' later writing, Bensmaïa refers to the Barthesian essay as an 'open-ended, interminable writing machine' (1987: xix). The value of this metaphor has also been recognised in critical examinations of structuralist theory.[8]

Barthes even employs the term 'writing machine' as a heading for one textual fragment in *Roland Barthes by Roland Barthes* (1977b: 110), which forms the only explicit evocation of a 'machine' in Barthes' writing. In this fragment, which consists of two short paragraphs, Barthes considers an earlier essay of his, published in his 1963 *Critical Essays*, on the seventeenth century French writer La Bruyère, and his focus in this earlier essay on the rhetorical pair of metaphor/metonymy. Barthes' reflection is a kind of reminiscence about what he proposed back in 1963 regarding the 'power of saying something' (Barthes, 1977b: 110). This 'power' resides in the coupling of the rhetorical pair, which Barthes links consequentially to the work as it proceeds (via 'conceptual infatuations, successive enthusiasms, perishable manias' – 110) and the advancement of

discourse (via 'little fates, by amorous fits' – 110). For Barthes, power and its fitful advancement, it would seem, constitute 'the writing machine' (110).

Given the 'creative media' theme of this special issue of *Culture Machine*, there is also value in thinking about and extending the applicability of this concept of 'the writing machine' to index cards as they fit within contemporary media discourse, especially as it is has been developed within German media studies. As Eva Thorn explains, in the eyes of a number of German media theorists, '"media studies" seems to lack a consensus about its field and/or its object of study. Doors and mirrors, computers and gramophones, electricity and newspapers, television and telescopes, archives [and index cards] and automobiles … – all these highly disparate objects and phenomena fall into media studies' purview' (2008: 7-8). Quoting Friedrich Kittler, Thorn explains that the aim of such an all-encompassing approach to media is to focus on the 'networks of technologies and institutions that allow a given culture to select, store, and process relevant data' (cited in Thorn, 2008: 7). As a result, Thorn argues, 'media are not only the conditions of possibility for events – be they the transfer of a message, the emergence of a visual object, or the re-presentation of things past – but they are in themselves events: assemblages or constellations of certain technologies, fields of knowledge, and social institutions' (8). This conception of media as both enabler and actualisation of events is precisely how index cards as creative media are understood here.

In developing the idea that the card index constitutes a 'creativity machine' (in the realisation of/as 'events'), my emphasis on *creativity* over *writing* is quite deliberate and permits a more expansive and productive understanding of the possibilities that are afforded by the card index. In Barthes' case, for example, as Calvet and Krapp have noted, his card index served a crucial role in the organisation, formal resolution and the 'authoring' of his texts. In these ways, it is possible to view the card index as a corollary of Espen Aarseth's (1997) notion of 'cybertexts' – a term bridging paper-based and screen-based texts – as 'textual machines' that 'share a principle of calculated production'. Furthermore, combinatorial logic dictates that the card index is also the wellspring of creativity insofar as it permits expansive possibilities for future intellectual endeavours (see Hollier, 2005: 40; cf. Krapp, 2006: 367).

Thus, the general claim I want to make about index cards as a technology is that they are much more than mere tool. Rather, they are, more fully, a 'creative agent' in the process of knowledge production. This is an understanding that is now familiar to us in relation to technologies such as the computer. As Derrida writes of the computer, 'I don't feel the interposition of the machine as a sort of progress in transparency, univocity, or easiness. Rather, we are participating in a partly new plot' (2005: 21). However, the role of technology as creative agent is less evident to us in relation to older technologies, such as the index card. This is despite the fact that it functions as such in a variety of different ways in relation to textual organisation, composition and authorship. In the space that remains, I wish to tease out this idea of the index card as a creative agent in knowledge production by returning to reconsider the issue of the index card as an archival or 'mnemotechnical' device.

As an archival technology, the index card is creative in the basic sense that it contributes to the production of something new. This fundamental understanding of creative production is explored by Derrida in his short meditation on archives, *Archive Fever*, where he explains how 'archivable meaning is also and in advance codetermined by the structure that archives' (1996: 18). Archival technologies of all sorts are implicated in this structure. This is the case whether they are comparatively new technologies (such as CD-ROMs, electronic databases, html files and Web sites, e-mail, microcomputers, as well as digital photocopiers), or older technologies (such as the index card). Utilisation of these technologies (in this case, the index card) within the archival process serves to 'transform archives from top to bottom and in the most initial inside of its production, in its very events' (16). That is to say, the archive 'produces as much as it records the event' (17), similarly to the way that news media produce rather than report news events.

In order to draw out the full implications of the card index as a mnemotechnical device and creativity machine, it is valuable to turn to the work of Bernard Stiegler, and specifically to his idea of 'tertiary memory'. Stiegler develops this concept of tertiary memory through a reading of Husserl, and proposes it as a supplement (and corrective) to Husserl's understanding of primary and secondary retention. For Husserl, primary retention involves perception, while secondary *retention* involves *imagination*. With respect to the first one of these, Stiegler explains what Husserl means via reference to the example of how we experience musical melody: 'When I listen to

a melody, the [temporal] object is presented to me in a flow. In the course of the flow each of the notes which presents itself now has retained in it all the notes which preceded it …' (quoted in Roberts, 2006: 57). Thus, as Roberts explains, a melody is 'an example of primary retention in as much as the retention of previous notes belongs to the very act of perception', and, 'without this primary retention, or primary memory, there is no perception of the melody' (57). As far as secondary retention goes, an example of this would be when we recollect a melody heard on a previous occasion.

Stiegler's argument is that Husserl's schema becomes problematic when the issue of reproduction is introduced. In this case, as Roberts explains, 'the very experience of perceiving the same temporal object twice is possible only by virtue of the prosthetic memory support of digital or analogue recording' (58). The recorded memories made possible by various technological prostheses or memory supports Stiegler refers to as 'tertiary memory'.

In outlining this concept of tertiary memory, Stiegler makes two crucial points that have a significant bearing on the present discussion of index cards as a form of creativity machine. The first is that the technical memory support that enables and forms tertiary memory 'highlights the fact of the selection of primary retention by consciousness, and thus the intervention of imagination at the very centre of perception' (quoted in Roberts, 2006: 58). Furthermore, as Lechte (2007: 69) points out, writing and its material supports – such as the index card – are 'part of recording' and thus implicated in this understanding of 'tertiary memory'. This is significant in the sense that imagination as creative production is thus intimately linked to our use of various mnemotechnical textual devices, such as the index card. The second key point is that, for Stiegler, 'tertiary memory always already inhabits my secondary memories as well as my primary memories and my present "itself"' (2009: 42). In other words, 'tertiary memory is constitutive of primary and secondary memory and not derivative from them' (Roberts, 2006: 58). Such an understanding again places our mnemotechnical prostheses – like the index card – at the very centre of human perception, creativity and invention.

One thing should be made clear: this is clearly not to outline a technological determinist argument. Rather, it is to acknowledge that our technological prostheses, such as the computer, and the card index before it, are significant 'non-human actors' (Latour, 2005) that are entwined in a 'complex distribution of agency –

between people, objects, technologies, texts' (Bennett & Healy, 2009: 3). Or, to put this in Stieglerian terms, 'prosthetics are not an addition that may be dispensed with'; rather, they 'are a necessary part of human "identity"' (Lechte, 2007: 66). To follow this configuration is to grasp how and why the index card can and should be considered to function not only as a tool but also, and more particularly, as a creative agent in the process of knowledge production. This is something that has long been grasped by artists (Spieker, 2008; Krauss, 1985). It is also something that has been both understood and embraced by intellectuals, from Wittgenstein and Levi-Strauss, to Leiris, Perec, and, of course, Barthes. In these contexts, the index card/card index is a key historical form of 'creative media' – one that is instructive for exploring the epistemological question of how we can perform knowledge differently through a set of practices that also 'produce things'.

Conclusion

I opened this article with an examination of Cartier-Bresson's 1963 photographic portrait of Barthes, where I proposed that these card boxes reveal a 'secondary', indirect autobiography – one which tells the story of the overall place of the card index in Barthes' work, and the crucial role they have served in shaping all facets of his intellectual endeavours, from recording his notes, and organising his thoughts and arguments, to moulding the development of his thinking on criticism and textuality.

In closing, I would like to return to this image to further consider the place and function of the index card boxes in the background to this image. What I would like to propose is that, in this particular photograph, the inclusion of these card boxes also serves as a reminder – indeed, as crucial documentary evidence – of invention (in the Derridean sense) and of the card index's crucial place in facilitating this philosophical invention. As Rodolphe Gasché (1994: 9) explains, in relation to Derrida's particular conception of invention, 'the arrival of something new' can 'only be established' on condition that it is 'subjected to the public' and publicly recognised and legitimised as new. Of course, and as detailed above, Roland Barthes was not the first or the only thinker to use a card index in creative ways in the course of his intellectual endeavours. However, as a case study, what is remarkable about Barthes's use is how index cards figure in Barthes' intellectual labours in rich and complex ways. They have served as memory aid, organisational device, and as 'co-

author' or 'creativity machine' in the construction and formal resolution of his texts, in the process serving as a kind of exemplary illustration of, or model for, his later theoretical formulations on textuality.

In this context, then, it is possible to interpret Barthes' inclusion of facsimiles of his cards in *Roland Barthes by Roland Barthes* and mention of them in interview as more than a way of 'outing' his card catalogue as 'co-author of his texts' (Krapp, 2006: 363). While this interpretation is significant, these public displays on the part of Barthes can also be read as a way of actively declaring the arrival of something 'new' (invention) and seeking public recognition and legitimation of this. Revisiting Cartier-Bresson's early portrait of Barthes, then, we might read the presence of the index card boxes in a similar way: as a less overt but no less significant public declaration of the crucial future role not just of Barthes' card index but of index cards in general as a 'creativity machine', and as an historically significant pre-digital form of creative media.

Notes

[1] Further to this list is broader artistic interest in what Rosalind Krauss calls the 'logic of the index'. In an essay first published in 1977 in which she reflects on the art practice of that decade, Krauss writes: '[T]he index must be seen as something that shapes the sensibility of a large number of contemporary artists; that whether they are conscious of it or not, many of them assimilate their work (in part if not wholly) to the logic of the index' (1985: 219).

[2] This conception of the card index as 'memory crutch' can also be read the other way round. For example, the writer Cyril Connolly suggests that, 'our memories are card-indexes consulted, and then put back in disorder by authorities whom we do not control' (1973: 84).

[3] Created in 1988, at the initiative of scientists and publishing professionals, the Institut Mémoires de l'édition contemporaine (IMEC) is devoted to the collection, preservation and promotion of the work of the main publishing houses and magazines, as well as key individuals in the life of book creation: publishers, writers, artists, scholars, critics, designers, booksellers, printers, reviewers, literary agents, journalists, literary managers, and so on.

[4] Walter Benjamin develops the same understanding of the 'non-totalisable' fragment. As Paul de Man explains in relation to one passage by Benjamin, 'he is not saying that the fragments constitute a totality, he says the fragments are fragments, and that they remain essentially fragmentary. They follow each other up, metonymically, and they will never constitute a totality' (1986: 91).

[5] In one interview, Barthes lists the fragment among the 'twenty key words' most important to him (see Barthes, 1991: 205-211).

[6] This has been described as part of Barthes' 'denial of the technical distinction between "creative" and critical writing' (Moriarty, 1991: 118). Elsewhere, however, this interpretation has been questioned. For example, Mowitt argues that the work of Barthes (and other structuralists) on textuality is 'not to question facilely the distinction between criticism and creativity, but rather to alter the "subject position" constituted by critical discourse' (1992: 133-134).

[7] Commenting on the significance of Barthes' use of this technique, Alain Robbe-Grillet observes that 'the Barthesian fragment shifts (*glisse*) continuously and its meaning [and perhaps significance] is situated not in the bits of content that will appear here and there, but, on the contrary, *in the shifting (glissement) itself*' (cited in Bensmaïa, 1987: 24).

[8] Here I am referring to the work of Philip Lewis, who writes: 'The machine metaphor is apt in the case of a text, whether poetic or philosophic, because the structuralist account being sought considers the operation of the mechanism – how the textual motor runs – without regard for the operator or for the objective product of its operation' (1982: 11).

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