Gabriel Tarde

Monadology and Sociology

Edited & translated by
Theo Lorenc

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TRANSLATOR'S PREFACE

The text used for this translation is the 1895 edition of *Monadologie et Sociologie*, in Gabriel Tarde (1895) *Essais et mélanges sociologiques*, Lyon, A. Storck / Paris, G. Masson, pp. 309-389. This text is a reworked and expanded version of an article published in 1893 as 'Monads and Social Science' ('Les Monades et la Science Sociale'), *Revue Internationale de Sociologie*, vol. 1, no. 2, pp. 157-173 and vol. 1, no. 3, pp. 231-246. The earlier version corresponds to chapters I, IV, V and VI of the 1895 text. A small amount of material is in the earlier version of the text but not the later version; this is given in the notes to this translation (minor stylistic variants between the two are not noted).

Two modern editions of the original text are available: Éric Alliez (ed.), Le Plessis, Institut Synthélabo, 1999; M. Bergeron (ed.), Québec, Cégep, 2002, available at http://classiques.uqac.ca/classiques/tarde_gabriel/monadologie/monadologie.html).

These editions give no sources of Tarde's citations; J. Sarnes and M. Schillmeier's German translation (Gabriel Tarde, M*onadologie und Soziologie*, Frankfurt, Suhrkamp, 2009) gives a few but not all. I have attempted to trace all the citations, without complete success; however, it is likely that some passages marked as citations in the text are paraphrases rather than verbatim quotes. References given are to English translations where available.

Tarde uses the masculine gender throughout when referring to persons in general; the translation conforms to this usage.

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Hypotheses fingo[1]

I

The monads, children of Leibniz, have come a long way since their birth. By several independent paths, unremarked by scientists themselves, they slip into the heart of contemporary science. It is a remarkable fact that all the secondary hypotheses implicit in this great hypothesis, at least in its essentials if not in its strictly Lebnizian form, are now being proved scientifically. The hypothesis implies both the reduction of two entities, matter and mind, to a single one, such that they are merged in the latter, and at the same time a prodigious multiplication of purely mental agents in the world. In other words, it implies both the discontinuity of the elements and the homogeneity of their being. Moreover, it is only on these two conditions that the universe is wholly transparent to the gaze of the intellect. Now, on the one hand, as a result of having been sounded a thousand times and judged unfathomable, the abyss which separates movement and consciousness, object and subject, the mechanical and the logical, has at length been called once more into question, relegated to the status of an appearance, and finally denied altogether by the bravest souls, who have been echoed from every quarter. On the other hand, the progress of chemistry leads us to affirm the atom and to deny the material continuity which the continuous character of the physical and living manifestations of matter, extension, movement and growth

1. [Trans. Note: The epigraph references Newton's famous tag '*hypotheses non fingo*' (I make no hypotheses), in the *General Scholium* to the *Principia Mathematica*.]

seem superficially to reveal. There is nothing more profoundly surprising than the combination of chemical substances in definite proportions, to the exclusion of any intermediate proportion. Here there is no evolution and no transition: the dividing lines are clear and stark; and yet hence arises everything which is supple and harmoniously graduated in phenomena, almost as if the continuity of nuances were impossible without the discontinuity of colours. The path of chemistry is not the only one which seems to lead us in its progress to the monads; so too do physics, the natural sciences, history, and even mathematics. As Lange says: 'Of great importance, not only for this demonstration, but also especially for its far-reaching consequences, was Newton's assumption that the gravitation of a planet is only the sum of the gravitation of all its individual portions. From this immediately flowed the inference that the terrestrial bodies gravitate towards each other; and further, that even the smallest particles of these masses attract each other'.[2] With this viewpoint, which was much more original than it seems today, Newton broke, and indeed pulverized the individuality of the celestial body, which had until then been regarded as a superior unity whose internal relations bore no resemblance to its relations with other bodies. Great strength of mind was required to resolve this apparent unity into a multiplicity of distinct elements linked to each other in the same way as they are linked to the elements of other aggregates. The beginning of the progress of physics and astronomy can be dated to the day when this viewpoint replaced the contrary prejudice.

In this respect the founders of cellular theory have shown themselves to be Newton's true heirs. In the same way they have broken apart the unity of the living body, they have resolved it into a prodigious number of elementary organisms, isolated and egoistic, eager (*avides*) to develop themselves at the expense of the exterior, where the exterior includes their neighbouring brother cells as well as the inorganic particles of air, water, and all other substances. Schwann's[3] position on this point has been no less fertile than Newton's. Thanks to his cellular theory, we know that 'there is no vital force, as a principle distinct from matter, either

2. [Trans. Note: Ludwig Lange (1863-1936), *History of Materialism: And Criticism of its Present Importance*, vol. I, trans. E. C. Thomas, London, Kegan Paul, Trench, Trübner, 1925, p. 311.]

3. [Trans. Note: Theodor Schwann (1810-1882) was one of the key early proponents of the theory that all living organisms are made up of cells.]

in the entirety of the organism, or in each cell. *All phenomena of vegetable or animal life must be explained by the properties of atoms* [let us say of the ultimate elements from which atoms are composed], whether these be the known forces of inert nature *or forces hitherto unknown*'.[4] There is surely nothing more positivist or better conformed to a healthy and serious science than this radical negation of the vital principle, against which vulgar spiritualism likes to protest. However, it is clear where this tendency will lead us, if drawn to its logical conclusion: to the monads, which fulfil the most daring promises of Leibnizian spiritualism. Like the vital principle, illness, which was treated as a person by the ancient medical writers, has been pulverized into a great number of infinitesimal disorders of the histological elements. Moreover, thanks primarily to the discoveries of Pasteur, the parasitic theory of illness, which explains these disorders by means of the internal conflicts of miniscule organisms, finds more general application every day, and indeed excessively so, to the point where it should provoke some reaction. But parasites, too, have their parasites. And so on. The infinitesimal again!

The new theories in chemistry have been formed along analogous lines. As Wurtz says: 'This is the new and essential point. *The properties of the radicals are referred to the elements themselves*. Formerly they were considered as a whole. To the radical regarded as a whole was attributed the power of combining with or of being substituted for simple bodies. This was the fundamental point of view of Gerhardt's theory of types. We now go further. To discover and define the properties of radicals we go back to the atoms of which they are composed'.[5] This eminent chemist's thought goes further than our remarks above. The examples which he cites demonstrate that, among the atoms of a radical, there is one in particular on whose atomicity and as yet unsatisfied avidity, outlasting the saturation of all the others, the combination which is produced ultimately depends.

Like stars, like living things, like illnesses, like chemical radicals, nations are nothing more than entities which have long been

4. [Trans. Note: These two sentences are marked as a citation in the text, but appear to be not a verbatim quote but a summary paraphrase of the final section ('Theory of the Cells') of T. Schwann, *Microscopical researches into the accordance in the structure and growth of animals and plants*, trans. H. Smith, London, Sydenham Society, 1847.]

5. [Trans. Note: A. Wurtz, *The Atomic Theory*, trans. E. Cleminshaw, London, Kegan Paul, 1880, pp. 265-266 (Tarde's emphasis).]

taken for true beings in the ambitious and sterile theories of so-called philosophical historians. Has it not, for example, been sufficiently repeated that it is foolish to seek the cause of a political or social revolution in the influence of writers, of statesmen, or of any kind of instigator, and that it rather springs spontaneously from the genius of the race, from the bowels of the people, that anonymous and superhuman agent? But this convenient point of view, which consists in mistakenly seeing the creation of a new being in a phenomenon generated by the encounter of real beings (albeit a genuinely new and unforeseen phenomenon), can be upheld only provisionally. Having been rapidly exhausted by the literary abuses it has suffered, it is conducive to a serious return towards a clearer and more positive form of explanation, which accounts for a given historical event only by individual actions, and particularly by the action of inventive men who served as a model for others and reproduced thousands of copies of themselves, like mother-cells of the social body.

This is not all: these ultimate elements which form the final stage of every science, the social individual, the living cell, the chemical atom, are ultimate only from the point of view of their particular science. They themselves, as we know, are composite, not excepting the atom itself which, according to Thomson's hypothesis of the 'vortex atom',[6] the most plausible or the least unacceptable of the conjectures which have been attempted on this subject, would be a whirling mass of simpler elements. Lockyer's[7] studies of solar and stellar spectra have led him to suppose—and the conjecture seems probable—that certain *weak lines* observed by him are due to the elements of which are composed certain substances that on our planet are regarded as incomposite.

Scientists who live in daily contact with the so-called elements have no doubt of their complexity. While Wurtz shows himself to be favourable to Thomson's hypothesis, Berthelot says for his part: 'The deeper study of the elementary masses which, on our current understanding, constitute the simple bodies leads every day more and more to an understanding of them not as indivisible atoms, homogenous and admitting of movement only as a whole,

6. [Trans. Note: J. J. Thomson's 'nebular' or 'vortex atom' theory, prior to the discovery of the electron, posited that the atom consisted of nebular 'vortices' in the ether. As of the writing of *Monadology and Sociology*, little was known of the internal structure of the atom.]

7. [Trans. Note: Norman Lockyer (1836-1920), astronomer and pioneer of astronomical spectroscopy.]

but as *highly complex* constructions, furnished with a specific architecture and animated by *highly varied internal movements*'.[8] Physiologists, for their part, do not maintain that the protoplasm is a homogenous substance, and judge only the solid part of the cell to be active and truly living. The soluble part, almost in its entirety, is nothing but a storehouse for fuel and nourishment (or a mass of excrement). Moreover, a better understanding of the solid part itself would doubtless lead us to eliminate almost everything from it. And, where will this process of elimination finish if not at a geometrical point, that is, at pure nothingness? Unless, as we will explain below, this point is a centre. And, in fact, in the true histological element (which is designated only improperly by the word 'cell') what it is essential to take into account is not its limit or envelope, but rather the central focus whence it seems to aspire to radiate indefinitely until the day when the cruel experience of external obstacles obliges it to close in on itself in order to preserve its being; but we are getting ahead of ourselves.

There is no way to call a halt to this descent to the infinitesimal, which, most unexpectedly, becomes the key to the entire universe. This may explain the growing importance of the infinitesimal calculus; and, for the same reason, the stunning and rapid success of the theory of evolution. In this theory, a specific form is, as a geometer would say, the integral of innumerable differentials called individual variations, which are themselves due to cellular variations, whose basis consists of a myriad of elementary changes. The source, reason, and ground of the finite and separate is in the infinitely small, in the imperceptible: this is the profound conviction which inspired Leibniz, and continues to inspire our transformists.

But why should such a transformation, which is incomprehensible if presented as a sum of definite and discrete differences, be readily understood if we consider it as a sum of infinitely small differences? We must show first of all that this is a real contrast. Suppose that, by some miracle, a body disappears and is annihilated from the place A where it was, then appears and *comes back into being* at the place Z a metre away from A, *without having traversed the intermediate positions*: such a *displacement* is beyond the power of our mind to grasp, while we would never be astonished to see this body move from A to Z along a line of juxtaposed positions.

8. [Trans. Note: Marcellin Berthelot (1827-1907), chemist. The citation has not been traced.]