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Objectivity in Science

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The Journalist, the Scientist, and Objectivity

Peter Galison

4.1 Facts and Objectivity

Beginning in the mid-nineteenth century, a novel form of right depiction emerged in the sciences, crossing disciplines from anatomy to astronomy, and reshaping pictures of galaxies, plants, skulls, clouds, and fossils. This transformation in scientific practice developed together with an alteration in what it meant to be a scientist—a reformation of the scientific self. In *Objectivity*, Lorraine Daston and I tracked this change for the sciences through images because the compendia of scientific atlases offered a large, bounded, self-referential, and quasi-continuous body of work that reached across our range of interest both in disciplines and chronologically (from the eighteenth century through to the current day). By bracketing the question of what objectivity might mean in a myriad of other fields, we hoped to get some clarity in the domain of scientific representation. We promised ourselves we would return to see how practices of objectivity played out in other endeavors. Later, we told ourselves, we could see how the history of objectivity did—or did not—map to these other regimes. History, politics, literature, documentary film, journalism—each of these and others too have had their own objectivities. "Later" now being upon us, this is a first gesture toward relating a history of objectivity in science to that in journalism, ending with a first gesture toward a common understanding of contemporary debates about the objectivity of the digital image in science and in the world of print and post-print media.

Objectivity: a capsule summary. The core argument is this. The history of objectivity cannot be understood without a history of subjectivity any more than the concept of left can be elucidated without right, or up without down. By focusing on

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the shifting historical boundary between what is of us and what is of the world, we found that the epistemic and ethical issues were irreducibly intertwined. Managing the contours of the self and managing the contours of a world outside us are one in the same. The shoreline defines simultaneously the edge of a continent and the beginning of the sea. Objectivity, we found, was one epistemic virtue among others—sometimes pedagogical utility, precision, reproducibility, accuracy, even truth could pull against the ambition to hold oneself back and let nature write itself to the page.

Oversimplifying, to understand the history of objectivity, Daston and I found it helpful to grasp three starting points. First, an era starting in the eighteenth century and in some ways continuing to the present ("truth-to-nature") in which the objects depicted were not particulars but universals; not your or my skeleton, but the human skeleton in its perfection. The right *form of sight* here is idealization, undistracted by the particulars of a cracked rib or a caterpillar-eaten leaf. And the right kind of scientist, a genius or sage, with the capacity to see behind the curtain of appearances. Second, an era beginning in the mid-nineteenth century that supplemented but did not eliminate the first. "Mechanical Objectivity," as we called it, was characterized by a cultivated will to will-lessness—a quieting of our desires and aims, and a hunt for esthetic perfection. The mechanical site of this form of high objectivity in the sciences made a virtue of attending to particulars, and a vice of idealization—a form of sight that saw what, in the limit case, was given independently of us. Third, an era of trained judgment, in which the right kind of observer was an expert, not by inherent constitution (no genius), but instead by long and careful training that allowed the researcher to effectively re-identify patterns, eliminate artifacts of the apparatus, and categorize the world.

Concretely: by the 1850s, it was already acceptable for the Leipzig physiologist Otto Funke, the first to crystallize hemoglobin, to produce a reference volume of images, an atlas, in which he compiled drawings of what he observed through the ocular lens, even when the scientist himself *knew* some things were depicted in ways that departed from nature. A yellowing around the edges, refractions of corners that were clearly distorted, these were artifacts of the optics and sample—but Funke *nonetheless* drew what he saw not what he knew—a *moral* as well as an epistemic necessity. Funke was not alone. All across Europe and the United States, the old form of scientific atlases began taking on a new form, minimal in interpretation, long-lasting in physical production, faithful to observation rather than ultimate truth, trilingual for accessibility, and printed to last for the ages. Other scientists, too, from Berlin to Boston, began to hold themselves back, even when everything they believed spoke against such self-abnegation and for corrective "improvement."

Journalism, like science, was on the move in the 1830s. In Jacksonian America, a new kind of newspaper began to emerge, not the six-penny party newspaper, but the single penny paper, drawing on a mass distribution, affiliated with no political party, promiscuous in its advertisements. This was a paper that profited not from group

allegiance, but precisely from the expanded audience brought by *non*-alignment.[1] Some years later, during the American Civil War, reporters began standardizing a form of writing that reinforced this non-affiliation in the form of the now canonical inverted pyramid: begin with the who-what-when-where and the widest construal of events, and then, gradually, paragraph by paragraph, bring the focus on ever greater detail. Finally, during the 1890s, "news" and "opinion" came to occupy separate sections of the paper with differing writing styles. For one historian of journalism, "[t]he 1890s is a good place to end a history of 'objectivity' because it is one of the first decades when 'objectivity' was a recognized ethic in journalism, but also one of the last in which 'objectivity' goes basically unquestioned."[2]

In journalism as in science, objectivity was a conjointly moral and epistemic task. Historian Michael Schudson put it this way: "the belief in objectivity in journalism, as in other professions, is not just a claim about what kind of knowledge is reliable. It is also a moral philosophy, a declaration of what kind of thinking one should engage in, in making moral decisions."[3] Also emphasizing the ethical dimension, Stephen J. A. Ward invites us to empathize with those reporters who clung to aspects of objectivity in the few decades after the first World War: "Buffeted by controversy and powerful crosscurrents in society, these journalists looked for a way forward for their profession. They invented objectivity as an ethical signpost in troubled times."[4] Agreed. Though journalistic arguments over objectivity engage more directly with the politics of the moment, and the scientific disputes more with the production of knowledge, the two histories of objectivity (scientific and journalistic) cross at many points. Now that we have a start in understanding both, it is worth stepping back to make the comparison (and contrast) explicit.

Begin with facts. Facts were the shared fragments of these decades from 1830 to 1890. Facts were the residue left over after separation from party, loyalty, payment, value, interpretation, and emotion. Fact-based news was mobile, saleable, communicable. *Facts* became the journalists' common coin—not as a procedure but as modules of information.[5] The insistent nineteenth-century hunt for "Who, What, When, Where" became the byword, posted in newsrooms; these bits were where the news story began. For some time now, historians have fought over how to explain the turn to facticity—sometimes demeaning the attention of those years as "naïve empiricism": they have attributed the result to new printing technologies, to the expansion of literacy, to newly dominant political ideologies, to the "natural evolutionary history" of reporting that any society must pass through. But these accounts, however we assess them, all speak to the rise of the fact—rather than an objectivity constituted by a will-to-will-lessness. That came later.

[1] Schudson (1978). Dan Schiller modifies the Schudson account by emphasizing that the democratic, middle-class audience exists more as an ideal than a reality Schiller (1981).

[2] Mindich (1998, 114).

[3] Schudson (1978, 8).

[4] Ward (2004, 257). Ward offers a passionate and persuasive argument for a new "pragmatic objectivity" to come after the limits of "traditional objectivity" have become all too clear.

[5] On the history of the scientific fact, see for example Daston (1991) and Poovey (1998).

4.2 Journalistic Objectivity

Walter Lippmann was one of the first journalists to re-think the factual, not simply in antitheses (fact/opinion, fact/interest), but in a larger, more conceptual frame. He was interested in what made understanding possible; in this sense a shift to a more Kantian problematic (he had studied philosophy at Harvard with William James and George Santayana). The war too created a new set of conditions under which knowledge of events had to be understood—the United States under President Wilson had, like France and Germany, instituted dramatic wartime censorship structures. While not denying that censorship was necessary, Lippmann balked at its rampant use.

Lippmann's framed his notion of journalistic objectivity in the years following World War I as a condition of visibility. Certain conditions about the world must obtain for something even to be a candidate for the news:

> [T]he news is not a mirror of social conditions, but the report of an aspect that has obtruded itself. The news does not tell you how the seed is germinating in the ground, but it may tell you when the first sprout breaks through the surface. It may even tell you what somebody says is happening to the seed under ground. It may tell you that the sprout did not come up at the time it was expected. The more points, then, at which any happening can be fixed, **objectified,** measured, named, the more points there are at which news can occur.[6]

The question then arises: what are the conditions under which "happenings" can be fixed, objectified and measured? What makes these so? Some events present themselves, more or less evidently, as "obtrusive." So Lippmann argued. A report on a county Clerk's desk shows that John Smith is bankrupt. But take even a step or two beyond the filing and you are in a murkier world: "The story of why John Smith failed, his human frailties, the analysis of the economic conditions on which he was shipwrecked, all of this can be told in a hundred different ways. There is no discipline in applied psychology, as there is a discipline in medicine, engineering, or even law, which has authority to direct the journalist's mind when he passes from the news to the vague realm of truth. There are no canons to direct his own mind, and no canons that coerce the reader's judgment or the publisher's." One journalist's "version of the truth" is but one such take, and journalism, like fiction writing, can never lay claim to a universal, omniscient vision. Sinclair Lewis, Lippmann writes, can never show that he has the full and definitive truth of Main Street.[7] So it is for journalists. Newspaper writers aware of their own "weaknesses" know all too well that that they stand somewhere, enframed by interests and accepted ways of seeing. Lippmann: "there is no **objective** test, [the newspaper writer's] own opinion is in some vital measure constructed out of his own stereotypes, according to his own code, and by the urgency of his own interest. He knows that he is seeing the world

[6]Lippmann (1922, 341), emphasis added. On Lippmann's invocation of a "scientific naturalism" and a wide search of the literature showing the paucity of references to journalistic objectivity before Lippmann see e.g. Richard Streckfuss (1990).

[7]Lippmann (1922, 360).

through **subjective** lenses. He cannot deny that he too is, as Shelley remarked, a dome of many-colored glass which stains the white radiance of eternity."[8]

This dependence of events on the writer meant that, for Lippmann, there was a sociality to the ontology of news—what counts as an event must be of a certain kind. Otherwise, it ends up utterly dependent on the situation not just of the writer, but of the writer's surround: "Unless the event is capable of being named, measured, given shape, made specific, it either fails to take on the character of news, or it is subject to the accidents and prejudices of observation." So news truly is a form of *collective* empiricism, an empiricism that relies, fundamentally on the nature of that collectivity's institutions.

> The quality of the news about modern society is an index of its social organization. The better the institutions, the more all interests concerned are formally represented, the more issues are disentangled, the more **objective criteria** are introduced, the more perfectly an affair can be presented as news. At its best the press is a servant and guardian of institutions; at its worst it is a means by which a few exploit social disorganization to their own ends. In the degree to which institutions fail to function, the unscrupulous journalist can fish in troubled waters, and the conscientious one must gamble with uncertainties.[9]

News, Lippmann implies, cannot make a society democratic; in some sense news must grow up with democratic institutions. True, the press could stand as a corrective to governmental abuse and inform the citizens. But without the institutional structures that cast a "searchlight" on certain events, events themselves lose any rigidity of structure. Rendered malleable, the whole of our reality shifts and distends in the hands of unconstrained and often unscrupulous journalists.

"The study of error," Lippmann insisted, "is not only in the highest degree prophylactic, but it serves as a stimulating introduction to the study of truth. As our minds become more deeply aware of their own **subjectivism**, we find a zest in objective method that is not otherwise there." Here is the kind of writing about journalism that makes it into a form of epistemology—a study of journalistic error that forms just the kind of probe that the epistemologist of science Alexandre Koyré found tracking errors in the study of science. Lippmann: "We see vividly, as normally we should not, the enormous mischief and casual cruelty of our prejudices. And the destruction of a prejudice, though painful at first, because of its connection with our self-respect, gives an immense relief and a fine pride when it is successfully done."[10] Removal of prejudice is a kind of cultivation of self, a re-making of who we are that alters our perception and therefore our assessment of our world:

> There is a radical enlargement of the range of attention. As the current categories dissolve, a hard, simple version of the world breaks up. The scene turns vivid and full. There follows an emotional incentive to hearty appreciation of scientific method, which otherwise it is not easy to arouse, and is impossible to sustain. Prejudices are so much easier and more interesting. For if you teach the principles of science as if they had always been accepted,

[8]Lippmann (1922, 360), emphasis added.

[9]Lippmann (1922, 363), emphasis added.

[10]Lippmann (1922, 409–410), emphasis added.

> their chief virtue as a discipline, which is **objectivity,** will make them dull. But teach them at first as victories over the superstitions of the mind, and the exhilaration of the chase and of the conquest may carry the pupil over that hard transition from his own self-bound experience to the phase where his curiosity has matured, and his reason has acquired passion.[11]

Here is the kind of cultivation of self, the extirpation of subjectivity that the German physiologist Rudolf Virchow was after in his 1877 address to the Versammlung Deutscher Naturforscher und Ärzte,

> I have been teaching my science for more than thirty years, and . . . in these thirty years I have honestly worked on myself, to do away with ever more of my subjective being and to steer myself ever more into objective waters. Nonetheless, I must openly confess that it has not been possible for me to desubjectivize myself entirely. With each year, I recognize yet again that in those places where I thought myself wholly objective I have still held onto a large element of subjective views.[12]

For Virchow the moral-epistemic battle was pitched against the subversive subjectivities of the scientific self—"my opinions, my representations, my theory, my speculation."[13] It demanded patience and more: a cultivation of the scientific self through skill and art (*Geschick und Kunst*)—it was just this working on the scientific self that was so central for us in *Objectivity*. For Lippmann in 1922, the analogous self-struggle aimed to rein in the "prejudices," "codes," "superstitions," and "self-bound experience" that over-simplified the world. In both cases—Lippmann's journalistic objectivity and Virchow's scientific objectivity—the aim was to create a self open, *attentive* to the world, one that was, indeed, more like science. The difference was that Virchow's struggle was alone; Lippmann's demanded a self-analysis that was always already social. But individual or collective, the self-cultivation was a precondition for both science and journalism, and scientific objectivity hovered nearby as a model for journalistic self-conditioning.

Leading historians of journalism disagree about when to date the beginning of objectivity as an ideal, some identify the concept with the fact-hunting of 1830–1870, others with the more explicitly nonpartisan papers of the 1880s and 1890s. But the strongest arguments locate the objective in the 1920s and 1930s—when the term "objectivity" enters explicitly.[14] Intriguingly, this occurs around the time when (so we have argued) mechanical objectivity comes under pressure—and interpretation,

[11] Lippmann (1922, 410), emphasis added.

[12] Virchow (1877, 74).

[13] Virchow (1877, 74).

[14] Schudson (1978, 120): [By the 1920s,] "People came to see even the findings of facts as interested, even memory and dreams as selective, even rationality itself a front for interest or will or prejudice. This influenced journalism in the 1920s and 1930s and gave rise to the ideal of objectivity as we know it." Or again, p. 122, only after World War I, "when the worth of the democratic market society was itself radically questioned and its internal logic laid bare, did leaders in journalism and other fields, like the social sciences, fully experience the doubting and skepticism democracy and the market encouraged. Only then did the ideal of objectivity as consensually validated statements about the world, predicated on a radical separation of facts and values, arise."

indeed *subjective* interpretation comes to be seen as a necessary part of scientific inquiry. And here the historical epistemology of the two domains, journalism and science, begins to cross. Because in both, objectivity remains both an ideal and a target: we want objectivity, we despise it.

On 27 May 1939, the press baron, editor of TIME, Henry Luce, came to the Buckwood Inn, in Shawnee-on-the-Delaware, to address his salesmen—with a blast against objective journalism. TIME, he argued, is certainly not simply "impartial"; it never was and never will be. The magazine "is attacked with equal or slightly varying bitterness for being pro and con the same thing. What is most of all amazing about this reputation is that never, at least with my knowledge and consent, did TIME ever claim impartiality. TIME's charter is that TIME will tell—will tell the truth about what happened, the truth as it sees it. Impartiality is often an impediment to truth. TIME will not allow the stuffed dummy of impartiality to stand in the way of telling the truth as it sees it."[15]

One might think that impartiality was only a particular facet of objectivity, that objectivity itself would be safe from attack by one of the most establishment, conservative American magazines—at the height of the Cold War. But, if anything, the Cold War redoubled Luce's cynicism about the concept. On 27 March 1950, TIME excoriated *The New York Times* for its blind adherence to objective reporting when *a*symmetry was in order. *The Times* had published an article about forced labor camps in the Soviet Union and then one the next day on the abuse of "wetbacks" in American camps. Here is TIME:

> Last week, the New Leader's William E. Bohn read The New York Times a forceful lesson in the dangers of ***mechanical objectivity*** . . . [the Times'] two headlines equate the system of contract labor in the U.S., which sends a few hundreds of thousands of workers across the country under admittedly evil conditions, with the Soviet system of concentration camp slavery which means deaths to millions . . . . [Mexicans] swam the Rio Grande . . . But there is no record of anyone crossing any body of water to reach a Russian concentration camp. To pretend that the two evils are at all comparable is to perpetrate an enormous and dangerous falsehood . . .[16]

In 1952, Luce let the TIME editors know in no uncertain terms how limiting objectivity was: "We are for objectivity because there is objective truth, truth in the universal, scientific truth, moral truth, which is quite independent of what anyone of us or all of think at any given time. Majorities do not make truth. Intellectual fashions do not make truth. Individual prophets come nearer to it—Amos or John the Baptist or Walt Whitman." Luce went on to distinguish two meanings of journalistic objectivity. One was tonal: flat, voided of emotion. That aspect of objectivity was optional. But cross the line to another, to the search for a journalism that had no presuppositions involving value or interpretation, and there one courted nonsense.

Not extension of naïve empiricism, but reaction against skepticism, "a method designed for a world in which even facts could not be trusted."

[15]Luce (1969, 56–57).

[16]TIME 55, no. 13 (1950), p. 30, emphasis added.

Such antiseptic journalism was, for Luce, impossible. "*That* is a modern usage and that is strictly a phony. That I had to renounce—and denounce. When we say 'the hell with objectivity,' this is what we are talking about. It is both theoretically and practically impossible to select, recognize or organize facts without using value judgments."[17]

Luce's anti-objectivity hit politics precisely when Cold War reporting symmetrized what for him was anything but a symmetric situation. Balance—on Luce's view—was nothing but apologia. In a 1959 editorial, "Objectivity Rampant," TIME blew a gasket at the way that the media wrote about Russian "tourist" [Anastas Ivanovich] Mikoyan, Krushchev's primary emissary, as he made his way around the United States. First, TIME insisted, the accounts of *The New York Times* and *Minneapolis Tribune* were simply "unbalanced," having "leaned over backward to preserve the 'objectivity' in which the U.S. press takes inordinate pride. Most stories ran as straightforward accounts of the rubberneck tour, without qualifications, without reservations, without showing cautious awareness of the other Mikoyan, the calculating Russian emissary, who followed Tourist Mikoyan everywhere he went." That said, when too *un*-balanced (like the *Daily News*) the reporting was so negative as to create sympathy for Mikoyan. Overall, though "The US press did not buy Salesman Mikoyan's wares, but in the name of objectivity it made them look pretty good." Nor surprisingly, the Russians themselves had a fine gloss—one that illustrated just how dangerous "parallels" could be: the Russian Moscow Literary Gazette "dredged U.S. history for a parallel to Mikoyan's visit, recalled how good-will Ambassador Ben Franklin soothed monarchist France's prejudices and suspicions, successfully sold himself and the infant U.S. republic."[18]

But attacks on objectivity from the Cold War right were soon drowned by ripostes from the left. Over the course of the 1960s, no end of blasts was aimed at objectivity—advocacy journalism, "new journalism," – and not least the "gonzo journalism" of Hunter S. Thompson. Many at *The New York Times* were offended by these inroads into the hard-won ethos of objectivity. In October 1972, Lester Markel, the retired editor of *The New York Times*, lamented that "the effort for objectivity has been made tougher by the advent of two loudly-trumpeted techniques: 'advocacy' and 'new' journalism." Of course reporters were human, of course their prejudices should be made clear. But the application of "techniques of fiction" to nonfiction carried grave dangers. Composite characters, for example, offered a slippery slope away from reality, and he recognized that "it is often possible for facts to get in the way of real truth." Still, the *Times* editor judged that the solution to problems

[17]Nov 14, 1952, Henry Luce to TIME editors, in Luce (1969, 70–71); or just a bit later, 4 May 1953: "The Fetish of Objectivity," TIME 61, no. 18, p. 51. TIME quotes the Denver Post: "The reporter was told his first paragraph . . . should tell the 'who, what, when, where and why'—and no more . . . . The pure factual objectivity has often been a will-l'-the-wisp . . . Newspapers should continue to strive for as much objectivity as possible, but should have no taboos against 'interpretation' when [it] is necessary to an understanding of any happening . . . The trend will be toward more 'interpretation . . . '."

[18]TIME 73, no. 4 (1959), p. 58.

associated with classical objectivity lay not in the directions of new techniques, but rather in the extension and refinement of "old journalism."[19]

Historians on the left decried the way that turn-of-the-century "objective" reporting on lynchings had carefully followed the who/what/when/where line and simply narrated the killing of African-American men, women and children as they were murdered. The articles even offered "reasons" for the killing—both sides, balance, and for the critics of the 1960s and 1970s, an ethical violation of the first order. Vietnam brought these issues into an embattled present, no place more vividly than in the way the Gulf of Tonkin Incident—the putative casus belli of the war—was reported. Reporters just repeated the government version—the North Vietnamese had, unprovoked, fired on an American ship. When, later, long after even high government officials admitted the evidence of any shots at the ships was probably an illusion, the reporter who broke the story was asked about it. He replied that if the President says black is white, you write, "the president says that black is white." Historian Daniel C. Hallin concluded that here, as in so many other instances during the divisive Vietnam War, "The effect of 'objectivity' was not to free the news of political influence but to open wide the channel through which official influence flowed."[20]

If we want to make commensurable the histories of journalistic and scientific objectivity, we also need to know the guiding rules—how objectivity-as-practice is taught and regulated morally. In this respect, it is worth attending to the long string of "Codes of Ethics" adopted by the Society of Professional Journalists—going back decades and (after 1973) revised every 10 or 15 years: 1926, 1973, 1984, 1987, 1996.[21]

As late as 1987, the preamble to the Code of Ethics put objectivity front and center. Here is the preamble, underscoring objectivity:

> SOCIETY of Professional Journalists, believes the duty of journalists is to serve the truth.
>
> We BELIEVE the agencies of mass communication are carriers of public discussion and information, acting on their Constitutional mandate and freedom to learn and report the facts.

[19] Markel (1972). On the writing genre of "new journalism" (focusing on Tom Wolfe), see Hanson (1997). Hanson follows Tom Wolfe in seeing "new journalism" as an alternative or even successor to "objective" ("old journalism"), and then goes on to characterize the formal aspects of this new narrative style.

[20] Calcutt and Hammond (2011, 102); Hallin (1989, 25 and 70–71). Gaye Tuchman's 1972 article "Objectivity as Strategic Ritual: An Examination of Newsmen's Notions of Objectivity" attacked the idea of objectivity differently: by arguing that "'objectivity' may be seen as a strategic ritual protecting newspapermen from the risks of their trade." Here ritual is defined "as a routine procedure which has relatively little or only tangential relevance to the end sought." It is "compulsive" and "strategic." Tuchman (1972, 660, 661).

[21] "The present version of the code was adopted by the 1996 SPJ National Convention, after months of study and debate among the Society's members. Sigma Delta Chi's first Code of Ethics was borrowed from the American Society of Newspaper Editors in 1926. In 1973, Sigma Delta Chi wrote its own code, which was revised in 1984, 1987 and 1996." From "Why Doesn't the SPJ Enforce its Code of Ethics." Accessed July 4, 2012. http://www.spj.org/ethicsfaq.asp

> We BELIEVE in public enlightenment as the forerunner of justice, and in our Constitutional role to seek the truth as part of the public's right to know the truth.
>
> We BELIEVE those responsibilities carry obligations that require journalists to perform with intelligence, **objectivity**, accuracy, and fairness.[22]

The Code then goes on to devote the entirety of section IV to "ACCURACY AND OBJECTIVITY," under which falls:

> Good faith with the public is the foundation of all worthy journalism.
>
> 1. Truth is our ultimate goal.
> 2. **Objectivity** in reporting the news is another goal that serves as the mark of an experienced professional. It is a standard of performance toward which we strive. We honor those who achieve it.[23]

Interestingly, though truth is the "ultimate goal," objectivity is clearly distinct from it ("another goal") that marks, as a practice, the standard of performance. While truth may be the unattainable asymptote toward which the journalist strives, there are those who "achieve" objectivity. Truth is a thing—a platonic one perhaps, but objectivity is a process that can be followed and even reached, honorably, in this, our sublunary world.

By 1996, the Society of Professional Journalists had reconsidered their position, and the revised code of that year eliminated objectivity in every instance. Do no harm, said the Code, act independently, be accountable, treat subjects as human beings—all this and more. But objectivity had vanished from sight.[24]

But not for long. In 1997, Sandra S. Nelson, a journalist on the education beat, and, in her non-working life, a political activist, came head to head with her employer, McClatchy Newspapers, Inc. The *News Tribune*, in Washington State, was not happy with her citizen role, organizing rallies, picketing, lobbying for a ballot initiative, among other things, and transferred her to copy-editing. She brought suit, to which the paper rejoined, "Nelson's activities violated the [newspaper's] ethics code and raised concern about TNT's appearance of objectivity." Or in another formulation, this one to the United States Supreme Court, the McClatchy Company insisted, "The editorial standards at issue in this case are fundamental to the First Amendment's guarantee of a free press. Objectivity lies at the heart of *The News Tribune*'*s* presentation of the news, and *The News Tribune*'*s* requirement that reporters refrain from political activism directly supports the newspaper's actual and perceived objectivity." In the end, The U.S. Supreme Court let the Washington ruling stand: the right to a free press, said the court, included the right to impose a kind of political abstinence on its reporters—and this trumped the reporters' rights

[22] http://ethics.iit.edu/ecodes/node/4340, emphasis added.

[23] http://ethics.iit.edu/ecodes/node/4340, emphasis added.

[24] http://www.spj.org/ethicscode.asp

of free expression.[25] Other states, commentators worried, could well follow the state of Washington's move toward legally binding objectivity.

News of the death of journalistic objectivity is, it seems, premature. What is clear from this history is that journalistic objectivity, like that of scientific objectivity, demands, above all, a conditioning of the self toward different modes of self-restraint—from avoiding the imposition of a pet theory to stripping an election sticker off your car. As of January 2012, *The New York Times* let its reporters know that it continues to demand a curtailing of citizen life to maintain the life of reporter. Reporters should not have too much friendship with news sources, spend too much time with them, become romantically involved, should not pay their sources or receive gifts from them, or cooperate in ventures. "The people of our company are family members and responsible citizens as well as journalists. Nothing in this policy is intended to abridge their right to live private lives—to educate their children, to worship and take part in community affairs. But like other dedicated professionals, we knowingly accept disciplines—in our case, with the goal of ethical and impartial journalism." No sporting of political buttons on the job, says the *Times*. Indeed, no political insignia of any kind. Nor did the long arm of objectivity halt at the edge of work: Staff members may not give money to candidates. They may not seek public office. They may not march or rally. At the limit, a certain degree of local involvement might be acceptable, but not wider. Reporters may not report about spouses or close relatives—and the list goes on.[26]

Former CNN assignment editor David T. Z. Mindich has argued that "objectivity" should be replaced by more specific characteristics: detachment, nonpartisanship, inverted pyramid writing, reverence for facts, and balance.[27] I am inclined to agree that a more analytic assessment of objectivity is indeed required, but would classify the characteristics differently. Reverence for facts, for example, was a preoccupation for journalists in the nineteenth century, long before objectivity came into the picture—the focus on facts was associated, as others like Schudson have argued, with the penny press, grounded in an economic model premised on a separation from a particular party or group in its origin or in its destination

[25] See Calvert (1998–1999, 23 and 31–32). Content downloaded/printed from HeinOnline (http://heinonline.org), January 17, 2012, 18:33:30 201232.

[26] The New York Times Company, "B1. Participation in Public Life," in Policy on Ethics in Journalism. http://www.nytco.com/press/ethics.html#keeping. In 2010, *Daedalus* published a full issue on journalistic ethics—and though it raised the deep challenges to objectivity in the digital, online age, it concluded that the benefits of objectivity outweighed its costs. Jane B. Singer: "In a networked environment, interaction with audience members has become integral to the journalistic process. Consider again that notion of objectivity. One of the most hotly debated issues in the industry today is whether objectivity remains valuable (or even plausible) or whether it is being superseded by an ethical zeitgeist better suited to the rise of a relativistic medium. An emerging consensus seems to suggest that journalistic credibility in an unfettered information environment remains crucial and rests to a significant extent on independence from partisan or factional interests." Singer (2010, 95).

[27] Mindich (1978).

audience. The inverted pyramid writing structure seems even more particular—useful as it may be, it is one among many forms of exposition. Detachment and balance, different as they are, seem more appositely associated with objectivity in journalism.

What we have in the history of objectivity is a continuing, forever unfinished construction of professional selves—through practices of self-abnegation. What is it to be a scientist? What is it to be a journalist? Perhaps thinking of the period self as passing through layers, finding specific forms of sight alongside a shifting status of the image (or news or history) offers us a productive way to think the skilled self more generally.

Three intermediate conclusions: (1) the nineteenth-century journalistic engagement with impartiality, independence, and balance was not of a piece with the nineteenth-century scientific orientation toward objectivity as a form of consummate self-restraint, a "will to will-lessness." (2) After World War I, the key epistemic conditions of journalism moved beyond an all-out effort to find impartiality, independence, and explicitly embraced a more procedural-ethical ideal that was closer, explicitly closer, to the sciences. But this occurred at just the moment when objectivity in science itself was coming under revision by scientists. (3) The science-inflected objectivity was contested in journalism, from the moment it was introduced and that contestation has never ceased.

4.3 The Manipulated Image

Journalists have never stopped contesting objectivity in journalism—in every generation since 1920, you can find writers lamenting and celebrating the imminent death of the objective. Gonzo journalism, historical fiction, infotainment, talk radio, blogs; each new format has re-ignited the debate. But however complex the borrowing, overlapping, and renunciation of scientific objectivity, there is one domain where the scientific and journalistic have developed not just in parallel, but almost as a single entity: in the ethics and epistemology of digital manipulation.

Of course the manipulation of photographic images goes back as far as the photograph. Burning, dodging, and cropping brought objects in and out of visibility. So could adding or reducing contrast, modifying exposure time, positioning the camera, air-brushing elements, or staging the scene. Conventions about the "unretouched" photograph came late to photojournalism—*Life* magazine only began grappling with these issues in the 1930s.[28] But one change, more than any other, has brought

[28] See for example Hicks (1952, 42): "During its experimental period [1934–1936] *Life* enunciated for itself and adopted as part of its working philosophy the principle that the photograph should not be retouched except in the rarest circumstances. The day of the intervention of drawing between camera reporter and reader was over, yet most newspapers and some other magazines, primarily for mechanical but also for 'artistic' reasons, had carried retouching to a point where, in many instances, the printed picture was a combination of a photograph and hand 'art' work."

modification to the masses: Photoshop. That one program had a greater effect on scientific, journalistic, and advertising images than just about any innovation in cameras, film, or printing in the last 50 years. Created by John Kroll, a University of Michigan graduate student in 1987, the first Photoshop came out in 1990, and within a few years was being used across the world in millions of authorized and, by most guesses, an equal number of pirated copies.[29]

What is striking is that the very same techniques that are used to improve models' bodies have been deployed to tidy up scientific data and rearrange photojournalists' productions. In the wave of anxiety that has crashed over newspapers, magazines, and scientific journals, a new specialization has emerged: digital forensics. One of the most prominent of the new breed of investigators is Hany Farid, who is very clear that the modification of images goes back a very long way, at least as far as Mathew Brady's civil war images. What is different is the ease of such endeavors: "In today's world, anyone with a digital camera, a PC, Photoshop and hour's worth of time can make fairly compelling digital forgeries." According to Farid, the rise in fraud allegations about images has skyrocketed. In 1990, the Federal Office of Research Integrity reported that less than 3 % of scientific fraud charges were leveled against images. A little more than a decade later, that number was 26 % and by 2007, it was over 44 %.[30]

So similar are the issues faced, that Farid and his colleagues constantly track back and forth among the triad of science, fashion, and news. On the science side, the problem is so endemic that just about every major scientific publication has issued ethical guidelines for the use of digital images. Mike Rossner, managing editor of the *Journal of Cell Biology*, and his co-author and editor Kenneth M. Yamada, put it this way in the lead article "What's in a Picture? The Temptation of Image Manipulation" from 2004:

> It's all so easy with Photoshop. In the days before imaging software became so widely available, making adjustments to image data in the darkroom required considerable effort and/or expertise. It is now very simple, and thus tempting, to adjust or modify digital image files. Many such manipulations, however, constitute inappropriate changes to your original data, and making such changes can be classified as scientific misconduct. Skilled editorial staff can spot such manipulations using features in the imaging software, so manipulation is also a risky proposition (Fig. 4.1).[31]

In short: it is wrong and we will catch you.

In the 1980s, I was on a National Academy of Sciences committee looking into fraud, fabrication, and plagiarism in science. Image manipulation was a very minor

[29] See, for example, the following histories of Photoshop: http://creativeoverflow.net/history-of-photoshop-journey-from-photoshop-1-0-to-photoshop-cs5/ and http://en.wikipedia.org/wiki/Adobe_Photoshop_version_history. Accessed June 10, 2012.

[30] Dreifus (2007).

[31] Rossner and Yamada (2004). Published July 6, 2004. Accessed June 10, 2012. http://jcb.rupress.org/content/166/1/11.full

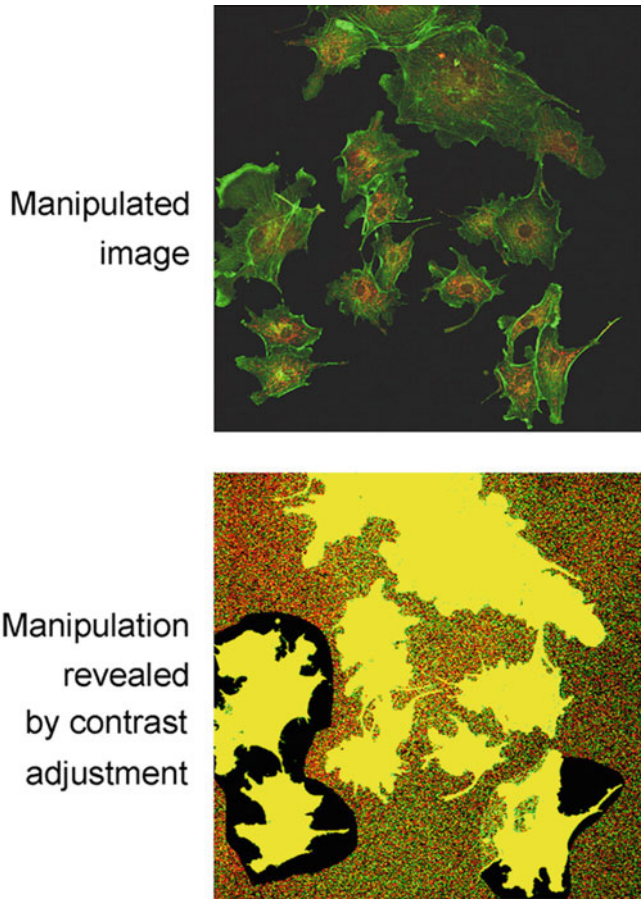

Fig. 4.1 Editors Rossner and Yamada gave an example of image manipulation in this instance: The *top* (manipulated image) appears to be a single microscopic view, while the *bottom* (exposed by a high contrast adjustment) reveals that a variety of cell images have been combined to present the illusion of a single image (Reproduced from Rossner and Yamada 2004)

consideration, and digital manipulation not even a ghost of a threat. Now *Science* has very explicit strictures about what constitutes allowable and forbidden changes to the image:

> *Science* does not allow certain electronic enhancements or manipulations of micrographs, gels, or other digital images. Figures assembled from multiple photographs or images, or non-concurrent portions of the same image, must indicate the separate parts with lines between them. Linear adjustment of contrast, brightness, or color must be applied to an entire image or plate equally.Nonlinear adjustments must be specified in the figure legend.

> Selective enhancement or alteration of one part of an image is not acceptable. In addition, *Science* may ask authors of papers returned for revision to provide additional documentation of their primary data.[32]

Here is the digital residue of objectivity: Otto Funke may have been tempted to remove the yellow chromatic distortion at the side of his microscopic lens, he may have wanted more than anything to fix the strange appearance of crystal edges refracted out of their physical positions. But his ambition was to draw what he saw, not what he knew. The equivalent here is the demand by *Science* that its authors refrain from assembling images from a variety of images, make manifest the breaks in parts of the image put up against one another, and apply shifts in picture quality to the whole, not selective parts of the image. Here and in other strictures was digital objectivity.

By the early 2000s, destabilizing image distortion in the sciences was arriving, and even being published at a clip that worried the editors of journals all the way up to the National Academy of Sciences. The *Journal of Cell Biology* reported systematically on the kinds of distortion they wanted to block: Electrophoresis gels entered into print with selectively "cleaned up" bands using the clone stamp. Cells were rearranged on a microscopic image by cut and paste. Immunogold data were enhanced in images and other dots excised to tidy up the image.

According to one group of editors, what drove this worrisome, expanding use of selective manipulation came down to a desire by authors to "beautify" their data. Here is *Nature Cell Biology*:

> By far and away the most prominent problem is that scientists do not take the time to understand complex data-acquisition tools and occasionally seem to be duped by the ease of use of image-processing programmes to manipulate data in a manner that amounts to misrepresentation. The intention is usually not to deceive but to make the story more striking by presenting clear-cut, selected or simplified data—an approach we have dubbed 'data beautification'. The *Journal of Cell Biology* has looked at the problem systematically and estimates that up to 20 % of accepted papers contain some questionable data, a rate that has not decreased since the journal instituted an editorial data-screening process.[33]

A generation ago, one of the main issues faced by journals was the too-easy use of statistical packages, with researchers running through a variety of statistical tests (one tailed, two-tailed, etc.) until they found one that gave them the best p-values. In response, the best funded of the journals (including the *New England Journal of Medicine*) armed themselves with sophisticated statistical staffs to reproduce the analysis made by each author group and to evaluate the appropriateness of the test deployed. But by then, the "beautification" had become the order of the day.

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[32] *Science*, "About the Journal, Information for Authors." Accessed January 17, 2012, 5:44 PM. http://www.sciencemag.org/site/feature/contribinfo/prep/prep_subfigs.xhtml

[33] The journal here cites *The Journal of Cell Biology* 166: 11–15 (2004); *Nature* 434: 952–953 (2005). From *Nature Cell Biology* 8: 101–102 (2006), on 101. Accessed June 10, 2012. http://www.nature.com/ncb/journal/v8/n2/pdf/ncb0206-101.pdf

For the 9 August 2007 issue of *Paris Match,* it seems that Nicolas Sarkozy needed even more beautification than immunogold as he canoed with his son in Lake Winnipesaukee (New Hampshire). What diet or exercise could not do, Photoshop could. Love handles vanished. Advertisements went much farther. In one photo, Twiggy's face was so utterly transformed in an Olay ad that the United Kingdom's Advertising Standards Authority banned the photo as deceptive. Another advertisement featuring the model Filippa Hamilton shrunk her waist to such a degree that it became a matter of public dispute. In response, Hany Farid and his team set to work to develop a metric that would be calibrated against human judgment and then proceed algorithmically, using geometric and photometric criteria, to establish a degree of distortion. "This metric," Eric Kee and Hany Farid, asserted, "correlates well with perceptual judgments of photo retouching and can be used to *objectively* judge by how much a retouched photo has strayed from reality."[34] Here we have it: an objective standard to measure departures from objectivity.

Precisely the kind of Photoshop manipulation that plagued the objective image in science journals, models and politicians, afflicted more mainstream journalism. "Beautification," again, only this time not the improvement of electrophoresis gels, love handles, wrinkles, or waistlines, but often the violent events that landed an image on the front-page of the world's newspapers. On Monday 31 March 2003, *The Los Angeles Times* printed a dramatic photograph by Brian Walsky on page one. The image showed a British soldier warning, gripping his gun, signaling to Iraqi civilians to duck under Iraqi fire just outside Basra. Two days later, *The L.A. Times* explained:

> After publication, it was noticed that several civilians in the background appear twice. The photographer, Brian Walski, reached by telephone in southern Iraq, acknowledged that he had used his computer to combine elements of two photographs [one with the soldier in a dramatic stance while a father cowered unobtrusively in the background, the other with the same soldier in an unassuming position, this time with the father running front and center toward the camera while he clutched the child], taken moments apart, in order to improve the composition. Times policy forbids altering the content of news photographs. Because of the violation, Walski, a Times photographer since 1998, has been dismissed from the staff. The altered photo, along with the two photos that were used to produce it, is published today on A6.[35]

Detecting these and other manipulations have involved forensic researchers on both sides of the science/journalism divide as an overlapping set of statistical analyses and image processing techniques moves smoothly back and forth. Farid and his company, for example, have become investigators and counter-fraud researchers for both journalism and science.

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[34] Kee and Farid (2011, 19907), emphasis added. Accessed June 10, 2012. http://www.pnas.org/content/early/2011/11/21/1110747108.abstract

[35] *Los Angeles Times,* 2 April 2003. Accessed June 10, 2012. http://articles.latimes.com/2003/apr/02/news/war-1walski2

Even the measures recommended by scientists and journalists have begun to overlap. In both cases, it has become a commonplace for both sides to enforce a very similar ethics of the digital image. Both have regularly begun to require the submission of "raw" digital imagery, both militate against "selective" modification within the image, both require specification of what has been done to the image and with what programs. In the endless spiral of beautification and self-restraint, there will no doubt always remain a back and forth. But in the hunt for the truly raw "raw" image, in the countervailing drive to self- and outward policing, we see the very contemporary residue of a very old debate in the history of objectivity.

4.4 Conclusion

Objectivity has not only a history; it has histories. On the side of science, this particular epistemic virtue is quite different from truth or accuracy, precision or quantification. Instead, it rises in the mid-nineteenth century focused around the scientists' aspiration to hold themselves back, and, insofar as possible, to allow a kind of raw and particular nature to inscribe itself on the page. This mechanical objectivity does not form a central goal of journalism. Yes, there is a nineteenth century journalistic fascination with facts—who/what/when/where—but the compilation of itemized facts is quite different from the *procedures* of tracing, photographing, and inking that riveted the natural scientists. The scientists were after a collective empiricism, a codification of shared knowledge that would give them the basic working objects of their fields (clouds, elementary particles, skulls), while the journalists were after a mobile discursive medium that could appeal to a much wider range of audience and advertisers, formalized in pyramidical, unemotional text and instantiated in the penny press.

Scientific and journalistic objectivity did, however, come much closer to convergence in the years after World War I. For the scientists, more numerous, better resourced, and no longer so epistemically defensive, this was a time when they could frankly embrace trained judgment as a needed supplement to pure procedure. As scientists themselves put it, they were no longer willing to sacrifice accuracy on the altar of objectivity. That is, they would no longer trade a good, drawn image of a moon crater for a blurry black and white telescopic photograph. Conversely, if getting a shared, repeatable diagnosis from an encephalogram meant using a practiced eye, then so be it. On the journalists' side, far from bolstering their professional self-confidence, World War I had subjected reporters to tremendous pressure to follow government bulletins, propaganda, and censorship. Emerging from the war, newspaper men and women looked to science for a model of objectivity at just the moment the journalists were most shaken in their faith that it could be achieved. Put shortly: after the Great War, scientists began to supplement mechanical objectivity with trained judgment; journalists simultaneously entered the discourse of objectivity *and* launched a drive that has never ceased to guard a place for interpretation. Journalistic objectivity has, for its entire history, been always already disputed.

Starting in the late twentieth century, the two objectivities began to share a discourse of objectivity around the manipulable image. Here was a resource that radically facilitated the acquisition, processing, transmission, and reproduction of images. But at the same time, the numerical image offered a far greater vulnerability both to intentional and inadvertent misuse than ever before. More remarkable yet, it was the *same* set of Photoshop vulnerabilities and forensic diagnoses that launched this period of objectivity-anxiety on both sides of the science/journalism divide. This is a story that has only just begun. Like electronic warfare, measures, counter-measures, and counter-counter-measures form a continuing chain. Injunctions follow one after the other to the scientists and journalists: provide raw images, do not alter the meaning of the image, eschew the use of cloning tools, avoid excessive changes of contrast. But the twenty-first century is stable neither for scientists nor journalists. Commercial pressures alter both laboratory and newsroom, entrepreneurial scientists, infotainment journalists leave no consensus at all about what it means to be a scientist or journalist. And with these shifts, the ethical-epistemology of each is in flux.

Even for the past history of journalistic objectivity, we still have much to learn. We need a truly comparative history of objectivity in journalism, one that looks at strong journalistic traditions, for example, in Russia, France, Britain, and elsewhere that would analyze and periodize shifts in rhetorical style, the role of images, the shifting attention to facts, and the ambition to embrace or defy a procedural form of objectivity drawn from the sciences. Though not an easy task, it would be one that could do much to help us understand the ethical-epistemological disjunctions that have so shaped the last 150 years.

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