

From physics to carnival: the Repurposing of Cassirer’s *Substance and Function* in Bakhtin’s Theory of the Novel

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When Bakhtin finally figured out his position on the novel, in the mid-1930s, he claimed that “the epoch of the great astronomical, mathematical and geographical discoveries, which laid waste to the finishedness and boundedness of the old Universe . . . , the epoch of the Renaissance and of Protestantism, which destroyed medieval verbal-ideological centralization, could only be adequately expressed by the Galilean linguistic consciousness embodied in novelistic discourse . . .” (“Слово в романе” [“Discourse in the Novel”] 170). Galilean linguistic consciousness was a phrase he liked: it expressed what he thought was an important parallel between modern science and novelistic style and he used the phrase a couple of times in the essay “Слово в романе”. When he came to think about the novel as a literary genre – which was the title of a lecture he gave in 1941 (later rechristened “Epic and Novel”) – he was at pains to emphasize the “simultaneous birth of scientific thought and of the new artistic, prosaic novelistic image” (“Роман как литературный жанр” [“The Novel as a Literary Genre”] 628).

The idea that scientific thought and novelistic writing marched through history hand in hand was something new, dare I say novel, for Bakhtin. Ten years earlier he had thought science was the antithesis of novelistic style. In his 1929 book on Dostoevsky, he had argued that the Russian novelist’s revolutionary dialogical style was opposed to the entire “ideological culture of modernity”, which was governed by a scientific cause-and-effect perspective on all things human and natural (Проблемы 79). In the plots of old-fashioned “monological” novels, such as those written by Turgenev and Tolstoy, “[f]amilial, life-story and biographical, social-conventional, social class relations constitute the hard, all-determining basis of all plot relations; here contingency is excluded” (89). In Dostoevsky, by contrast, the external circumstances that frame a hero’s life “cannot be causal and genetic factors that determine the hero”, as they are in the social-psychological novels of the nineteenth century (57). In 1929, Bakhtin thought science obstructed the work of the dialogical novel.

What occasioned the change of heart? The simple answer is Ernst Cassirer, the philosopher of science, and Matvei Kagan, Bakhtin’s close friend, through whom he became acquainted with Cassirer’s work. Bakhtin probably learned about Cassirer when Kagan and he participated in what they called a “Kantian seminar” in 1918. Equally likely, he knew about the first volume of Cassirer’s *Philosophy of Symbolic Forms*, dedicated to “Language,” when Voloshinov started to translate it in the late 1920s (he cites the work in “Слово в романе” a few years later). It is hard to believe that when he and Kagan met in the summer of 1936 (having not seen each other for several years) and made up for lost time by having a series of very long conversations, Cassirer was not something they discussed, because we know for certain that Bakhtin made detailed notes on two of Cassirer’s works (the second volume of the *Philosophy of Symbolic Forms* and *The Individual and the Cosmos in Renaissance Philosophy*) at some point in the 1930s, that he paid Cassirer the backhanded compliment of plagiarising from the second work in his dissertation on Rabelais, and that sly references to Cassirer’s ideas pop up in his work from the late 1930s onwards (Poole,

Brandist, Lofts).

There is, of course, a complex answer as well. Bakhtin's reacquaintance with Cassirer in the 1930s prompted him to think about science very differently, as no longer a simple matter of brute causes and effects. A philosopher of science who remade himself as a philosopher of culture, Cassirer was able not only to provide Bakhtin with a far more sophisticated grasp of modern science than he had earlier, but also to show him how science might be regarded as a moment of culture. There is no evidence that Bakhtin, in this period of transition, learned anything new about the natural sciences themselves. His new respect for science depended on a knowledge of it that was twice mediated, first through the philosophy of science and then through a philosophy of culture derived from the philosophy of science. His assimilation of Cassirer led him to refashion the opposition he had drawn between dialogical and monological writing, led him to put the novel into the same camp as science and led him to rethink what novels were actually accomplishing, what their historical role was in modern European culture. But to make sense of it all, we have to go back to the beginning, to a youngish Ernst Cassirer, who is attempting to draw the philosophical consequences of developments in physics, chemistry and mathematics in a book published in 1910, called *Substance and Function*.

On its face *Substance and Function* is a book about how we should understand the work and the achievements of the physical sciences, physics and chemistry in particular. These, Cassirer argues, are distinguished by a peculiar kind of conceptuality, drawn almost directly from mathematics, that provides a paradigm not only for scientific work, but for conceptual thought in general. Understanding what physics and chemistry have achieved will show us what human thinking at large might achieve, what its essential nature is and what its prospects are. The modern natural sciences have affected a revolution in the way we apprehend the world.

But, like so much that is worth achieving, the conceptual summit of natural science has been reached only after a long and arduous struggle. Not with the natural elements themselves, as with ordinary summits, but with a way of thinking about natural elements, more precisely with a fundamental confusion about how we ought to think about natural elements. Since the time of Aristotle, according to Cassirer, we have thought of objects as substances with properties, and we have thought of concepts as names for those properties. We discover the properties, that is, we derive the concepts by a process of abstraction from the sensuous world. We can put it very crudely without much injustice; observing many different red objects, we note what they have in common, the property of redness, which then becomes a concept. Concepts are effectively names for parts or aspects of the world, "the common element in a series of similar or resembling particular things", although in what precise way they exist is a source of endless debate (9). "The essential functions of thought, in this connection," Cassirer says, "are merely those of comparing and differentiating a sensuously given manifold" (5).

Cassirer thinks there are good philosophical reasons for rejecting this doctrine of the "construction of concepts" (4) or *Begriffsbildung*. But the important thing is that science itself, from about the time of Galileo onwards, has rejected the doctrine, not in abstract philosophical terms, but by doing science differently. For Galileo, in Cassirer's telling, marks the beginning of a mathematized kind of physical science, a knowledge of nature that relies ever more steadily and rigorously on a mathematical version of the concept, which Cassirer, in keeping with contemporary logic, calls the function. A function does not abstract from the "sensuously given manifold" – it establishes a law that relates various parts of that manifold to one another. Whereas the "generic

concept" (4) – the name he gives to the old Aristotelian kind – names properties, parts, of the things it relates to, the function provides a law entirely distinct from the particulars that the law specifies and relates. Or in Cassirer's mellifluous prose, "We do not isolate any abstract part whatever from the manifold before us, but we create for its members a definite relation by thinking of them as bound together by an inclusive law" (20). To take a simple example, a function such as doubling, applied to the numbers (1, 2, 3, 4, etc.) will have as its values the numbers 2, 4, 6, 8 and so on: it creates a relation among these objects without itself pretending to be a part of them. Doubleness is not a property of these numbers that they share – doubling is the function that relates them to one another, that creates the series; it is, one might say, the form of their relation, rather than a part or property of their substance.

The struggle to displace the generic concept with the function, with the mathematical concept, can be seen in the history of science itself, which gradually abandons substantial, Aristotelian concepts for functional ones or else gradually replaces substantializing interpretations of physical or chemical concepts with functionalist ones, as happens, for instance, in the history of the concept of the atom, which goes from "the *extensive* corpuscule to the *simple* mass-point" (Cassirer 160). Initially, atoms are very small things, but things nonetheless with parts and with qualities borrowed from the sensuous world. Chemistry advances, according to Cassirer, by rethinking the atom, by converting it from a substance, something thing-like, to something like a node, around which different functions are organized. Thus, when chemistry attempts to differentiate the elements by their atomic weights, it seems to rely on the substantiality of atoms (as if weight were a property of the atom), but as it progresses it becomes clear that the atom is actually the "unitary center of a system of coordinates", a kind of virtual point through which the various empirical laws of chemistry can be organized (208). This is beautifully illustrated, Cassirer argues, by the periodic table, which explains the sensuous properties of various elements – hardness, conductivity, their behaviour as gases or solids – "through the mediation of the concept of the atom", as a function of the relations among their atomic weights (208). Accordingly, "[t]he place of an element in this fundamental systematic series determines in detail its physico-chemical "nature"" (216).

While the evolution of the atom is exciting, Cassirer is even more enthused by the displacement of the atom and atomism in general by the concept of energy, which arises as a mere "construction" (186): not the name of something with sensuous existence, but a way to relate distinct phenomena like motion, heat and electricity. The law of the conservation of energy "directs us to coordinate every member of a manifold with one and only one member of any other manifold, in so far as to any *quantum* of motion there corresponds one *quantum* of heat, to any *quantum* of electricity, one *quantum* of chemical attraction, etc." (191). Energy, he insists, is "never a new *thing*, but is a unitary *system of reference* on which we base measurement" (although, he will admit, people are tempted to think of it as a new kind of substance, a new thing) (191). Its scientific significance is "exhausted in the quantitative relations of equivalence, that prevail between different fields of physics" (191).

All of this culminates in a new concept of nature, as something given form by a network of natural laws, embodied in mathematical equations and functions. But the progress of science does not merely turn nature into a different kind of object: it also transforms our relationship with nature, insofar as human reasoning, via the function, is what fixes nature and allows us to see it for what it is. The empiricist concept of nature, which depends on the generic concept, assigns human beings a passive role, reduced to identifying the contents of sensation. By contrast, functional concepts refuse

to passively accept the given – they rework and reshape it according to (mathematical) principles that are not derived from sensation and thereby provide evidence of human thought's "characteristic and original spontaneity" (187).

In a famous anecdote, Cassirer claimed that 7 years after *Substance and Function*, he stepped into a streetcar and realized that the formative, spontaneous power of human thought was not reserved to science alone; it was just one of the forms in which symbols helped us organize a world, and it was the job of philosophy to establish what was distinctive about each and how they related to one another (Gawronsky 25). It is fun to think of intellectual advance as moving by epiphanies, and I suppose there is something charmingly modernist about it, but Cassirer's epiphany was both an insight and the realization that he had an awful lot to think about. The end result of all the thinking was the series of texts, published in the 1920s, with which Bakhtin was familiar: the *Philosophy of Symbolic Forms*, in which Cassirer embraced the notion that the grasp of reality one got through scientific symbols was just one of a larger set of somewhat heterogeneous symbolic processes.

Being a neo-Kantian, Cassirer divided his new philosophy into three books, devoted to language, mythical thinking and science respectively, understood as three distinctive kinds of symbolism. But the systematic appearance disguises the extent to which he was actually making it up as he went along. The first volume presents language itself as both a unique symbolic form and as a kind of table-setter for science, giving, by means of words and grammar, the flux of experience a rough and usable shape, which will constitute the initial object of science. In the second volume, devoted to Mythical Thinking, Cassirer changes his mind: the world is not initially the flux of experience, to be shaped by language, but is, in its most primitive form, mythical, animated by demons and quasi-subjective forces. Language, and science in its turn, reorganize this mythical world along different lines, but neither is able to permanently subdue the original mythical impulse. The third volume, ostensibly about science alone, in fact turns into a kind of Deuteronomy, in which Cassirer, pausing before the Promised Land, recounts the whole history again, with myth as the starting point, language in the middle and theoretical science the culmination of human culture. But now myth is recast as something called "expression" (*Symbolic Forms: Phenomenology* 62), which is the symbolic form in which we grasp intersubjectivity, which means, among other things, that we shall probably never be rid of it and should never want to be.

Accordingly, the *Philosophy of Symbolic Forms* can be read as a grander, more expansive rewriting of the narrative presented in *Substance and Function*, in which science is the pinnacle of human creativity and myth is the thing – more precisely, the thinginess – it permanently and irrevocably transcends. Or the *Philosophy* can be read as a grudging acknowledgement that science is not the only game in town, and that our culture is a system of related but independent symbolic forms, encompassing science, art, myth and religion among other things. It can also be read – and this is what I think Bakhtin did – as an account of science's endless struggle with myth, of its inability to shake off the persistent substantialist, mythic forms which by rights it should have left in some primitive dust. As Cassirer puts it, "The foe which knowledge has seemingly defeated forever crops up again in its own midst", as in, for instance, the ". . . still inconclusive struggle to free the concept of force from all mythical components, to transform it into a pure concept of function" (*Symbolic Forms: Myth* xvii).

What cannot be done, however, is to read the *Philosophy of Symbolic Forms* as a celebration of science as against culture. Not just because at the very outset Cassirer describes his project as a critique of culture, meaning to encompass science within it

(*Symbolic Forms: Language* 80), but also because Cassirer persistently equates scientific autonomy – the refashioning of our experience and with it the world through the power of human reason – with ethical autonomy, with the notion of a self responsible for its own actions and for the history in which it participates. In case anyone has missed the point, the final paragraph of the project, contained in the posthumously published fourth volume, tells us that humanity's participation in the natural order it discovers "cannot consist of passive awareness . . . In this act of becoming conscious and of making himself conscious we do not find the power of fate which governs organic processes", but ". . . the realm of freedom. The true and highest achievement of every 'symbolic form' consists in its contribution to this goal; by means of its resources and its own unique way, every symbolic form works toward the transition from the realm of 'nature' to that of 'freedom'" (*Symbolic Forms: Metaphysics* 111).

Is that culture, though? In the tradition of German philosophy that followed Schiller's *Letters on the Aesthetic Education of Man*, culture was a way station between our ordinary experience and the ethical-moral sphere of freedom and responsibility. Culture encompassed the spontaneity and freedom of artistic production, but in contrast to the lawfulness of science and the free will embodied in ethics. By the end of the nineteenth century, however, the term had bifurcated, denoting, on the one hand, a specialized sphere of artistic work, distinguished by its creativity and spontaneity, and, on the other, the customs, values and practices of a specific society, usually the object of anthropological inquiry (an ambiguity famously dissected by Raymond Williams in *Culture and Society, 1780-1950*). Cassirer, however, proposes a distinctive synthesis of the two definitions, in which the spontaneity originally reserved for art is extended to the other customs and practices of a society, to the full range of human symbolic activity, at least in their modern, specialized forms: science, art, religion and so forth.

Arguably, something like this understanding of the scientific enterprise was found in Cassirer's writing from the beginning. Edward Skidelsky has pointed out that although *Substance and Function* contains nothing like the stirring lines quoted above, it is nevertheless animated throughout by the "*pathos* of rationalism: a stirring vision of the autonomous intellect confronting and overcoming the world of inert sensation" (64). The idea that science was merely science, separated from ethical considerations by its objectivism, was accordingly part of the empiricist surrender to sensation, the conception of science as a mere parsing of the given. It may be, however, that the freedom and spontaneity Cassirer attributed to science had, in effect, been borrowed from a very different field of culture. Almut Shulamith Bruckstein has argued that Cassirer's conviction in the spontaneity of science was something he inherited from his teacher Hermann Cohen, an earlier philosopher of the new physics (and an independently important influence on Bakhtin). (179) According to Bruckstein, Cohen, the leader of Neo-Kantianism, was not an ordinary philosopher of physics – he was also a Jewish philosopher, for whom the freedom and spontaneity of human thought was ultimately grounded in the Messianic writings of the Jewish Prophets. The Prophets established the idea of autonomy (independence from everything given) and spontaneity as determining features of human spirit. Cohen made these features the basis of an autonomy that expressed itself in diverse realms of human activity. Cassirer, so the argument goes, embedded this spontaneity and autonomy in his account of the autonomous intellect, without the explicit input of the Prophetic writings. The upshot is that Cassirer's account of the progress of science was grounded from the outset in a religious and ethical understanding of human will and reason.

What is undeniable, in any case, is that turning modern science into the avant-garde of human culture made it a lot easier for Bakhtin to incorporate Cassirer's theory into his evolving account of the novel. The incorporation is, of course, neither abrupt, systematic or explicit. It seems to take place over the course of the essay "Слово в романе", which, although it is ostensibly Bakhtin's first definitive statement of his theory of the novel, in fact moves from one theory of the novel at its beginning to a somewhat different one at the end (that the essay took six years to compose makes this less surprising). To make matters more opaque, the difference between the earlier and later versions of the theory is expressed not in terms of what the novel is, but in terms of what the novel is not, what form of discourse is the antithesis of the novel. Readers have tended to dwell on the vivid opening chapters of the essay, in which Bakhtin takes aim at Russian Futurism and Formalism, calls on "heteroglossia organized in the lower genres" to upset the official unified language, and makes some outlandish claims about the monological language of poetry (26). In this account, the style of the novel is systematically opposed to "discourse in poetry" (29), and a philosophy of language founded on the concept of heteroglossia is opposed to one based on the concept of a formally unified language. The argument is, roughly, that conceptions of language as a shared formal system underestimate what sociolinguists these days call the indexical features of language, the ways in which formal features attach themselves to social contexts and social identities. Novels which "orchestrate" (15) these recognisable social dialects demonstrate that languages are not simply codes and that mastery of a formal system will not get you very far.

But there is a notable change of tack in chapters three and four, where the novel is contrasted not with a homogenising, formalised poetic discourse, but with an authoritarian discourse that is embodied in traditional figures (priests, judges, political leaders, etc.) and "indivisibly intertwined with external authority – with political power, with an institution, with a particular figure" (97). At that point, what is distinctive about the novel is its constant ironising of language and its satirical, genre-busting approach to other kinds of literary material. Hardly anyone thinks it is worth perusing the fifth, historical chapter, "The Two Stylistic Lines of the European Novel" (121-79) for anything of theoretical interest, although it is precisely there that we get the ringing affirmation of science quoted earlier and the metaphorical claim for a Galilean linguistic consciousness, and it is precisely there that Bakhtin makes the claim that the novel represents "a radical revolution in the fate of human discourse: the fundamental emancipation of cultural-semantic and expressive intentions from the power of a single and unified language, and, as a consequence, the loss of the experience of language as myth" (122).

The idea of myth as an element or tendency within language was borrowed from Cassirer and the loan was not unacknowledged, as Cassirer is mentioned in a footnote ("Слово в романе" 124n55). The footnote, which does not appear in the existing translations of this text, mentions a number of writers who discuss language and myth: Cassirer, Hermann Usener, the Soviet linguist N. A. Marr, Wilhelm Dilthey, the Russian literary scholars Potebnia and Veselovskii, and the German philosophers Steinthal, Lazarus, and Wilhelm Wundt. Following Cassirer, Bakhtin will both identify myth with "a prehistoric and thus inevitably hypothetical past of linguistic consciousness" and acknowledge, somewhat grudgingly, that myth is dead but won't lie down, that a "mythological sense of linguistic authority and immediacy" persists in the present, threatening to obstruct or distort the Galilean linguistic consciousness we have achieved (124). That immediacy had been a defining feature of myth in Cassirer's account, for Cassirer believed that one of the crucial presuppositions of myth was

disbelief in signification. Mythic consciousness was distinguished by its substantializing of everything, its relentless insistence that every change, every attribute and every quality was embodied in a particular kind of material; every similar attribute of substances was "ultimately explained by the supposition that one and the same material cause is in some way 'contained' in them" (so that, for example, in alchemy, every attribute or property of a particular kind of object is explained by the presence of a specific element) (*Symbolic Forms: Myth* 66). Words themselves had, therefore, to share in the substance of the thing they represented. In consciousness dominated by myth, "[w]ord and name do not designate and signify, they are and act. In the mere sensuous matter of language, in the mere sound of the human voice, there resides a peculiar power over things" (*Symbolic Forms: Myth* 40). Or, in Bakhtin's words: "An absolute fusion between word and concrete ideological meaning is, without doubt, one of the most fundamental, constitutive features of myth" ("Слово в романе" 123). Mythical words do not, strictly speaking, represent, just as the names of the gods do not merely represent the gods, but are part of their essence; this is the fusion between word and "concrete ideological meaning" of which Bakhtin speaks.

But if myth rather than poetry is the antithesis of the novel, then what is distinctive about the novel has changed. The problem with myth is not that it masquerades as a decontextualised formal system or code; it does not base its authority on a false universalism. Mythic authority derives from the fusion between words and the power of a different, distant and hierarchically superior sphere, ontologically distinct from the merely present, profane world. Initially, mythic speech entails fusing language with the sphere of the sacred, understood as a domain of magical forces that are both extraordinary and pervasive. The earliest versions of human political power will draw on these mythic forces, claiming that those invested with political power are either semi-divine or divinely ordained. Bakhtin's larger claim is that later versions of political and cultural power – political leaders, judges, priests and so on – inherit this mixing of magical force and earthly reality; their potency relies on a similar fusion of earthly presence and spiritual force. Eventually, Bakhtin's interest in myth will lead directly to the critique of "official seriousness" ("Дополнения и изменения к 'Рабле'" ["Additions and Amendments to *Rabelais*"] 81) that runs throughout his writing on popular festive culture and *Rabelais*. In notes made in 1962-3 Bakhtin makes the connection between this later critique and his original debt to Cassirer explicit: "official systems", he remarks, "are substantial, and not functional systems" ("Примечания 1962 г. - 1963 г." ["Notes from 1962-1963"] 378). The only other time Bakhtin invokes the substance/function opposition explicitly is in the 1929 *Проблемы творчества Достоевского* ["*Problems of Dostoevsky's Art*"], where he says of the hero of the adventure novel, which Dostoevsky takes as a model: "He is likewise not a substance, but a pure function of adventures and escapades." (94-5).

This usually unnoticed shift is important because when Bakhtin decides myth is the problem, he is also deciding that science is the solution. Not in the sense that novels will make distinctive truth-claims, either about particular narrated events or about the social world in general: the novel will be neither an historical document nor a sociological treatise. Novels will be scientific in a phenomenological sense – they will present the world in a way that makes it knowable, or, as Bakhtin calls it, "familiar" ("Роман как литературный жанр" 627). For sure, particular novels may – by virtue of their narrative structure or style – make implicit claims about how events intersect or about the social significance of a way of speaking. But Bakhtin describes the novel's achievement as the preparation or representation of a world that could be, in particular ways, known. This knowability has several dimensions, and they are described in detail

in the writings on the novel (lectures, essays and notes) that follow "Слово в романе" and in the dissertation/book on Rabelais. Three dimensions strike me as the most interesting. They are: the familiarization of the world and its particular relationship to laughter and the comic; the attainment of freedom through ironic distance; and the establishment of a new structure of time, which Bakhtin calls "contemporaneity" ("Роман как литературный жанр" 631).

At first glance, the claim that novels make the world familiar (made insistently in the essay "Роман как литературный жанр" and then continually in the various writings on Rabelais) appears as a direct riposte to Shklovsky's famous argument that verbal art defamiliarises the world, compelling us to attend to the sensory particulars freshly, as if for the first time ("Art" 73-96). The apparent antithesis is partly a matter of translation – Shklovsky's term is literally "making strange", and the mention of familiarity is just a feature of a particular English rendering. But at a deeper level the distinction between Shklovsky's and Bakhtin's terms is about what keeps the objects we want to know distant from us, beyond the reach of secular knowledge. For Shklovsky, the problem is habit, a tendency to perceive objects according to existing concepts and practices, thus missing their particularity and their possibilities. For Bakhtin, the distance enforced on objects is *epic*, i.e., a consequence of the aura of the sacred and mythic that places animate beings and objects on a separate ontological plane from the present and from the profane knower.

Ironically, the more apt comparison would be to Bertolt Brecht's so-called epic theatre. For the kind of theatre that Brecht called, at various points, culinary, Aristotelian or cathartic, was, like myth, marked by the absorption of the spectator by the performance and the solution was a form of theatrical representation that made possible a critical perspective on the events represented onstage. Commenting on an early production of *Die Mutter*, Brecht argued that the play "as it were took up an attitude towards the incidents shown: it quoted, narrated, prepared, and recalled" in order "to turn the impact [of the play] into an *indirect* one" ("Indirect" 57, 58). In Bakhtin's hands, the familiarisation of the world also depends on indirection, on processes of quotation and narration. But that indirection takes the particular form of laughter and the comic. It is partly a matter of historical roots; Bakhtin traces the novel back to the serio-comic genres of classical antiquity – Juvenal, Xenophon, Roman satire and so on. But Bakhtin is also making a claim about the nature of disenchantment. Laughter, he says:

is an essential factor in the creation of the *prerequisite of fearlessness* without which a realistic grasp of the world is impossible. Drawing the object closer and making it familiar, laughter delivers it into the fearless hands of free *investigative experiment* – both scientific and artistic – and the free experimental *imagination* that serves the goals of such experiment. ("Роман как литературный жанр" 627)

In a later text he will even go so far as to comment on "[t]he extraordinary love of *Galileo for the comic, even for the grotesque*", hoping this detail will cement the link between experimental science and literary comedy ("Дополнения и изменения к 'Рабле'" 108). That one of Brecht's most significant late plays is *Life of Galileo* is a happy coincidence for my argument. But the necessity of laughter points to what makes Bakhtin's familiar world different from what he himself calls "the superficial realism of external verisimilitude" ("К вопросам теории романа" ["On Questions in the Theory of the Novel"] 565), i.e., the naturalistic description of places, people and

events. Or, as Brecht put it with characteristic bluntness: "the so-called sensuous mode of writing – where one can, smell, taste and feel everything – is not automatically to be identified with a realistic mode of writing" ("Popularity" 82). For the familiar is not the *usual* or the typical. On the contrary: familiarity, in Bakhtin's conception, means the ability and willingness to defy social mores, to use imagination, play, experiment and outright provocation to explore the spontaneous possibilities of peoples and situations. When Bakhtin speaks of free investigative experiment he is not talking about the observation of statistical regularities: he is more interested in the knowledge of things and people gained through Surrealist juxtaposition and Cubist montage. In notes he prepared for the revision of his Rabelais book, Bakhtin explicitly links "the familiar speech and familiar thought" one finds in popular-festive laughter to the experiments of the Cubists and Surrealists ("Дополнения и изменения к 'Рабле'" 118-19). In this context it is worth recalling how, according to Bakhtin, artistic atmosphere, the structure of a novel, functioned in Dostoevsky's work:

Not a single element of such an atmosphere can be neutral: everything must touch the hero to the quick, provoke him, interrogate him, even polemicise with him and taunt him; everything must be addressed to the hero himself, turned towards him, everything must feel like *a discourse about someone present*, like the discourse of a 'second' and not a 'third' person. (*Проблемы* 70)

The familiarising writer or artist uses, you could say, third person forms (plots, description, the painted surface and sculptural assemblage) to do second person work: to urge or coax the subject or object to reveal itself. And in this sense, Bakhtin's implicit version of modernism draws a straight line from Dostoevsky to the Surrealists.

The science about which Cassirer philosophised was natural, not social science, and it is doubtful he would have had much sympathy with Bakhtin's aesthetic positions (in literary matters, Goethe was more to his taste). But, insofar as the symbolic form of what Cassirer called theoretical science was systematically opposed to mythical symbolism, it furnished a model for novelistic discourse. Cassirer argued that science is the field in which the symbol truly finds itself, grasps itself as a kind of tool we use to configure the world rather than copy some part of it. Science, Cassirer says, "knows that the symbols it employs are *symbols* and comprehends them as such" (*Symbolic Forms: Myth* 26). When Cassirer complains about the delusions of myth, he fixes on the mythic sense of omnipotence and immediacy, the sense in which mythic practice assumes an immediate and total efficacy, a magical power that does not countenance delay or obstruction. Cassirer's retort is worth quoting in full. "For all true freedom of action," he claims, "presupposes an inner limitation, a recognition of certain objective limits of action.

[. . .] only when more and more clearly apprehended intermediary links are interpolated between the mere wish and its goal, do objects and the I acquire independent values" (*Symbolic Forms: Myth* 158). He is improvising here on Hertz's famous claim that symbols in science – like the words force and mass – do not have to represent anything directly to do their job; all they have to be is useful in framing laws that will tally with the evidence ("Introduction", *Principles of Mechanics*). Cassirer has put Hertz's tune in an ethical key, however: the use of concepts not only allows us to penetrate beneath the surface of things, to grasp the processes and structures that give rise to the phenomena we experience, but also provides the subject with a kind of formative power, a power to rearrange the world rather than be awed by its presence.

The case is made vividly in an essay Cassirer wrote a few years after the *Philosophy of Symbolic Forms* on the topic of form and technology. In that essay he makes a direct analogy between the use of tools and the use of language, both serving as the intermediary links that establish distance between desire and its goal or object. It is characteristic of technological activity, which embraces both tool and language-use that "[s]uccess demands that it intervene in an originally foreign order," an order that separates the goal or object from the will seeking to affect it ("Form and Technology" 29). The result is a freedom of action lacking in myth, "In the tool and its application, however, the goal sought-after is for the first time moved into the distance. Instead of looking spellbound at this goal, the human being learns to 'fore-see' it" (31).

It is in novels that literature "knows that the symbols it employs are *symbols* and comprehends them as such" (Cassirer, *Symbolic Forms: Myth* 26). It is the achievement of the modern novel to effect a "separation between intention and language, thought and language, expression and language", which allows one to use words mediately, just as scientific concepts represent the world at a distance (Bakhtin, "Слово в романе" 123). Bakhtin means, locally, that novels often get people, or their narrators, to mean more than they say, that an ironic and stylising distance often pries open the join between particular symbols and the intentions with which people use them. More globally he meant, in a notebook from the late 1930s, that "[t]here cannot be an authentic and mature culture – artistic, social, everyday – without some element of irony and self-mockery" ("К вопросам теории романа" 574).

The freedom that Bakhtin habitually associated with novelistic writing was not freedom from external, imposed authority, but the freedom Cassirer thought humans had in their grasp when they chose to grasp everything through functions and tools. Ironic, stylising distance is not a negative phenomenon for Bakhtin, merely a matter of unmasking and bringing down to earth. The separation between intention and linguistic embodiment makes possible more complex intentions and a permanent process of intentions transcending their linguistic means. "Discourse lives outside itself," as he remarked, "in its living directedness towards the object" (Bakhtin, "Слово в романе" 45).

That inevitable self-transcendence reflects a distinctive conception of time, which is the final scientific element Bakhtin incorporates into his theory. Cassirer had argued that in myth, time was made substance by being qualitatively differentiated, most strikingly in terms of the distance between an originating past and a merely transitory present: "for mythical time there is an absolute past [. . .] a rigid barrier divides the empirical present from the mythical origin" (*Symbolic Forms: Myth* 106). The achievement of science was not so much to revalue the present, in all its transitoriness, but to search for order by means of time, to think of time as the form of change. A scientific view of time sees in it the "eternally unchanging fundamental law of the universe" (*Symbolic Forms: Myth* 131). It is a development which, according to Cassirer, reaches its climax in Kepler's studies of planetary motion – a field awash with mythic forces – when time assumes the role of a variable used for the measurement of change and motion, and is thus "imbued with the concept of function" (*Symbolic Forms: Myth* 138). Once mathematised, time figures not as qualitative and not as the homogeneous empty space Benjamin imagined, but as what Cassirer calls pure relation, an element in the construction of the functions and laws that determine the world's path.

There is a hint of this conception in "Слово в романе". The usual focus on the text's praise of multilingualism has obscured the actual work the novel is assigned in the essay. Linguistic variation, multiple styles and so on: they are already there in the world, and they had been amply recognised in the linguistic scholarship of Bakhtin's

day. The novel's real job was to infuse these styles with "historical becoming" (79), to, as Bakhtin colourfully put it, "submerge [them] in social heteroglossia" (80), so that they would acquire a developmental momentum. "Behind every utterance in an authentic novel," Bakhtin says, "one senses the spontaneous force of social languages, with their inner logic and inner necessity" (110). The point is organising the words in the text of a novel so that they acquire the same generative drive as is possessed by theoretical science.

But the parallel between historical becoming and the scientific conception of the present only becomes explicit in those later studies of the novel: in his essay on the chronotope, in two long notebooks on the novel, and in the lectures he gave at the Gorky Institute in 1940 and 1941, particularly the second, "Роман как литературный жанр". One can point to a harbinger of what is to come in the notes Bakhtin made of Cassirer's myth book, which have been transcribed and published. Bakhtin is following Cassirer's narrative of how religious thought, particularly the writings of the Hebrew Prophets, and Greek philosophy liberate time from myth. He makes a special point of emphasis on the "*feeling for the future*" ("Conspectus" 811) Cassirer sees in the Prophetic writings, and then a few pages later, lights on a paragraph where Cassirer talks about a "a specific *feeling for the present* grows: in it consciousness gives itself to the moment, but is not possessed by it, it does not fall under its power, it is free in it" ("Conspectus" 815; the passage is taken from Cassirer, *Symbolic Forms: Myth* 136). Feeling for the future, feeling for the present: these two phrases, which Bakhtin underlines, become the fulcrum point for the novel as he describes it a few years later. They lead directly to his claim, in "Роман как литературный жанр", that the novel is distinguished, indeed, defined as the genre of contemporaneity, embodying a new structure of time.

That new structure is defined in opposition to the epic throughout the essay. The epic is tied to the representation of an absolute, mythical past, ontologically separate from the present. The novel, on the other hand, is constructed "in the unfinished event of contemporaneity", everything in it is placed "in a zone of contact with the unfinished present, and, consequently, with the future" ("Роман как литературный жанр" 640). What was before celebrated as a revolution in the fate of discourse is now "a revolution in the hierarchy of times [. . .] *The present*, in its so to speak 'totality' (although it is, precisely, something not totalisable), is in principle and in essence unfinished: by virtue of its essence it demands continuation, it moves into the future [. . .]" (633). When Bakhtin says this present is "a grand revolution in the creative consciousness of humankind," he links the human spontaneity that Cassirer had bound to the formative power of symbols, epitomised in the functional concepts of science, to the conception of time Cassirer had seen evolving in modern astronomy (643). Just as science is driven forward by its pursuit of the inaccessible thing-in-itself (in Neo-Kantianism the thing-in-itself is a regulative idea, a virtual point towards which the scientist is always reaching), so the contemporaneity embodied in the novel is driven forward by ethical pursuits, by the idea of a Messianic order of justice and love. In both spheres a feeling for the future is meant to remake the world as an unfinished present, pulled along by an irresistible force.

Cassirer's philosophy made it possible for Bakhtin, who inherited Dostoevsky's hostility to social science, to think of the novel as a means of knowing the social world. Functional concepts were the building blocks for the laws of natural science, which revealed the processes that gave rise to the phenomenal nature we experienced. Images of languages – distanced and ironised – were the building blocks of novels, revealing the unfinished, historical present beneath the apparent solidity of things and people. In both cases the represented world is distinguished by its unfinishedness and the degree

to which it demanded the constant striving of the subjects within it, in other words, by its orientation towards an ideal, constantly unreachable future. This futurity, which constantly breaks up and threatens the present – “A sharp feeling (a distinct and sharp consciousness) of the possibility of a completely different life” – is what makes Bakhtin and Cassirer modernists, despite their apparent conservatism (“О Флобере” [“On Flaubert”] 132). Literature could know the world, on condition that it changed our sense of its shape.

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