Revolutions in Science and Art: Martins, Bourdieu and the Case of Photography

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As far as I know, Hermínio Martins and Pierre Bourdieu never met. But Martins complains about the proliferation of capitals in subsequent writers, so he had clearly read Bourdieu's works (Martins 2013: 39). Much would have brought them together: both were heirs of classical sociology, with a penchant for describing secular processes via transgressive religious analogies, both sought to produce an adequate theory of cultural revolutions and both became deeply critical of neo-liberal marketisation of hitherto uncommodified social life. It is their theorisation of art and, to a lesser extent, science that I will discuss here. I will start by discussing a lacuna in Bourdieu's theory of photographic practice and follow this with his much stronger exploration of artistic symbolic revolutions. I will then argue that Martins avoids the weakness in Bourdieu's theory of photography because of his different view of the social role of technology. Further,

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in the field of the sciences, both he and Bourdieu have complementary critiques of the Kuhnian analysis of symbolic revolutions.

Bourdieu's sociology of cultural production originated many of the key arguments in the contemporary sociology of art. I have in mind here his reiterated critique of the essentialist view of taste, coupled with his strictures against an individualistic or divine presumption of innate genius. Thus just as Feuerbach's discovery that the concept of God originated in the human psyche was supplemented by Marx's *historical* genesis of rational criticism (O'Malley 1970: xxix), so Bourdieu traced the historical genesis of the concept of 'fine artist' and 'the aesthetic' to socio-economic transformations in the eighteenth century, where they were the counterpart to the intensifying orientation of capitalism towards 'profit for profit's sake'. The bifurcation that originated then—between purely material 'interest' and perceived 'disinterestedness' elsewhere—obscured the logic of status or *cultural capital* accumulation (Bourdieu 1983, 1966, 1993b (1971)).

This is a powerful theory of artistic practice, yet it has occasionally misfired at certain targets. One such flawed work is Bourdieu and others' *Photography* (1990 (1965)). Bourdieu concludes that because of the social relations in which photography is enmeshed, it can never become a 'consecrated' art, that is to say, part of the sacralised national heritage or cultural capital. Now, as I argue elsewhere (Fowler 2007: 205–209), photography was already becoming consecrated when he wrote and has since become a permanent feature of the restricted artistic field. To list just a few dates, in 1955, Steichen had mounted *The Family of Man* exhibition at the New York Museum of Modern Art. In France, as early as 1928, the Surrealists had heralded photography as a modernist form: it had been definitively legitimated by the 1982 Sorbonne photography colloquium (see Cartier-Bresson 2004: 107). A year later, the news photographer, Jean-Philippe Charbonnier, was given an extensive retrospective at the National Museum of Modern Art in Paris (Charbonnier obituary, *The Times*, 5.6.04).

I shall resist the implication that Bourdieu's over-schematic assessment of the history and future of photographic canonisation indicates a fatal weakness in his wider sociology of culture. Nor do I accept the claim that his whole project has amounted only to a narrow 'critical sociology',

focusing on domination and distinction (Heinich 1998a: 15, 42). I *shall* argue that Martins offers an alternative reading of photography to Bourdieu's more problematic assessment.

Situating Bourdieu: The Sociology of Photography

'Positivism, the camera and sociology grew up together' (Berger and Mohr 1982: 99). Their twin birth has led to the false assumption that the camera in the nineteenth century was always put to realist uses: a naïve objectivism derived from the earlier camera obscura which parallels the naïve naturalistic aspirations of much nineteenth-century sociology. Yet more detailed investigation shows greater possibilities for the camera than this (Crary 1992). Indeed, by the 1840s, with the discovery of retinal after-images by Goethe, the role of subjective ocular and mental processes in partially constituting the outside world was clarified. The Renaissance visual device, the mobile version of the 'camera obscura', began now to be thought of as blocking reality, since it presented an upside-down and left-to-right image: an inverted world. Thus in modernity, truth began to be associated with the new technology of the camera. This had already come to be recognised as incorporating subjective perception, or reality viewed from a particular perspective.

To situate the analysis of Bourdieu et al. (1990), a variety of earlier sociological approaches to photography should be sketched, briefly, given spatial constraints. First and classically, photography has been linked to an ethnography of modern experience, in which the camera went hand in hand with the vigilant *unveiling of the mysteries* of the city, an idea summed up graphically in the logo of the Pinkerton detectives: an eye with, underneath, 'We Never Sleep' (Frisby 2001: 66). It is well-known, for example, that a photographer such as Riis—once a police detective—used the camera for realist portrayals of the world of immigrant labour, even bursting into overcrowded New York tenement flats at dead of night to record, via flashlights, the bunked layers of sleeping or half-awake migrants.

This first, *realist*, tradition has been eclipsed by the second, Foucauldian view, interpreting photography as the apparatus of an *official gaze*, part of the wider microcosm of domination (Tagg 1988). Photography became almost exclusively understood in the 1980s and 1990s as perpetrating an alienating assault as an instrument within the field of power: hence the photographic recording of Barnardos' boys, or street children, forced into uncharacteristic postures to accentuate their unkempt, lost and degraded condition. Photographs by colonial officers of nervous native subjects followed the same pattern: the unaccustomed sitters forced to submit to the ignominy of the surveying stare.

Third, within the Frankfurt School, Benjamin's important historical essay on photography contributed a *new theory of the means of visual representation* (1979: 240–255). Benjamin acknowledges that the photographic eye might contribute to the aura of power, as indeed had court or academic artists formerly. The photos of the last third of the nineteenth century enhanced the image of the imperial bourgeoisie, for example, depicting them with an unexpected monumentality and stiff grandeur. But he also saw the invention of photography as the '*first truly revolutionary means of reproduction*' (Eiland and Jennings 2002: 224, my emphasis): the visual symbol of a democratising process that would hasten the end of 'camera obscura'-like ideology. He thus emphasised the early experimental phase of photography and also its later, ingenious use in the hands of photographers like Atget, noting especially the latter's repetition of formal patterns to defamiliarise the unknown areas of the poorest ragpickers or to record from strange angles the ornamental bannisters or other neglected decorative crafts in the construction of Parisian tenements. Moreover Benjamin emphasised that photography as a technology had the power to break with the purely cultic or sacralising nature of art: its technological character was not a barrier to its being important culturally, just as it was not to be later, for Martins. Because of its technical reproducibility and the new modes of perception it offered, photography could foster a 'liquidation' of cultural tradition that would encourage a critical gaze on bourgeois society (Phillips 1993: 16). This is arguably the most useful context in which we might situate Bourdieu. Indeed, Bourdieu's sociological study of popular photography might be read as the disenchanted riposte to Benjamin's hopes for a non-auratic mass culture in modernity.

Bourdieu's Demystifying Gaze

Although, in the twentieth century, photography was simplified and cheapened, it was still subject to social constraints (Bourdieu et al. 1990 (in French:1965)). Bourdieu stresses that photography has been democratised: it is in principle available to everyone for artistic purposes (1990: 30–31; also 2003: 38).[1] Further, the camera shows instantly how ways of seeing vary from different perspectives: this could potentially offer a shift in the general awareness of visual practices (1990: 75). Yet—viewed from his vantage point in the mid-1960s—the actual practice of photography has not resulted in such a democratised artistic activity. On the contrary, neither the haute bourgeoisie nor ordinary peasants and workers take the artistic potential of photography seriously. Strangely echoing Durkheim's view of suicide as the act of those who are peculiarly anomic and isolated, Bourdieu registers only a tiny minority—typically of urban, single men—as the most likely aficionados of photography. They alone commit themselves to camera clubs, although they tend to emulate the styles and techniques of the more consecrated medium, oil painting, in their arrangement of subjects for photographs.

To understand the more general lack of time and trouble, two explanatory principles needed to be introduced. First, Bourdieu argues that the camera is the supreme instrument of 'collective memory': in other words, photography as a popular activity is part of a mass family and community cult (1990: 19, 2003: 136). Consequently, within these groups it is unavailable for less stereotyped uses. Secondly, amongst the affluent social classes, where the availability of technically superior cameras might have permitted engaging in artistic practice, the *low status of photography* diverts energies to more canonised genres. In particular photography is perpetually overshadowed in terms of its potential for consecration because of its 'technological' character. Given time constraints, higher professionals or managers choose concerts or art galleries, at the expense of throwing themselves into autonomous photographic experimentation. Thus photography—like film—remains a strand of the unconsecrated (but in principle consecratable) art forms.[2] As we shall see, Martins never regarded technology as inimical to the development of art.

Since Bourdieu's 1990 translation, photography *has now become consecrated*. The whole process might have been delayed by its democratised availability, but as suggested above, the photograph has now entered the most hallowed museum spaces: from the New York Museum of Modern Art, where it appeared as early as 1937, to the Victoria and Albert Museum, London (which had a Cartier-Bresson exhibition in 2000), the Calouste Gulbenkian Museum, Lisbon (Kertesz exhibition 1999) and the London Tate Modern (Robert Frank, 2004–2005).[3] Obituaries or monographs of photographers habitually describe their photographic work as an artistic process.[4] Photography has belatedly entered the 'art institution' (Danto 1964, 1996: 91).

Bourdieu—a photographer himself—never publicly admitted that the fate of photography had altered and that this 'consecratable' art had indeed become consecrated. His general models of cultural stratification continue to have analytical force (1984). Why, then, the reluctance to address the more complex future for photography than he had assumed in 1965 (Bourdieu et al. 1990 (1965))? Indeed, if the assimilation of photography into the art institution has only recently become triumphant, this has, in fact, been no sudden conversion. Already, by 1923, Stieglitz and Strand were identifying 'straight' photography rather than the art photography of Robinson or Steichen as the source and direction of the main canonising channels (Shiner 2001: 251). Moreover, certain practices introduced in the 1940s by Beaumont Newhall in the Museum of Modern Art (MoMA) in New York became very rapidly standardised—the frequent selection of photographs from documentary journalism (or 'nonartistic spaces'), the hanging and display of such photographs in black 1-inch frames as individual art works and, most notably, the use of a vocabulary of 'genius' to dignify those photographer who used the full potential of the form (Shiner 2001: 252–253; Phillips 1993: 22–23). Indeed, as early as Newhall's exhibitions of 1940–1947, we can see, prefigured, the subsequent widespread museum canonisation of photography, premised on a 'formalist reading, the presupposition of creative intent, the announced preciousness of the photographic print' (Phillips 1993: 23). This was a multi-faceted social process: it could be viewed, at least in part, as a *break* with the anti-cultic reception that Benjamin had

desired, which he hoped might stimulate a radically defamiliarised vision of the world and thus foster direct social engagement.

The spectacular late twentieth-century consecration of photography needs to be examined in terms of the fate of contemporary art. The ongoing crises of avant-garde styles have provoked an enlarged space for photography. Moreover, Bourdieu failed to adequately assess *the nature of time* within his characterisation of the artistic field, a problem we do not find with Martins' conception of art. Specifically, Bourdieu's dualistic analysis of the rupture between the commercial, expanded field of cultural production and the restricted avant-garde field (1996: 146) is pitched at too high a level of abstraction; it misses later transitions from the commercial or mass field to the restricted 'artistic' subfield.

Bourdieu rightly revealed the magical social alchemy—such as the substitution of the language of 'gallerist' for that of 'art dealer'—which serves to distance the spectator of modernist art from perceiving artists' material interests (1984, 1993a). Yet he fails to see that certain popular cultural producers who have undoubted market success can make a crossover to art even within their own lifetime, such as the photographers Sebastião Salgado (Miller 1999: 287–288), Luc Delahaye and Melanie Friend,[5] or in other fields, Bob Dylan (Nobel Prize for Literature, 2016). In the case of photography, a specific force for international recognition came from membership of the co-operative established in 1947, Magnum, which, whilst acting as a commercial agency, also operated as a selection board (Miller 1999). Using a rigour equivalent to that of scientific journals, the Magnum collective provided a peer review mechanism permitting the subsequent crossover of photographers into the restricted artistic field, leading to subsequent canonisation. As we have seen, these and other processes have had the long-run consequence of raising the prices of consecrated photographs.

Now, when Bourdieu theorises in *The Rules of Art* (1996) the changed relations of the restricted and the expanded fields, it is to emphasise the dangers to art. He is right that there are inherent threats to autonomous artistic production. These range from the imposition of sponsorship, the removal of public sector support as a buffer to the market, the short-termist attention of the media and the increasingly bureaucratised management of the careers of artists (1996: 344–348).

Yet, despite his fascinating exceptional case revealing the literary consecration of the best-selling Zola, the minor route—the movement from the expanded to the restricted field—is a notable absence in his theory. This is largely because he fears a simplistic populism: the underestimation by sociologists of his wider theory showing the prerequisite of *prolonged education* for *originality* in the field of cultural production.

Digression: Bourdieu and Manet—A Case Study of Successful Symbolic Revolution

Bourdieu's theory of practice is often held to be rigidly deterministic, a poor reading of his work that he explicitly sought to contest (2000, 2015). Perhaps to counter this, the very late lectures on Manet (1999–2000) (2013)—subtitled 'Une Révolution Symbolique'—are an exemplary case study of a fundamental transformation in cultural production and cultural reception (cf Hobsbawm 2016).

Manet's (1832–1883) modernist painting made a 'revolution'. But in a Western culture dominated by the visual sense (Jay 1994; Martins 2001b: 7–11), it is a revolution in which a 'new, socially constructed eye' challenged the old 'academic eye'. This is a brilliant study of the academic fine arts, charting insightfully the Academy's highly hierarchical 'call to order' and the orthodox mode of educating, commissioning and selecting painters. Yet by the 1860s, neoclassical academic conventions governing the production of paintings had become banalised, so that artists felt increasingly estranged from them. The rupture mounted by Manet for his iconoclastic followers introduced not just a more truthful representation of the world but also a new, more insecure 'institutionalised anomie'. The bohemia of 'Intransigents' that he led became the equivalent of a 'historical laboratory', breaking with the State-backed, bureaucratic artistic orthodoxy of the Second Empire (1852–1870). It would be succeeded by other symbolic revolutions in art, not least that of another artist steeped, like Manet, in art history: Marcel Duchamp (Bourdieu 1996: 244–249).

Importantly, this late work can be distinguished from Bourdieu's earlier publications on Manet (1993a, 1996) by the rejection of a purely internalist or formalist interpretation of his painting (see Fowler 1997: Chap. 5). He now emphasises that Manet's entire body of work is that of a 'realist formalist' (2013: 40): adding that 'the imputation of realism is not exclusive of the imputation of formalism' (2013: 61). Moreover, a sociological explanation of his rupture now requires not just an internal, formal analysis of the break but also an external, materialist analysis. Consequently, Bourdieu for the first time incorporates much of the research undertaken by the more socially sensitive art historians: Meyer Schapiro, Timothy Clark, Linda Nochlin and Robert Herbert. This tradition assesses Manet's realism in light of the rapid expansion of bourgeois market-led industry in France after 1848, the new workforce of women shopworkers, clerks and performers, Haussman's urban renewal and the subsequent much greater class segregation of Paris as well as the extension of petty bourgeois and workers' leisure pursuits. Unlike these historians, however, Bourdieu emphasises also the extraordinary demographic growth of post-1848 Paris as the 'world republic' of the arts, precipitating a major change in the artistic field. It is the *numerical growth* within these professions that provokes the clash over the rigid exclusivity formerly operated by the Academy.

The formalist or internalist analysis demonstrates that Manet is, to use the painter's own term, a 'heresiarch' or, in Bourdieu's terms, a prophet, indeed the 'heretical Pole of the Impressionists', but one who died unrecognised (2013: 18, 280, 647).[6] His early path-breaking works such as *Le Déjeuner sur l'herbe* (1862–1863) contravened the academic rules that only a historical or Biblical painting should be undertaken on a large physical scale. It flouted the moral requirements banning the depiction of a young naked woman amongst clothed men. It provoked a sacrilegious indignation, even felt in the body,[7] as did *Olympia* (1863). Further, Manet refused to 'make a pyramid'—to tell a legible story—or to reproduce historical subjects according to established conventions. Thus, even in the case of *The Execution of Emperor Maximilien*[8]—with its 'aristocratic' 'distance' (2013: 727–728)—the various protagonists fail to converge coherently, whilst the brushstrokes remain visible and loose, as though unfinished. The painting possesses a strange flatness, a rejection of

sculptural elements of painting, including chiaroscuro, and a deliberate abnegation of perspective (2013: 63). In brief, Manet broke not just with minor painterly techniques but with the entire 'ethic of the aesthetic' at stake in the impersonal theatricality of academic forms. Such approved paintings by the Classicists in the tradition of Ingres and David—notably Alexandre Cabanel, Jean-Léon Gérôme and Hippolyte Flandrin—were becoming derisorily known as 'art pompier' (Pohl 1994: 233, 237). Yet, bound visually to the hegemonic class, gender and racial classification, these mid-century works still went for high prices; they encapsulated the symbolic goods of consumption for bankers, the directors of industry and the officials of the State.

Bourdieu applies his own theory of practice (1990) to Manet as a social actor. This centres neither on the painter's abstract preconceived intentions nor on underlying rules such as those isolated by Levi-Strauss or Foucault: what he calls a 'hard structuralist' approach that allows no space for agents' perspectives and subjective motives (2013: 106). Rather it advances a 'dispositional analysis' of the artist's point of view, identifying Manet's 'new eye', his practised turn of the hand, his unconscious 'feel' for the painting's manufacture. In brief, Manet, in his break with rigid academic classical rules, has a structured gaze, but he also improvises over time. Always capable of acting differently, he possesses an undeniable *margin* of liberty (2013: 121, 138, 142). Thus to fully demystify why Manet did as he did in paintings like *Déjeuner*, you have to understand his work as a product of all the social relations in art—a total social fact (Mauss), including a break, for example, with both Courbet's realism and Couture's academic rules. Bourdieu correctly observes that internalist analyses have more prestige amongst critics and art historians. But he is now persuasive in arguing that images of wider social transformations in urban life must be understood too, as these are retranslated or 'refracted' via the distinctive new rules of the artistic field (cf Adorno). Somewhat disarmingly, he goes so far as to deploy Weber as an advocate for the view that *economic forces* in the last analysis have primacy (2013: 159).

Synthesising both these approaches, Bourdieu's Manet emerges as a 'charismatic' figure who introduces a new way of exhibiting the world (cf Clark 1985). Bizarrely, contemporary critics saw him as a mere plagiarist,

totally ignoring how he telescoped the past and the present into a 'symbolic collision' (2013: 55) This vision and division of the world is in some respects profoundly subversive, as in *The Execution of Emperor Maximilien* or in the *Portrait of Henri Rochefort*, an exiled journalist for whom Manet had great sympathy. Given what is at stake, politically, it is hardly surprising that Bourdieu makes an analogy between Manet's transformative project in painting and other symbolic revolutions—notably, Calvin's subversion of the Catholic Church and the French crisis of May 1968—thus also bringing into question the nature of legitimate academic higher education: 'This strategy of collision of all the hierarchies is a strategy of a double blow, a blow at once against the Academy and against the bourgeoisie' (2013: 39). Or again, in similar terms: 'Manet made an artistic revolution that is, in addition, a political revolution' (2013: 133–134) perhaps precipitating the greatest crisis in the entire history of art.

Why did Manet become an artistic revolutionary? Bourdieu here develops the argument that he makes in *Science of Science…* (2004), on symbolic revolutions within autonomous fields. He points specifically to the productive role of a 'habitus clivé' (cleft habitus) (2004: 111–113, 2013: 84–5), commenting further on Kuhn:

> What is it about those people who whilst totally 'in' [in English] are also totally 'out' [in English]? It's they who are symbolic revolutionaries, it's someone who, completely possessed by a system, comes to take possession of it by returning the mastery he possesses against the system. It's very strange, in the advanced forms of autonomous universes it's the only form of revolution. (Bourdieu 2013: 377–378)

That Manet had such a cleft habitus is testified by his artistic rebelliousness: his resolute break with academic rules yet his submerged longing for conformity as in his desire to be shown at the Salon. His habitus clivé emerged also from the social fracture of Manet's life. The young painter undeniably gained social capital from his father's position as a judge and his mother's salon of bankers and politicians, but he was politically estranged from them; he had forged ties to the impoverished lower-class young artists of the new bohemia yet could not be entirely at ease with them either (2013: 461).[9]

In my view, Bourdieu shows here an exemplary analysis of an artistic revolution. This combines an internalist explanation in terms of the field, a materialist analysis in terms of wider socio-economic changes together with the crisis in the overstocked profession and, finally, a personal explanation at the level of Manet as an artist, possessing a very distinctive artistic habitus.

Symbolic Revolutions, Paradigms and Digital Art: Martins' Sociology of Culture

We now turn once again to the conceptual analysis of symbolic revolutions or paradigm changes, analysing Martins' important contributions to the subject. Thomas Kuhn (1966 (1962)) memorably argued that some sciences—notably, sociology—had not yet reached the position of 'normal science', since they lacked both the initial establishment of a reigning paradigm and a series of subsequent paradigm changes with hegemonic force. Indeed, this conclusion can only be strengthened by Martins' rigorous reassessment of Kuhn's theory on its home ground, natural science. I here recapitulate Martins' epistemological analysis of paradigm change before discussing its significance for theorising art and literature.

For Martins, the paradox of Kuhn's paradigm model is the tension within it between its high level of logical consistency, conceptual abstraction or mathematical complexity—and its non-rational foundations: the drives, faith, conversions or simple passive conformity of paradigm-constrained action. Kuhn argues that paradigm reliance leads to the blinkering of scientists, due to their solidaristic membership in their invisible college. Scientists are socialised into a paradigm which, being 'structurally authoritarian and culturally dogmatic', is, in Martins' words, 'a marvellous engine for the production of paradigm-bound and even paradigm-shifting researchers' (Martins 1972: 16). The paradigm in the form of normal science stimulates 'rapid or consequential advance' in an 'esoteric', 'highly technical' 'subtle' 'pursuit' (Martins, quoting Kuhn 1972: 15).

It can be agreed that Kuhn concedes too much to psychological beliefs in the irrational where he might adopt a better-founded sociological and epistemological model. Martins counters Kuhn by reasserting against him both Durkheim's regard for the *rational scientific* principles inherent in modern societies and the *realist rationalism* of Bachelard and Canguilhem. To these, Martins added a defence of the Popperian logic of conjectures and refutations whilst fundamentally stripping it of Popper's own atomistic methodological individualism. Even more tellingly today, Martins contrasts the logic of Kuhnian analysis, not least its slide into relativism, with the alternative 'epistemological meliorism' that he himself favours.[10] Thus for both Kuhn and Martins, scientific crisis is caused by the emergence of paradoxical results which do not fit the theory, hence generating uncertainty. Attempts will be made unsuccessfully to 'save the phenomena' by strategic ad hoc attempts to preserve the master scheme; but, eventually, a major epistemological and theoretical shift is required, at the end of which process a new consensus emerges. But for Martins, unlike Kuhn, the later, successful, paradigm allows the explanation of both new and old results: hence the old results are rarely simply junked, least of all the earlier research instruments. Such 'epistemological meliorism' on Martins' part also has its socio-genesis in modernity but owes much to Renouvier's and Durkheim's post-Enlightenment scientific rationalism (Stedman Jones 2001).[11]

In other words, Kuhn's Achilles heel is that in fact *paradigm-independent* principles persist (Martins 1972). Martins reveals that there are intrinsic limits to the degree of paradigm 'solipsism' or 'isolation' and therefore to its authoritarian control. Crucially, a higher-level commitment to the social order of science exists which is paradoxically conducive both to paradigm compliance and to revolutions. Less abstractly, the specialities (particle physics, etc.) with their reigning paradigms (Newtonian or Einsteinian) are englobed by a world which is constituted by other specialities and sciences that lack their sovereign paradigm.

For Kuhn: 'paradigms are psychologically exclusive [and] historically discrete […] They are also logically and epistemologically incompatible, incommensurable and non-cumulative' (Martins 1972: 16). But this produces, as it were, an *over-socialised model of scientists' responses to paradigms*. Thus, Martins censures Kuhn for having marginalised a 'systematic

cognitive sociology', which can 'befriend and assist epistemological rationalism' (1972: 18) rather than falling back on philosophical relativism.

Indeed, Kuhn neglects other mechanisms for social control, which stretch across fields to ensure the absence of frauds: peer review, anonymity, the necessity of both experimental results as well as theoretical critique and so on. We might think of these as a negative epistemology. But a positive epistemology also operates here that Martins nicely calls 'metaphysical programmes': at their most extreme 'logotopias', that is, visions of complete knowledge (1972: 21). Thus, in marked opposition to logical empiricism, he outlines the long-lasting *metabeliefs* which are conducive to epistemological rationality, such as the (Platonic) beliefs in the geometrical nature of the world or the explanatory requirement of simplicity. These operate usefully as mechanisms that serve to disrupt the 'presentist' bias of paradigm confinement.

Martins accepts that some paradigms have more visibility and weight than others: in other words, he accepts Kuhn's view that there is an element of scientific cultural stratification, such as the privilege awarded to physics. However, he also warns against 'the idol of the single linear hierarchy of scientific value' (1972: 29), suggesting that Kuhn still had a lingering, unreflexive allegiance to the orthodoxies of dominant classifications. Deploying instead Bachelard and Piaget, Martins argues—as did Bourdieu[12]—for a circle of neighbouring fields that mutually interact, permitting borrowings and reciprocal diffusion, rather than the simple, authoritarian classification of a top-down Kuhnian model.

Indeed, Martins regards Kuhn as operating with a simplistic model of revolutions, overemphasising the degree of intellectual scope of the paradigm and the degree to which *a revolution in one area inevitably spills over into destabilising another*. Not even 'permanent revolutionists', he comments, ironically, would argue that every paradigm change is equally intense and profound (1972: 35). In contrast, he emphasises elements for checking and questioning the new revolutionary paradigm: not just the well-known Popperian refutations—which may take very imaginative forms—but also those arguments which spring, more mundanely, from an epistemological preference for reliability, relevance or even importance (1972: 28). In this manner Martins seeks to elaborate a deeply supportive scientific ethos as well as an analytical separation of science and ideology:

a separation which has been subsequently neglected by excessive social constructivism (Martins 1972: 31, 35, 2001b: 23; cf Canguilhem 1988: 32).

On all these points, Martins points to a further key question in relation to *time*: this muddies the waters of the sharp catastrophist theory. From the standpoint of the players involved, it is always radically uncertain whether a new paradigm will succeed or whether rational reconstruction of the old will command allegiance. From this springs the peculiar attraction of the phenomenological or subjectivist perspective in the study of science. Moreover, Martins recalls, certain sources of heterodoxy are never eradicated whilst a specific Newtonian 'tacit unconscious' persists in certain fields. This is at odds with the 'epistemological *in*fallibilism'—as in papal infallibility—that Kuhn's paradigms display. Finally, but extremely tellingly in terms of the explanatory logic of science, Martins comments that Kuhn's is an internalist theory—yet many earlier arguments had connected scientific change also with external institutional factors.[13] I would support Martins' implication that *ultimately* an internalist and an externalist theory of change are preferable.[14]

Bourdieu has also demanded both external and internal dimensions in his historical socioanalysis of science (2004: 15, 64), arguing convincingly that it is insufficient to explain the logic of scientific development simply by noting mounting internal anomalies and the appearance of new paradigms. Indeed Martins' penetrating analysis of Kuhn has points of striking convergence with Bourdieu's very late work *Science of Science*… (2004: 14–18). Most important of all, we notice in both sociologists a stress on the 'scientific corporation' such as the French CNRS or the British Royal Society (1662), collective inventions for experimentation *which survive individual paradigm changes*. This latter seventeenth-century institution, which, like Newton's University of Cambridge professorship, was difficult to disentangle from Anglican conformity, is the main intellectual source of Martins' epistemological meliorism—instructively, it is also Bourdieu's main resource in conceptualising the scientific field as against a purely nihilist relativism (2004: 46–8, 82–4).

It is telling that Bourdieu stresses the autonomous nature of both art and science. Yet he does insist—and Martins would surely have agreed—that originality in art is not the same as that in science ('Scientists are

never the "singular geniuses" that hagiographic history makes of them: they are collective subjects [… who] in the form of incorporated collective history actualise all the relevant history of their science' (Bourdieu 2004: 70)). Of course, art possesses an intertextual character, added to by the shared experience of a group, thus creating a common artistic habitus or space of the possible. But in the scientific field, original contributions are necessarily based on a markedly more *interdependent* activity, whether via the everyday procedures of normal science (peer review, etc.) or via those accumulated experimental results that throw up a new antagonistic paradigm (see Bourdieu 2004: 69–70 for his opposition to 'radical relativism' and his stress on the 'the arbitration of the real'). This difference again suggests the perils of moving from the acceptable (Bourdieusian) language of *artistic* 'symbolic revolutions' to the full-blown Kuhnian language of *artistic* 'paradigms' (cf Heinich 1998b).

The Sociology of Photography: Theorising Technology

I now return—rather briefly—to the sociology of photography. Baudelaire excommunicated the photographer from the sacred island of art because he/she made use of mechanical technology. Bourdieu also regarded this inherently technological element as the explanation for photography's inferior status as a merely minor art. Yet, as argued above, photography has now been admitted to Art: not only have prices of consecrated photographs mounted like other forms of art (Eldridge 2015), but historical surveys and theoretical readings have been produced for curricular purposes. We still lack sociological theories of photography that might explain this change. Martins has, in my view, provided part of the groundwork for such a project. I shall approach his work in this respect in two stages—first, skeletally, as a general social theory of technology, second as a theory of digital art.

Martins' fertile and highly illuminating reflections on technology are of a broader scope than can be indicated here: indeed, they offer nothing other than a new sociological approach to instrumental reason (1993,

1996, 1998, 2001b). He explores this in terms of a dichotomy between the Promethean and the Faustian uses of technology (1993: 229, 231–232, 237–239, 241, 1998). A whole series of works aims to examine and ultimately advance a social logic for technology, drawing on inventions aimed at 'ameliorating [the human condition] and enabling human beings to cope with hostile natural forces' (1993: 229). This is a 'finite Prometheanism' (1993: 231), an approach that neither envisages technical advances as simply creating production for production's sake—the law of value governing marketisation—nor surrenders to the *anti-technological* pessimism of certain forms of reactionary modernism (Herf 1984). Yet this limited Prometheanism contrasts sharply with the new Faustian ethos: 'the dreams of radically transcending the human condition […]. To overcome the basic parameters of the human condition—its finitude, contingency, mortality, embodiment, animality, existential boundaries—appear amongst the drives and even the legitimations of contemporary technoscience, at least in some areas' (e.g. cryogenics) (Martins 1993: 229).

Martins has also developed the sociology of art by embracing technology as well as (changing) artistic conventions. Time is at the centre of this (Martins 1974): Martins discusses Leibniz 'the present pregnant with the future', illuminating precisely what this means in terms of nineteenth-century social and artistic theories (2001a: 52). For these theorists, technology creates forms, but—unlike technological Faustians—distinctively human ends are to be served by them (Martins 1998).

Martins' central axes in this discussion are the Principles of Plenitude and Artistic Plenitude (2001a). The mediaeval principle of Plenitude embraced not only the continuity of the great Chain of Being but an idea of transformative activism in relation to all possible species and their Becoming. This axiom was to undergo a significant further development into the Renaissance principle of Artistic Plenitude (plenification): this posited the great artist/artisan/engineering genius as equivalent to the divine God.

This fascination with Artistic Plenitude caught the imagination of cultural producers such as the poet, Coleridge, whose interest in the scientific revolution went hand in hand with an interest in the new technology of engraving and with the widespread diffusion of accurately drawn

images of natural objects (Martins 2001a: 53). Hence the mid-nineteenth-century rupture in French art discussed above could be understood not just as a break with the slavish representation of nature but as an opportunity for artists to examine form-giving forces in nature, beyond sensuous appearances. This shift was conditioned by two further changes: first, the dramatic alterations of the landscape following industrialisation, which provoked in German Romanticism and elsewhere a new sense of nature and second, the invention of photography (1839), which would take up the earlier artistic role of detailing mere sensuous appearances (Martins, 2001a: 64). For artists such as Cézanne now turned to an *intuited form* of nature revealed in the play of geometricised forms, a second nature.

The advent of technology and especially photography created both new constraints and also new genres (Martins 2001a: 64–65, 69). A succession of styles and ruptures now opened up: artists showed in each genre a range of possible alternatives. Art historians, such as Riegl, usefully analysed forms in high genres as well as in everyday popular genres, such as carpet design. Despite the lingering grip of the narrow aesthetic discourse of the eighteenth century, and the restrictive sphere of the fine arts, artists were in fact experimenting freely with a 'productive imagination', as the Futurists pointed out (Shiner 2001: Chap. 5; Martins 2001a: 62).

It is in this context that Martins alludes intriguingly to the recent growth of a 'Third Nature': cyberart as a distinct new period in art. The major opposition here is between the analogue arts of earlier modernity and the digital arts. The latter are manipulable, lack originals for the standard 'original' versus 'copy' contrast and only possess reality 'effects' (Martins 2001a: 65; cf Crary 1992: 1–2). Yet rather than responding to this transformation with technological pathos, Martins argues that the arts allow us to interrelate the two. Analogue and digital forms together 'may foster the resources of feeling and imagination in an over-digitalised world' (2001a: 70).

Bourdieu and Martins are at one in seeing modernist art as a distinct epoch, within which a succession of genres unfolds, bounded by institutional ruptures. But instead of seeing photography, like Bourdieu, as outside this 'restricted field', Martins sees this *as much a major art as any*

other. This importantly shifts our analysis of the whole spectrum of artistic modernisms despite the fact that certain contemporary sociologists of art—such as Heinich (1998b)—fail to discuss adequately technologically advanced later developments, as in cyberart (e.g. William Latham, Lillian Schwartz's *Mona/Leo*) or photography (e.g. Mona Hatoum). Even Bourdieu, despite his personal enjoyment of photography, was too overawed by the cultural heritage of Baudelaire's famous refusal. Hence a paradox: Bourdieu compellingly critiques Heidegger's 'conservative revolution' against modernity; the fulcrum of which is Heidegger's antimodernist stance against technology, metropolitan existence and even the empirical social sciences (Bourdieu 1988b). Yet his own sociological theories about the metamorphoses of contemporary culture have occasionally conceded too much to the continuing influence of such conservatives as Heidegger.[15] This applies especially to his modelling of the autonomous 'island of art' and the potential for photography.

Conclusion

I have noted analytical weaknesses in detailing future trends within Bourdieu's sociology of photography. Yet, in general, Bourdieu's sociology of practice continues to be of great importance. Indeed, it has been argued persuasively that it should itself be classified as a sociological symbolic revolution.[16]

Less well-known, Martins has been important in strengthening a tradition of sociology of knowledge close to that of Bourdieu and with it, the current of rationalist realism. As we have seen, like Bourdieu (2000, 2013: 48), he avoids the pitfall of epistemological relativism or 'radical scepticism'. However, Martins, also has an understanding of technology which is deeper than that of Bourdieu. In turn, this liberates a fresh view of art for sociology, suggesting innovative applications for Shklovsky's principle, the 'canonisation of the junior branch'. This helps us to understand better the new arenas of photography and especially the era of digital photography.

A final irony has emerged, serving to reinforce my analysis. Bourdieu's own photography has *now entered into the art institution*. His Algerian

photographs have been the subject of solo exhibitions, shown in the Austrian Kunsthaus in Graz, in Paris and in London's The Photographer's Gallery, whilst featured in a prominent art magazine, *Camera Austria* (Bourdieu 2003: 15; 212). Unsurprisingly, Bourdieu himself is wary of any such purely 'artistic' identification, pointing out that although these photos were partly intended to record things which were beautiful, they were partly also to intensify his awareness in his fieldwork (Bourdieu 2003: 23–24; 212–213). Like ethnography, photography transcends the familiar binaries of closeness and distance, subjectivity and objectivity. The photographer registers the sort of details on which often only the familiar, affective gaze lingers whilst retaining a certain objective detachment in registering the world before one's eyes (2003: 43).

It is telling that Bourdieu's recurrent critique of the late eighteenth-century limitations within Kantian aesthetics finally surfaces once again in this posthumous work (2003). As Lipstadt emphasises, he made sure that *these* photographs are not simply museumised and submitted to purely a formalist assessment (Lipstadt 2004). Rather they should be understood in their context: that of the Algerian war and the 'upheavals' it produced, forcing traditional peasant Algerians to recognise the collapse of peasant agriculture—'the end of a world' (2003: 205–206). In this respect, his Austrian curator notes the ominous nature of their current reception. He cites specifically the rise in popularity of the racist Freedom Party of Austia, a rise which is especially telling in the light of Bourdieu's double opposition both to neo-liberal economic policies of precarisation and their profane reaction, populism. Martins, too, mounted measured yet impassioned attacks on neo-liberal market ideologies, which he saw asthreatening, amongst other areas, crucial spaces of universities' autonomy. Whatever else might divide them, this critique of neo-liberal 'economic fatalism' is one in which the two thinkers, Bourdieu and Martins, are in complete harmony (Lock and Martins 2011; Martins 2004, 2013).

Notes

1. Since Bourdieu and his team wrote, the inclusion of a camera on mobile phones makes the practice even more commonplace, of course.

2. Chamboredon's essay in *Photography: A Middle-brow Art* briefly indicates the aesthetic recognition (canonisation) of photographers by listing Cartier-Bresson and others; it thus designates photography's potential legitimation (Bourdieu et al. 1990: 145, n38, 203). But recognition of these virtuosos is only weakly integrated with Bourdieu's major claim in the book overall as to photography's impossible consecration.
3. However, there was also institutional resistance to this change: for example, the Whitworth Art Gallery (Manchester) and the Tate (London) *refused* to exhibit photography even in the 1970s.
4. It might also be noted that there was opposition to the label of 'artist', both by individual photographers (McCullin 2002) and collectively, in Magnum's early years (Miller 1999: 10, 23–25, 102, 241, 271).
5. I am grateful to Alison Eldridge for illuminating comments on photographic consecration, which in contemporary terms is marked indelibly by rising prices. As she shows: 'The auction market for fine art photography, which has been driven mostly by contemporary photographers, saw an increase of 22% in 2013 [from 2012]. Total photography sales were up over all by 36% with the collected auction sales of Christie's, Sotheby's and Phillips coming in at $50.7 million' (Eldridge 2015: 340); 'Vintage prints' by photographers such as Ansel Adams have reached as much as $518,500 each (2015: 341).
6. Note: the quotations from Bourdieu's Manet that follow are translated by me.
7. For example, Louis Etienne referred to *Déjeuner*… as 'shameless' and 'slipshod'; Theophile Thoré, a socialist critic, was exceptional in praising it (Pohl 1994: 232). On the similarly denigratory reception of *Olympia*, see Clark (1985: 82–98; 109).
8. I would agree that the painting refuses to render heroic the death of the French puppet Emperor and that its coldness contrasts with the emotional evocation of the tragic chaos of war painted in Goya's image of a firing squad (*The Third of May 1808*). But this is surely an appropriate portrayal of such quasi-colonial struggles. Politically dangerous too: by refusing a glorifying representation and a straightforward humanist appeal to indignation, Manet's censored painting proved disastrous, both for him and his lithographer.
9. Bourdieu suggests more tentatively that Manet's temperament might also have been affected by a complex 'family romance' (to use Freud's term)—his father's paternity of a child born to Suzanne Leenhoff, Édouard's piano-teacher, later to become Édouard's wife (2013: 457).

10. In this respect, he has a very similar position to Lakatos's 'sophisticated methodological falsificationism' (1970: 110), although his stance has different epistemological origins (for Lakatos's critique of Kuhn's irrationalism, see 1970: 93, 115, 177).
11. Indeed, it is fascinating within this line of descent how much links Martins and Bourdieu: Durkheim's *The Evolution of Pedagogical Thought* is a crucial text for both (see, for, e.g. Bourdieu 1996: 344), whilst Bachelard, Canguilhem and Piaget were mutually influential.
12. I do not want to overplay their similarities: Martins was for a period (1960s) a 'revisionist' or dissident Parsonian (Martins 1974, Mennell and Sklair in this volume); Bourdieu always kept his distance from Parsons and the entire 'Capitoline Triad', Parsons, Merton and Lazarsfeld (Bourdieu 2004:18).
13. For example, Sohn-Rethel argued plausibly that the Galilean and seventeenth-century Scientific Revolution should be linked not just to the development of mathematics but also to the interrelated changes leading to the disappearance of artisanal production and to the greater circulation of commodities (1978: 118–128).
14. In this respect he differs from the Kuhnian critique mounted by Lakatos (1970), which is strictly internalist in character.
15. It needs hardly be stressed here that Bourdieu's own positions should never be projected onto his sociological exposition of the aristocracy of culture. My highly schematic view of Bourdieu's argument (1990) omits his later, more heterodox interests in forms not yet fully appropriated by the spiritual aristocracy, for example, the conceptual art of Hans Haacke and the controversial photography of Mapplethorpe (Bourdieu and Haacke 1995: 6–13).
16. Addressing the links between the transgressiveness of Manet and Bourdieu, Pascale Casanova cites Flaubert on Mme. Bovary ('Mme. Bovary, c'est moi!') imagining Bourdieu secretly reflecting: 'Manet, c'est moi!' (Bourdieu 2013: 741). Bourdieu himself argues, citing Kuhn, that his own dispositional analysis of practice represents a 'paradigm' change from the analysis of artists' intentions within orthodox aesthetics (2013: 103).

References

Benjamin, W. 1979. *One-Way Street*. London: New Left Books.

Berger, J., and J. Mohr. 1982. *Another Way of Telling*. London: Writers and Readers.

Bourdieu, P. 1966. Champ Intellectuel et Projet Créative. *Les Temps Modernes* 22: 865–906.
———. 1983. The Forms of Capital. In *Handbook of Theory and Research for the Sociology of Education*, ed. John G. Richardson. New York: Greenwood Press.
———. 1984. *Distinction*. London: Routledge.
———. 1988a. *Homo Academicus*. Cambridge: Polity.
———. 1988b. *The Political Ontology of Martin Heidegger*. Cambridge: Polity.
———. 1993a. *The Field of Cultural Production*. Cambridge: Polity.
———. 1993b. *Sociology in Question*. London: Sage.
———. 1996. *The Rules of Art*. Cambridge: Polity.
———. 2000. *Pascalian Meditations*. Cambridge: Polity.
———. 2003. *Images d'Algérie*. Graz: Actes Sud..
———. 2004. *Science of Science and Reflexivity*. Cambridge: Polity.
———. 2013. *Manet: Une Révolution Symbolique*. Paris: Raisons d'Agir, Seuil.
———. 2015. *Sociologie Générale*. Vol. 1. Paris: Raisons d'Agir, Seuil.
Bourdieu, P., L. Boltanski, R. Castel, J-C. Chamboredon, and D. Schnapper. (1965) 1990. *Photography: A Middlebrow Art*. Cambridge: Polity.
Bourdieu, P., and H. Haacke. 1995. *Free Exchange*. Cambridge: Polity.
Canguilhem, G. 1988. *Ideology and Rationality in the Life Sciences*. Cambridge, MA: MIT Press.
Cartier-Bresson, H. 2004. *The Mind's Eye*. New York: Aperture.
Clark, T.J. 1985. *The Painting of Modern Life: Paris in the Art of Manet and His Followers*. London: Thames and Hudson.
Crary, J. 1992. *Techniques of the Observer*. Cambridge, MA: MIT Press.
Danto, A. 1964. The Artworld. *Journal of Philosophy* 61: 571–584.
———. 1996. *Playing with the Edge*. Berkeley: University of California Press.
Eiland, H., and M.W. Jennings. 2002. *Walter Benjamin, Selected Writings, 3*. Cambridge, MA: The Belknap Press.
Eldridge, A. 2015. *Photography and Sociology: An Exercise in Serendipity*. Unpublished PhD thesis, University of Glasgow.
Fowler, B. 1997. *Pierre Bourdieu and Cultural Theory*. London: Sage.
———. 2007. *The Obituary as Collective Memory*. London: Routledge.
Frisby, D. 2001. *Cityscapes of Modernity*. Cambridge: Polity.
Heinich, N. 1998a. *Ce Que L'Art Fait à la Sociologie*. Paris: Minuit.
———. 1998b. *Le Triple Jeu de l'Art Contemporain*. Paris: Minuit.
Herf, J. 1984. *Reactionary Modernism*. Cambridge: Cambridge University Press.

Hobsbawm, E. 2016. Pierre Bourdieu, Critical Sociology and Social History. *New Left Review* I/101: 37–47.

Jay, M. 1994. *Downcast Eyes: The Denigration of Vision in Twentieth-Century French Thought*. Berkeley: University of California Press.

Kuhn, T. 1966 (1962). *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press.

Lakatos, I. 1970. Falsification and the Methodology of Scientific Research Programmes. In *Criticism and the Growth of Knowledge*, ed. I. Lakatos and A. Musgrave. Cambridge: Cambridge University Press.

Lipstadt, H. 2004. Pierre Bourdieu, Images d'Algérie. *Journal of the Society of Architectural Historians* 63 (1): 204–206.

Lock, G., and H.G. Martins. 2011. Quantified Control and the Mass Production of 'Psychotic Citizens', EspacesTemps.net. *Laboratoire*. Accessed January 31, 2011. http://www.espacestemps.net/articles/quantified-control-and-the-mass-production-of-ldquopsychotic-citizensrdquo/

Martins, H.G. 1972. The Kuhnian Revolution and Its Implications for Sociology. In *Imagination and Precision in the Social Sciences*, ed. Stein Rokkan et al., 13–58. London: Faber.

———. 1974. Time and Theory in Sociology. In *Approaches to Sociology*, ed. John Rex, 246–294. London: Routledge and Kegan Paul.

———. 1993. Hegel, Texas. In *Knowledge and Passion: Essays in Honour of John Rex*, ed. H.G. Martins, 226–249. London: I. B. Tauris.

———. 1996. *Technology, the Risk Society and Post-History*. Lisboa: Instituto de Ciencias Sociais e Politicas.

———. 1998. Technology, Modernity, Politics. In *The Politics of Postmodernity*, ed. J. Good and I. Velody, 150–181. Cambridge: Cambridge University Press.

———. 2001a. The Principle of Artistic Plenitude. In *The Experience of Place*, 51–71. Porto.

———. 2001b. Goodbye, Body. In *Fast Forward Body*, ed. P.C. e Silva, 34–47. Porto.

———. 2012 (2004). The Marketisation of Universities. *Metacritica: Revista de Filosofia*, 4.

———. 2013. *Firms, Markets, Technology: Biographies of a Techno-Market World* (unpublished ms.).

McCullin, D. 2002. *Unreasonable Behaviour: An Autobiography*. London: Vintage.

Miller, R. 1999. *Magnum*. London: Pimlico.

O'Malley, J. 1970. *Karl Marx: Critique of Hegel's Philosophy of Right*. Cambridge: Cambridge University Press.

Phillips, C. 1993. The Judgement Seat of Photography. In *The Contest of Meaning*, ed. Richard Bolton, 14–47. Cambridge, MA.: MIT Press.

Pohl, F. 1994. The Decline of History Painting: Germany, Italy and France. In *Nineteenth Century Art: A Critical History*, ed. S.F. Eisenman, 225–237. London: Thames and Hudson.

Shiner, L. 2001. *The Invention of Art*. Chicago: University of Chicago Press.

Sohn-Rethel, A. 1978. *Intellectual and Manual Labour*. London: Macmillan.

Stedman Jones, S. 2001. *Durkheim Reconsidered*. Cambridge: Polity.

Tagg, J. 1988. *The Burden of Representation*. London: Macmillan.