

# From Marlinspike to Mobile Media: An Archaeology of the Gadget

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## Introduction & Overview

My overarching research project is a cultural history of the gadget, as both a functional tool and a fictional device.

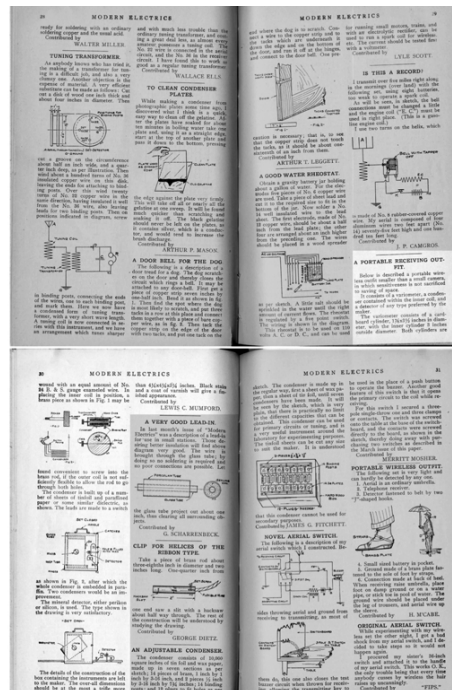
One of the historically specific contexts that I explore this nexus of technology and fictional thought is in the origins of American science fiction in electrical experimenter catalogs, a context no one has really looked at. So while we'll look at

## Mumford

One example I usually like to begin with in discussing this material is this article...

... perhaps one of the most interesting specimens in the history of pocket wireless.

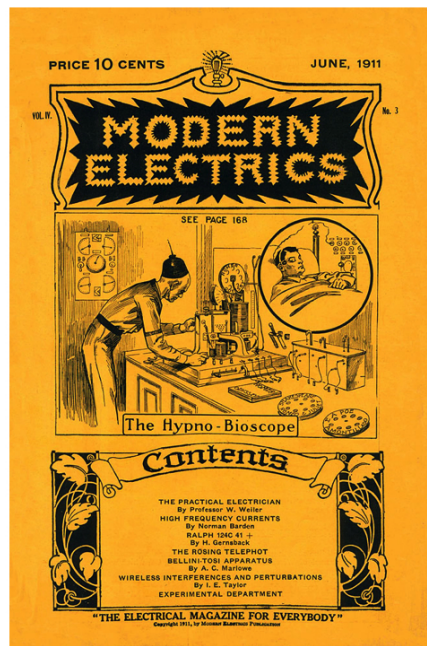
It's not the most technically original, nor is it the most imaginative in terms of the communicative scenario it projects. However, both its designer and the circumstances of its appearance in the April 1911 issue of Hugo Gernsback's *Modern Electrics* magazine merit our attention. In the magazine's monthly "Experimental Department," where readers could submit their home-brewed designs for novel electric devices, Lewis Mumford – author of the now-famous history of media titled *Technics and Civilization* (1934) – published his first piece of writing at the age of 15: a blueprint for a new kind of compact wireless receiver. Flipping back three pages in the same issue, one can find the first installment of Gernsback's serial novel *Ralph 124C 41+ : A Romance of the Year 2660*, one of the earliest works of modern science fiction.



The proximity of this future media theorist's first piece of published writing to one of the foundational works of science fiction is no coincidence. Lewis Mumford's early preoccupation as a tinkerer took root in a forum for the exchange of designs, components, and visions of the future. Mumford, who would go on to have a successful career as a literary critic and associate editor of *The Dial*, cites these experiences among a community of tinkerers in the pages of *Modern Electrics* as foundational for his later theories of what he called technology's "spiritual contribution to our culture."

*Modern Electrics*, which began as a mail-order catalogue for exotic, imported wireless parts, gradually evolved into "A magazine devoted entirely to the Electrical Arts." The magazine profiled international developments in new media technologies, summarized the latest U.S. Patents awarded to electrical experimenters, and solicited amateur blueprints, designs, and techniques from readers. What sets *Modern Electrics* apart from other technical publications of the period like *The Wireless Age* and *QST* is the way in which its writers enlisted fiction in their attempts to find a language suited to the analysis of emerging media such as radio, television, or the more exotic osophon and telegraphone.

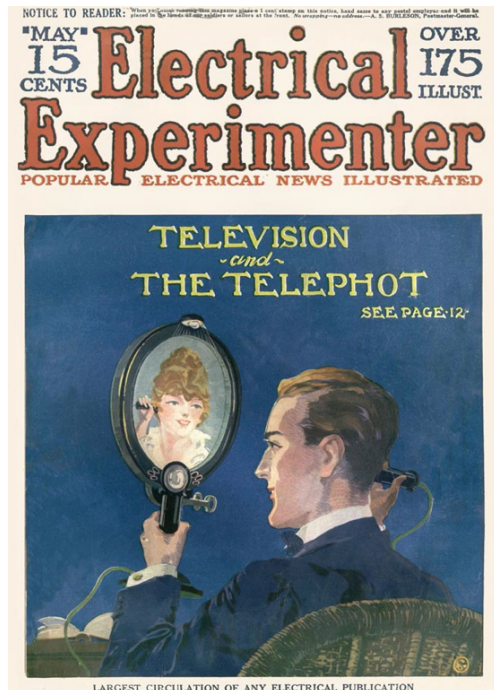
For instance, when readers submitting a design encountered difficulties in describing its specifications – perhaps a certain component was technically or economically unfeasible – they would stitch their incomplete engineering diagrams together with narrative threads. In a tradition that continued throughout



Gernsback's later publications – including *Electrical Experimenter*, *Radio News*, *Science and Invention*, and most famously, *Amazing Stories* (the first ever science fiction magazine) – *Modern Electrics* pioneered a kind of writing that combined hard technical description with an openness to the fantastic. It was a mixture out of which an entire literary genre emerged to tackle the question of the distinctive specificity of “medium” in a new wireless age.

Today, the phrase “science fiction” conjures up images of bug-eyed monsters, ray guns, starships, and sonic screwdrivers. But in the opening decades of the twentieth century, before a century's accretion of images, narratives, and cliches, that which was not yet called science fiction consisted of a great number of concrete practices all geared toward a reckoning with the technological revolutions in the fabric of everyday life. “Science,” wrote Gernsback in the inaugural issue of *Amazing Stories*,

through its various branches of mechanics, astronomy, etc., enters so intimately into all our lives today, and we are so much immersed in this science, that we have become rather prone to take new inventions and discoveries for granted. Our entire mode of living has been changed with the present progress, and it is little wonder, therefore, that many fantastic situations . . . are brought about today. It is in these situations that the new romancers find their great inspiration.



May 1918

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For Gernsback, “science” is synonymous with “applied science,” an amalgam of science and technology that saw no division between the explanation of complex things and the often fantastic incursion of those things into modern life. The paradox at the heart of Gernsback’s project is that science, that supposed vehicle of enlightenment rationality, can *itself* produce enchantment and wonder.

This is not a perspective unique to Gernsback’s emphasis on the *applied* sciences. As Philip Fisher reminds us, it is often the very act of scientific explanation that renders the object or phenomenon in question marvelously strange: “every stage of explanation . . . has consistently dispelled the extraordinary only to produce, in the very act of explanation, newer forms of wonder.”

Our literary historical challenge in working with this material, then, is to recover the sense of radical openness that greeted not only the basement tinkerer working through the feasibility of transmitting images over a wire, but also the author of “scientifiction” stories (as they called it then) who possessed a highly sophisticated awareness of the fact that . . .

Two hundred years ago, stories of this kind were not possible.

<sup>1</sup>@gernsback1927

Often, these individuals were one and the same, weaving together functional and fictional devices in a manner that served for them as a form of scientific discovery in itself.

In this talk, I will examine the circumstances of science fiction's invention in America. In contrast to the deeper history of utopias and political satires in the European tradition that would be drawn upon in the twentieth century by H.G. Wells, Olaf Stapledon, Aldous Huxley, and J.G. Ballard, I will argue that science fiction emerged in America as a discourse on media. While some of the most influential histories of science fiction have subsumed the genre within a larger continuum of utopian literature (as does Frederic Jameson with his emphasis on the transhistorical "desire called utopia"), this approach ends up emphasizing the vast worldbuilding enterprises of the American left (as in Ignatius Donnelly's *Caesar's Column* from 1890 and Edward Bellamy's 1888 record best seller *Looking Backward*), while papering over the smaller-scale, everyday concerns of the technologists and technocrats on the other side of the Atlantic (most notably, Rudyard Kipling).

It also overlooks many of the speculative energies that were both inspired by and reflected in literary productions: tinkering, cinema, popular science, expositions, and industrial design. Setting aside the literary historical syntheses of those science fiction critics looking to elevate the status of the genre by associating it with utopias and political satires, my concerns are quite different.

I'll proceed instead through a speculative question of my own: what would a literary history constructed from objects look like? Because the history I have in mind here is not one of *literature* as "a body of works" but the far more slippery *fiction* as "a relation to reality," or what has been called "a form of lived experience," this is not entirely a question of book history, with its emphasis on the material practices and circulation of literature. In fact, perhaps a shift in emphasis is necessary, from the question of literary history to one of *fictional history*. In revisiting the genealogy of what Gernsback first christened as "scientifiction," I want to get at the production of those particularly otherworldly moments of everyday life, those moments that seem to extract us from the flow of the ordinary and provide us with a new perspective on it. For Michael Wood, fiction can be seen as

something we find in the slightest hints and verbal gestures of ordinary life, whenever we speak playfully or ironically, or call something by a name that is not its own; whenever we see or say that people and places have markedly changed while stubbornly, loyally remaining the same.

While book history takes up the materiality of literature, the materiality of fiction or what Wood elsewhere calls "the fictionable world" presents us with some potentially thornier questions. How are fictions expressed not only in literary form, but in organizations, plans, engineering diagrams, standards, and

physical media machines? How might we conceptualize or model this moment of exchange between the material and the possible? Science fiction, a literary genre that emerged out of an electrical parts catalog, provides one starting point for such questions.

## Everyday Estrangement

One would be hard pressed to find a formulation in the lexicon of literary criticism that has stood unchallenged longer than Darko Suvin's definition of science fiction (SF) as the literature of "cognitive estrangement." Other useful definitions have certainly emerged from the genre's authors and critics, albeit many of the tongue in cheek variety. Science fiction is "what the SF editors publish" (John W. Campbell). It is "what we mean when we point at it" (Damon Knight). If we're feeling particularly glib, we might simply say "you know it when you see it" (Theodore Sturgeon). In a more serious vein, James Gunn the genre as "the literature of change," a definition so inclusive that it seems of little use. Few accounts have proven as rigorous and influential as Suvin's, however, and it has held sway over the study of the genre for four decades.

First put forward in "On the Poetics of the Science Fiction Genre" (1972), the phrase "cognitive estrangement" defined the "necessary and sufficient conditions" of a genre "whose main formal device is an imaginative framework alternative to the author's empirical environment." According to this model, science fiction is premised on a process of "estrangement" in that the literary gambit of the individual work consists of a "what if" question directed away from whatever we accept to be this world. Importantly, this movement away from our world must be "cognitive." That is, the fictional hypothesis of the work is elaborated with objective, "scientific" rigor—it has to be plausible. These two elements of the science fictional narrative are intimately connected in that "the cognitive nucleus of the plot codetermines the fictional estrangement itself." This is to say, the aesthetic of SF's estrangement from our world—in a "gesture of pointing, a wide-eyed glance from here to there, a 'traveling shot' from the author's everyday lookout to the wondrous panorama of a far-off land"—resides in the totality and complexity of its relations with the given.

It's only now that attacks on this formulation of science fiction's supposedly defining feature are gaining any traction. Samuel R. Delany, who questions whether nailing down a concrete definition of science fiction is at all a useful critical endeavor in the first place, was one early detractor of Suvin's work. Delany argues that "the presence and interaction of estrangement and cognition in a literary work are simply and blatantly insufficient to produce SF. If they interact in one way, they produce fantasy. If they interact in another, they produce surrealism. If they interact in still another, they produce criticism." China Miéville takes a more pointed approach in his contribution to a recent volume on Marxism in science fiction, drawing attention to the way that cognition

in Suvin's account is premised on an uncritical and monolithic ideal of science. Miéville writes, "To the extent that SF claims to be based on 'science,' and indeed on what is deemed 'rationality,' it is based on capitalist modernity's ideologically projected self-justification: not some abstract/ideal 'science,' but capitalist science's bullshit about itself." This idealization of science ignores not only the social construction of what counts as scientific fact, but also the works inspired by the New Wave of 1960s science fiction whose extrapolations proceed not from "science" but conceptions of gender, race, class, psychology, and sexuality.

For other critics, the fact that Suvin focuses only on literary works of science fiction (a model which, furthermore, he admits excludes 95% of what is published as science fiction) is enough to render his model useless, as it ignores the output of the genre in comics, films, television, performance and visual art, and even some types of critical theory. Istvan Csicsery-Ronay takes a more catholic approach in *The Seven Beauties of Science Fiction* (2008), a catalog of the formal markers native to the genre. Surveying the many varieties of aesthetic experience science fiction can take up in all of its various media, Csicsery-Ronay even allows for the possibility that science fiction might be seen as a certain modality of lived experience in our thoroughly "technologized world."

The widespread normalization of what is essentially a style of estrangement and dislocation has stimulated the development of science-fictional habits of mind, so that we no longer treat SF as purely a genre-engine producing formulaic effects, but rather as a kind of awareness we might call science-fictionality, a mode of response that frames and tests experiences as if they were aspects of a work of science fiction. [...] Most people merely bracket difficult-to-process, incongruous moments of technology's intersection with everyday life as science-fictional moments.

This affective turn toward "science fictionality," an expansion of the poetics of a literary genre into a category of experience, constitutes one of the more interesting developments in science fiction studies over the past couple decades. In its simplest formulation, the idea circulates as a truism that "The world finally has caught up with science fiction." Many instances of this saying attempt to highlight the way in which the pace of technological change feels like it outpaces any attempt to understand the significance of that incursion in our daily lives. Others try to come to terms with the fact that many of the genre's imagined futures never came to pass, as in the popularity of retrofuturist books like *Where's My Jetpack?* and blogs like *Paleofuture*, both of which catalog images of futures past that sync up with the present in uncanny ways.

Some scholars in science fiction studies encouraged a shift toward the science fictionality of everyday life in order to account for a media historically specific shift. Brooks Landon, for instance, writes in 1992 of his "belief that contemporary electronic technology has so displaced the savor of potentiality from stories about 'great vistas in time and space' to ways in which we actually experience time and space anew, that our culture now unconsciously brings to the experience of

film and electronic media expectations very similar to those of the traditional SF reader.” For yet another camp of science fiction critics, the experience of science fictionality itself is the product of a postmodern accretion of text upon text to the point that “the literature of the future has a long and honored past,” as Bruce Sterling writes in the preface to his famous anthology of cyberpunk fiction, *Mirrorshades*. Describing the 1980s movement that encompassed not only fiction writers but poets, fashion designers, and fan cultures, he continues, “The cyberpunks are perhaps the first SF generation to grow up not only within the literary tradition of science fiction but in a truly science-fictional world,” and so they sought to capture “the overlapping of worlds that were formerly separate: the realm of high tech, and the modern pop underground.”

While critical discussions on science fictionality were launched in order to describe certain contours of the contemporary moment, the sense that the world has caught up with its own fantastic dreams is not a recent development, as we’ve seen. Many film and media scholars have remarked for some time on the inherent science fictionality of media technologies and their realignment of our sense of time and space, the cinema chief among them. What type of literary, or rather “fictional” history would result if this approach to science fiction as a particular form of everyday experience was projected back into a reevaluation of the genre as a whole, rather than confined to a particular historical moment within it? Instead of understanding “science fictionality” as the product of a postmodern accretion of images and narratives, how might we instead revise our understanding of science fiction’s literary history so that it might be seen as a structural inheritance of the genre’s very origins?

In many ways, by putting forward an extra-literary model of science fiction as a kind of experience that arises in the everyday, recent critics are returning to the intellectual core of Suvin’s theory even as they seek to revise it. The genealogy of Suvin’s concept of “estrangement” lies precisely in such an attempt to account for everyday experience, drawing heavily upon Russian formalist literary critic Viktor Shklovsky’s concept of *ostranenie*, translated most commonly as “defamiliarization.” For Shklovsky, all art possesses the ability to militate against the habituation of perception, the process by which the monotony of our daily experience causes objects to “retreat into the area of the unconsciously automatic.” Picking up a hammer for the first time is a completely different experience when one compares it to holding that tool for the ten thousandth time. Much like Heidegger’s account of the way in which the tool disappears into a work process, some form of exteriorization or distance from that tool is required to understand its essence in any way. For Heidegger, this occurs when the tool breaks. But for Shklovsky, it is art that exists to “make the stone stony,” as he puts it. “The technique of art is to make objects ‘unfamiliar,’ to make forms difficult, to increase the difficulty and length of perception because the process of perception is an aesthetic end in itself and must be prolonged. Art is a way of experiencing the artfulness of an object: the object is not important.” The end goal of Shklovsky’s reorientation toward objects that have retreated into the invisibility of habit is not to achieve a new kind of knowledge about the



object. For Shklovsky, perception is a process wholly different from knowledge (thus forcing Suvin to modify the Russian formalist account so that it might be used as a descriptor of science fiction, which involves a “cognitive,” or empirical, form of estrangement). Shklovsky writes, “Defamiliarization is found almost anywhere form is found. [...] Its purpose is not to make us perceive meaning, but to create a special perception of the object—it creates a vision of the object instead of serving as a means for knowing it.” Suvin on the other hand places an emphasis on estrangement as the confrontation of “a set normative system—a Ptolemaic-type closed world picture—with a point of view or glance implying a new set of norms.” But this confrontation need not be the sole province of literary fiction, with its systematic construction of fictional worlds through narrative means. Estrangement is simply the process by which any form of aesthetic representation allows us to hold an everyday object at arm’s length, to make it strangely new once again.

Shklovsky’s *ostranenie* highlights the aesthetics of what Bernard Stiegler calls “technics and time”: the temporal frameworks into which we place our tools and the uses to which they have been, are being, and can be put. Out of this core scene—an object that is made strange to us—an incredible number of literary aesthetics, media theories, and design objectives have been inspired, each of which proceeds from a slightly different temporal framework. As Tom Gunning writes, “the cycle from wonder to habit need not run only one way.”

In some, the newly gained perspective proceeds from some quality of the tool itself (it is broken; it is a fantastic innovation), while in others it is a product of a representation or narrative of that tool. Such an aesthetic distancing might proceed from a lengthy process of extended attention, perception, and appreciation, as it does for Shklovsky. It may also be the product of a spectacular shock or momentary tableau, the latter best exemplified by the *Gestus* and *Verfremdungseffekt* (“alienation effect”) of Bertolt Brecht’s epic theater. The temporal condition of the tool itself is also in question: the tool might be a well-worn mainstay of the craftsman, marked by the unique imprints of use; it might be a brand new device that promises to change our lives while at the same time exceeding our ability to understand how it works; or it might be an imaginary gadget from the future whose functionality somehow manages to remain legible to us in our newly appreciated historicity.

It is precisely this production of the strange and wondrous new—which as Wendy Chun reminds us, is itself “a historical category linked to the rise of modernity”—that science fiction calls into question. By definition, the new should be a kind of singularity, utterly unexpected and irremediable, an experience that exceeds any known analog: “the new should have no precedent, should break with the everyday, and thus should be difficult, if not impossible to describe. If something is new—that is known or made for the first time—then we should, according to Descartes in his influential definition of the new, fall into a passionate state of wonder or surprise.”

Chun astutely calls attention to the way that in technological modernity, the new

is constructed in advance of any actual encounter with the supposedly unfamiliar object:

Actually using the Internet, for instance, is banal in comparison to its pre-mass usage filmic, televisual, and print representations. To call X ‘new’ is to categorize it, to describe and prescribe it, while at the same time to insist that X is wonderful, singular, without opposite or precedent. This insistence more often than not erases X’s previous existence (case in point, the ‘discovery’ of the ‘new world.’).

Similarly, Tom Gunning describes the “rhetorical tropes and discursive practices” that have benefitted from the valorization of the new in modernity, with its ever-shorter circuits between astonishment and second nature, amazement and explanation:

. . . surprise is learned, fostered and expressed by discursive practices whose implementation brings profit to someone: merchants, policy makers, civic fathers justifying municipal power plants, or any one of a number of interested parties. Modernity must partly be understood as learning to be surprised by certain innovations, a discourse which valorizes and directs our attention to such changes and the excitement they can provoke.

For science fiction to represent the new, then, presents a paradox. Without a rhetorical framework within which to project and make sense of the new, it would never become legible to us in the first place. But the way in which science fiction challenges us to imagine the fantastic through things at hand is what provides it with its productive potential for new forms of knowledge about our world. As Frederic Jameson argues, science fiction’s “deepest vocation is over and over again to demonstrate and to dramatize our incapacity to imagine the future,” radical difference, otherness, or Utopia.

So, in looking at the extraliterary history of everyday estrangement profiled by Chun and Gunning and its constitutive role in the history of science fiction, we will want to ask what is “dramatized” by the historical specificities of the new in the early twentieth century. What were the “rhetorical tropes and discursive practices” of the new drawn upon by scientifiction, the forms of technological experience the genre sought to represent, and what were the forms of knowledge that such representations produced? An excavation of early science fiction has implications not only for science fiction studies (which largely ignore this period in the history of the genre), but also for media studies and the question of the scale at which it begins to select its objects of study. At what point does the study of media transition from a question of technical specificity to one of cultural form: the electrical impulse, the circuit, the individual device or its content, the delivery infrastructure, or system standards?

This was a formative moment for not only science fiction but media studies itself. In looking at the ways that amateur experimenter magazines sought to describe and reproduce the estranging effects of new technologies, we will witness the emergence of a critical discourse on media long before it became a topic of academic inquiry.