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## CHAPTER FOUR

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# Susanne K. Langer on Logic as the Study of Forms and Patterns of Any Sort

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In *An Introduction to Symbolic Logic*, Langer maintains that logic, as the science of forms and patterns, “is to the philosopher what the telescope is to the astronomer: an instrument of vision.”<sup>1</sup> In fact, for Langer logic is an “indispensable tool”<sup>2</sup> for philosophy, and not just because philosophy needs correct reasoning and logic is indeed “an inestimable aid in reasoning.”<sup>3</sup> While it is well known that Langer was a professed enthusiast of logical analysis and the analytic method in philosophy, her point is more general. Langer stresses that “[a]ll knowledge, all sciences and arts,”<sup>4</sup> philosophy being no exception, have their beginning in the recognition of structures and patterns, which can help us systematize and understand our “rapidly changing, shifting, surprising world.”<sup>5</sup> Hence, philosophy requires a certain ability “to conceive of things in general, to appreciate formal relations,”<sup>6</sup> and logic is a means for philosophers to “see the world in its clear light.”<sup>7</sup> One example, Langer stresses, is that, thanks to the developments of mathematical logic, “infinity has ceased to be a magic word.”<sup>8</sup>

But in the 1920s and 1930s logic for Langer is not just a means but also “the most elementary, restricted and definite philosophical science.”<sup>9</sup> Hence, logic is a subject of study, which she pursued while claiming that she was presenting philosophical questions “with hesitation, with the discomfort which a mere logician quite properly feels in the presence of philosophical problems.”<sup>10</sup> As a philosophical science, logic is, moreover, for Langer itself a domain of philosophical investigation, as there are “philosophical problems, which arise directly from logical considerations.”<sup>11</sup>

By being conversant with different logical traditions, Langer’s reflections in logic, and on the philosophical problems logic gives rise to, famously led her to endorse two claims: first, logic should be concerned not only with propositions and propositional forms, as it was then orthodox, but rather with forms for anything that follows a pattern of any sort; second, there is nothing like *the* logical form of any thing, as any matter can be analyzed as exemplifying radically different forms.

The aim of this paper is to unfold Langer’s main reasons toward these two claims and to show how they stem from considering logic both as a tool for philosophy and as itself a subject of study and philosophical investigation.

## BEYOND THE PROPOSITIONAL

Langer stresses that “Bertrand Russell, in one of his facetious moments, defined mathematics as ‘the science in which we never know what we are talking about.’”<sup>12</sup> The same is true of what logic is for her, as it is the “*analysis of systems*, disregarding entirely the nature of their elements.”<sup>13</sup> For Langer, logic “*is the science of forms as such, the study of patterns*,”<sup>14</sup> the tracing and description of the forms exemplified by systems of elements of “experience (or Reality, or what-not)”<sup>15</sup> and of their relations. The notion of *form* or *pattern* is then for Langer central to logic, and she characterizes it by combining ideas coming from quite different logical traditions.<sup>16</sup> While she maintains that for the notions of *system* and *pattern* she is indebted to Sheffer,<sup>17</sup> she considers Whitehead and Russell’s *Principia Mathematica*<sup>18</sup> to be an “elaborate masterpiece”<sup>19</sup> and Russell to be “blessed with both candor and acumen.”<sup>20</sup> She is then happy to characterize her central notion of *form* explicitly in line with Russell’s “excellent account,”<sup>21</sup> with his “admirably lucid exposition of logical forms,”<sup>22</sup> in the following way: “[t]he logical form of a thing is the way that thing is *constructed*, the way it is put together.”<sup>23</sup> Explicitly in line with Russell,<sup>24</sup> but also with Frege<sup>25</sup> and Moore,<sup>26</sup> she endorses anti-psychologism in logic, as for Langer forms are not a “subjective ingredient; forms are found in experience, not added to it.”<sup>27</sup>

While Langer is happy to align with Russell in her characterization of form, at the same time she rejects the then “well-established”<sup>28</sup> claim, which she says was endorsed by him,<sup>29</sup> but also by Frege,<sup>30</sup> and many others, that “the study of propositions and of the relations which obtain between propositions is the only legitimate claimant to the title of ‘logistic’, and is, in fact, formal logic itself.”<sup>31</sup> She maintains that logic “certainly ... includes the *forms of propositions*,”<sup>32</sup> but should not be confined to those forms. When it comes to what “the material of logic”<sup>33</sup> is, Langer suggests following Royce:<sup>34</sup>

Josiah Royce defined logic as *the study of types of order*. This is essentially the point of view I wish to advocate, that *logic is the study of forms as such*, regardless of content (“forms” is a somewhat less restricted term than “order”).

“Orderliness and system,” says Royce ... are much the same in their general characters, whether they appear in a Platonic dialogue, or in a modern textbook of botany, or in the commercial conduct of a business firm, or in the arrangement and discipline of an army, or in a legal code, or in a work of art, or even in a dance or in the planning of a dinner. Order is order. System is system. Amidst all the variations of systems and of orders, certain general types and characteristic relations can be traced.<sup>35</sup>

So, this is the first of Langer’s famous claims coming from putting together different logical traditions: while Russell characterized the notion of logical form correctly, on what the material of logic is, we should rather follow Royce and maintain that “anything may be said to have form that follows a pattern of any sort, exhibits order, internal connection.”<sup>36</sup>

Why maintain this? Let us start from the reasons Langer provides that stem from considering logic as a philosophical tool. Logic can help our endeavors to see the world in its clear light in two equally important and related ways. First, logic, in involving “the analysis of systems *qua* systems, the discovery of relations which hold for all possible worlds ... [the] analysis of all possible things, given in abstract terms,”<sup>37</sup> “liberates the human mind from the finitude of actuality and opens to it the endless reaches of

*potentiality*,”<sup>38</sup> by also providing us with the boundary between what patterns, forms, and structures are possible, and which ones are instead impossible. Second, by the recognition of forms “we find *analogies*, and come to understand one thing in terms of another”:<sup>39</sup> logic improves our ability to represent something we are trying to understand, as a thing exemplifying a certain logical form “may be *represented* by another which has the same structure,”<sup>40</sup> and will aid our understanding of it, as “any essential configuration”<sup>41</sup> in one system will “find its analogue”<sup>42</sup> in the other system, “just as the lines and proportions of a suit are analogous to those of its paper prototype.”<sup>43</sup>

Now, if propositional forms can be taken to be “not peculiar to propositions,”<sup>44</sup> that is, can be taken to be logical forms also of things that are not propositions, those very forms or something very close to them can also be a means to understand those other domains. In 1929, Langer thinks that “[a] good case in point is the structure of music.”<sup>45</sup> While offering her set of postulates for the logical structure of music “to delimit the field in which any musical configuration whatever must necessarily lie,”<sup>46</sup> she notes that such logic “looks enough like Boolean algebra.”<sup>47</sup> Since for Boolean algebra there surely is a “propositional interpretation,”<sup>48</sup> if in logic we do not confine ourselves to propositions, propositional forms or forms very close to the propositional ones can then help us also understand music. Moreover, if there are philosophical disciplines that concern some matter that exemplifies forms very different from those propositions can be taken to exemplify, as there seem to be indeed in the domain of “emotional and aesthetic experience: the recognition of intrinsic values,”<sup>49</sup> then a logic that goes beyond propositions and then beyond propositional forms can be a tool also in those philosophical endeavors.

Langer also hints:

There is a further point of interest in this attempt to discern the purely logical structure of the musical universe—a matter of such philosophical import, howbeit of such unsubstantiated, visionary character, that I offer it as the merest suggestion: is it possible that music is not the only interpretation for this algebra, but that some logician versed in the arts, especially in arts other than music, might trace similar structures in some other form of aesthetic expression? The implication of such a hypothesis for the philosophy of art is obvious and vital. Psychology and metaphysics alike have failed so far to put aesthetics on any better basis than a purely empirical one; is it conceivable that logic might bridge the gap between those two disciplines and discover truly fundamental principles whereon to build a rational science of aesthetics? I have added this speculative paragraph with hesitation ... but add it I must, even as a fantastic hypothesis, the timid, scientific version of Schopenhauer’s bold poetic dictum, “*die Baukunst ist erstarrte Musik*.”<sup>50</sup>

So, a logic that is not concerned only with propositions is a better tool for philosophy for two related reasons, as exemplified by the case of music. First, going beyond propositions allows us to employ logical forms to understand also other subjects of inquiry, such as music. Second, if it were the case that those forms that music exemplifies were typified by all forms of aesthetic expression, a logic that goes beyond propositions could lead to something vital and of such philosophical import, that is, a rational science of aesthetics. Similarly, for Langer, in 1930 there is room to think that “ethically interested logicians will probably be the founders of scientific ethics.”<sup>51</sup> Since many philosophical domains were at that time logically unexplored, in 1930 for Langer logic then has “a significance for philosophy”<sup>52</sup> that is “incalculable.”<sup>53</sup>

For Langer, logic should go beyond propositions and propositional forms not just to become a better philosophical instrument of vision, but also for reasons that stem from considering logic as itself a subject of philosophical inquiry. For a logic that goes beyond propositions and propositional forms can account for some notions, such as the notion of meaning, which are central to it, instead of having to leave them logically undefined.

Let us see her argument concerning the notion of meaning.<sup>54</sup> First, Langer claims that meaning “in its profoundest sense is one of the fundamental notions of logic.”<sup>55</sup> The reason is the following. Langer stresses that “[t]he only way we can express logical facts is through the employment of symbols,”<sup>56</sup> that is, logic is not “strictly a *mere* ‘string of marks,’”<sup>57</sup> logic is *symbolic*. While a logical symbol “is not assumed to have any specific meaning ... it exemplifies things which are true of many systems.”<sup>58</sup> Since logic is symbolic, then meaning is crucial to it, as meaning is “that in virtue of which we have a *symbolism* at all,”<sup>59</sup> and that in virtue of which we can distinguish “between a mark on paper which is a *symbol* and one which is due to spilled ink or the murder of a mosquito.”<sup>60</sup> Langer urges that the question as to what object a word refers to is not a logical question: in logic we do not establish “the actual forms in which [meaning] does occur,”<sup>61</sup> as in this way logic would be trafficking with “real poets, lovers, unicorns”<sup>62</sup> and would lose its formal character. But still there is a logical question and, Langer maintains while quoting Russell, it is this: “What relation must one fact (such as a sentence) have to another in order to be *capable* of being a symbol for that other?”<sup>63</sup> So there is a question about meaning that is a logical question, and it is the one that concerns the “logical prerequisites for meaning,”<sup>64</sup> “the logical situations in which meaning is possible,”<sup>65</sup> “the formal possibility of meaning,”<sup>66</sup> the “structure of symbolism.”<sup>67</sup>

Second, for Langer the account of the formal possibility of meaning put forward by Wittgenstein in his *Tractatus Logico-Philosophicus* (1921), which she describes as an “extraordinary prophetic gospel,”<sup>68</sup> but also by Whitehead, in *Symbolism, Its Meaning and Effect* (1927), is “on the whole, a true account.”<sup>69</sup> According to that account, Langer stresses, at the logical basis of meaning there is a “common element of formal structure,”<sup>70</sup> there is “a system related to another system.”<sup>71</sup> For the propositional system, for example, meaning, at least in most of the cases, “must lie somewhere else than in the formal properties of propositions”:<sup>72</sup> the relation should be toward “something *outside* the system which is the proposition,”<sup>73</sup> as most pieces of language do not mean pieces of language but something extra-linguistic.

But Langer then urges that meaning is therefore “definitely outside the scope of *Principia Mathematica*,”<sup>74</sup> and of any logic according to which the material of logic is exclusively propositional. If we take logic to be concerned only with propositional forms and the system of propositions, and we take the basis of meaning to be a relation to *another* system, “[s]uch logical problems as the nature of meaning ... remain perfectly insoluble”<sup>75</sup> and we cannot but follow Wittgenstein’s dictum, “There is indeed the inexpressible. This shows itself; it is the mystical,”<sup>76</sup> and we cannot but end “in perfect alogicism,”<sup>77</sup> so that meaning “lives in the underworld (or superworld?) of Mysticism.”<sup>78</sup>

Langer then remarks that it is “rather unfortunate that logic should be characterized by certain arbitrary alogical elements,”<sup>79</sup> and should be governed by some “*deus ex machina*,”<sup>80</sup> as this is a “metaphysical dead-stop,”<sup>81</sup> adding that “Mysticism has ever been the graveyard for logical doctrines.”<sup>82</sup> A logic able to bring the notion of meaning into its scope is then to be preferred, and this, Langer maintains, is precisely what can be done if we follow Royce on what the material of logic is. For:

if we allow our logical interest to cover forms of every sort, merely as forms, we shall find that there are innumerable systems, or patterns, in the world, of which the propositional system is merely a special one; that these patterns may be compared, and the systems which exemplify them may be brought into relation with one another, and the traditional “logical” notions may be brought into the scope of logic as we include not only the relations of elements within one system, but the relations of certain systems to each other (relations such as similarity, analogy, etc.) ... If we treat the system of propositional forms as merely one formal system which may be compared with other logical structures, I think we shall ... find perfectly definite relations between propositional structures and other structures ... Every thing, situation, idea, or what not, has a logical pattern; propositions follow such a pattern, and, as Royce has pointed out ... all other things, from dialogues to dinners, have patterns of their own.<sup>83</sup>

The Roycean logic can then account for the possibility of “the sign-function of the barometer”<sup>84</sup> and the possibility that “the system of physics ‘describes’ the world we know through sense,”<sup>85</sup> that is, the possibility that “its formulae *mean* our world.”<sup>86</sup>

So, Langer concludes, the correct account, put forward by Wittgenstein and by Whitehead, of the logical basis of meaning “really presupposes the less restricted view of logic.”<sup>87</sup> Wittgenstein should have combined differently his account of the logical basis of meaning and his own proposition:

4.014 The gramophone record, the musical thought, the score, the waves of sound, all stand to each other in that pictorial internal relation, which holds between language and the world. To all of them the logical structure is common.<sup>88</sup>

For in a less restricted view of logic, like the Roycean one, whose material includes the gramophone record, the musical thought, the score, and the waves of sound, the logical prerequisite of meaning, as correspondence between systems, is not outside the scope of logic.

As shown by her argument about the notion of meaning,<sup>89</sup> Langer then finds a motivation for a less restricted view of logic also by considering logic as a source of philosophical problems and then in the fact that a less restricted view of logic, as she suggests, “promises to save some important logical relations from their present metaphysical limbo.”<sup>90</sup>

## RADICALLY DIVERSE FORMS

The Roycean move of going beyond propositional forms is not the only famous claim Langer put forward concerning the Russellian notion of logical form. Again, by putting together different logical traditions, from Whitehead<sup>91</sup> and Sheffer<sup>92</sup> she also inherited the idea that “no structure is absolute, no relation peculiar to the material in hand, no analysis of fact the only true one ... Living experience may come to us in most various forms.”<sup>93</sup> For Langer “*the* form of an object, if taken to denote a single absolute notion, suffers from ... non-significance,”<sup>94</sup> as any thing might be taken to exemplify “radically different forms.”<sup>95</sup> For example,

[i]f we take points as our basic terms we will have other postulates and theorems than if we started with volumes, or still more, if we started with notions such as “space-time events” or with Leibnitzian “monads.” Yet our various systems of geometry, of physics, and of metaphysics are all designed to describe the actual world, that is

to say, they are all supposed to present a pattern which is to be found in the actual world.<sup>96</sup>

So, let us go back to Langer's claim above of how knowledge of forms allows us to understand one thing in terms of another. It should not be understood as stating that knowledge of forms will allow us to see *the* logical form of the matter under consideration. As Langer urges "[i]ngenuity in thinking—whether in practical, scientific, or philosophical thinking—is primarily the art of ... discovering new ways in which a familiar thing may be treated so as to reveal some hitherto unknown relation."<sup>97</sup>

Also in the case of this claim of hers, according to which "there is no such things as *the form*,"<sup>98</sup> "form' always means *a form*,"<sup>99</sup> Langer thinks that it is motivated both by considering logic as a tool and by an investigation into logic as a philosophical science. Let us start again from Langer's points stemming from considering logic as the philosopher's telescope. In a review she published in 1930, Langer marks the difference between *philosophical logic* and *logical philosophy*, which, she stresses, "have nothing in common except words."<sup>100</sup> Philosophical logic, she explains, "begins with a metaphysical attitude, and employs alleged logical principles for its defense"<sup>101</sup> and, in doing this, it is not a "legitimate way in which the recent advances of logic can influence metaphysics."<sup>102</sup> In order for logic to genuinely be a tool when the metaphysical and philosophical endeavors will take place, it cannot presuppose any metaphysical claim, it cannot rely on any metaphysical assumption. Any "metaphysical notion," as she highlights, "must be an unwelcome stranger in the logical field,"<sup>103</sup> and "metaphysical gods"<sup>104</sup> are "not to be worshipped openly in the realm of logic."<sup>105</sup> For example, logic should not tell us the answers to questions such as the question, typical of Langer's time, as to "whether what is 'given' in our experience is a property or a relation."<sup>106</sup> If it did, it could not be used as a metaphysical tool, as the "ante chamber"<sup>107</sup> of metaphysics, as it could tell us that only if it was already making some metaphysical assumptions. Hence,

"[t]he only legitimate way in which the recent advances of logic can influence metaphysics is by giving rise to a *logical philosophy*, such as Professor Whitehead ... represents ... logical philosophy begins with a single-minded and rigorous devotion to logic, from which, by long acquaintance, a certain new metaphysical outlook is born."<sup>108</sup>

A logic that is confined to one form as *the* logical form for some thing is already making some metaphysical assumptions concerning that thing and then in assuming that there is *the* logical form, such a logic has moved from logical philosophy to philosophical logic. Only if we reject the claim that there is *the* logical form, can logic be a genuine tool for philosophers and can it indeed be the case that "every advance in logic is a gain in metaphysical insight."<sup>109</sup>

Also in the case of her rejection of the claim that there is anything like *the* logical form for some thing, Langer's reasons do not stem only from considering logic as a tool. In her review of Langer's *An Introduction to Symbolic Logic*, Susanne L. Stebbing observes:

Controversial issues are avoided, which is all to the good from the point of view of the elementary student. Here and elsewhere, as for example in her discussion of "logical form," Dr. Langer may give the student a misleading impression that there are no real difficulties to be overcome. Whilst it is desirable that these difficulties should not be discussed in an elementary introduction to the subject, it would have been better to hint that they exist.<sup>110</sup>

While it is true that in *An Introduction to Symbolic Logic* Langer does not tackle the issues that the notion of logical form gives rise to, in that very book, and among the philosophical problems, which arise directly from logical considerations, she mentions “the relativity of language, logical patterns,”<sup>111</sup> and “the problem of form and content.”<sup>112</sup> Moreover, already in her dissertation,<sup>113</sup> Langer proves to be well aware of the philosophical problems that spring from the notion of form and in particular the problem of relating the form of anything to its content, which seems indeed to lead to a logical paradox. For Langer, as shown by her paper “Form and Content: A Study in Paradox” (1926), the rejection of the notion of *the* logical form also finds its motivation in the ability of such a rejection in aiding us to avoid that logical paradox. Here is the way in which she presents the paradox:

At first sight it appears obvious that there can be such a relation; but if there is, then it can be expressed symbolically, as  $R(f, c)$ ; and thereby we have transformed our empirical content into a term of the formal structure, *i.e.*, we have formalized it, and are no longer dealing with the non-logical content. Thus it seems there can be no such thing as the relation between the form of a thing and the content of that form, since this relation would entail a true paradox.<sup>114</sup>

Clearly, if we reject the notion of *the* form, there is nothing like the relation between *the* form of a thing and its content, as for that relation we would need there to be its relata, but one of them, *the* form, is just not there.

It should be said, though, that, as Langer knew, this is not the end of a solution to the problem. For, as Langer stresses, one might hold that there is *the* form, as “the class of all possible forms under which the object in question can be conceived.”<sup>115</sup> But, Langer maintains, there is nothing like the class of all possible forms either. In order to have such a class, we would need “a single system wherein all these forms are conceived,”<sup>116</sup> we would need a language in which we could have all these forms together. But even though “there are types of logical language, which yield various types of system,”<sup>117</sup> for Langer each “[l]anguage ... determines by its structure just the sorts of ... forms, which can be expressed in it. And whatever object we are talking about, we are limited to some definite language, with its idiosyncrasies of structure, and consequently we are limited as to the things we can say.”<sup>118</sup> So, in order for there to be the class of all forms we would need the ability to have a language in which we could speak about *all* those forms together. But, Langer maintains, languages all have themselves structures, have themselves forms, which will inevitably make each language unable to speak about some of the forms. Hence, there is nothing like the class of all forms. So, for Langer, there is nothing like the relation between *the* form of an object and its content as a *relatum* is missing, since there is neither *the* one form nor *the* class of all possible forms. Without the relation, the paradox that relation would lead to is then avoided.

For Langer, some other relations are there, though, but for them the paradox does not arise. There are the relations between *a* form of an object, the form it takes in a particular logical structure, and *a* content, which is “that which is not given as part of *this* logical structure.”<sup>119</sup> But Langer says it is clear that each of these relations “abstruse and complex as it may be, exhibits no true paradox.”<sup>120</sup> Langer does not explain this point in detail, but it might be taken to be the following. The paradox, concerning these relations, if there were one, would be: on the one hand, if there were these relations, it would be possible to formalize them; on the other, if we formalize them, we have formalized content, and then it is not content anymore. But then there is no paradox for these relations because there is no reason to think that it should be possible to formalize the

relation between *the form that an object takes in a structure* and *that which is not given as part of that logical structure*. There is no reason to think that it can be formalized in the very structure, as there is no reason to think that in that structure; we can formalize *that which is not given as part of that logical structure*. Moreover, there is no reason to think that it can be formalized in any of the other structures, as there is no reason to think that in them we can formalize *the form that an object takes in the original structure*.

It can be disputed whether Langer genuinely avoided the paradox that the relation between the form of a thing and its content seems to lead to, because it can be disputed that she genuinely proved that there is nothing like the class of all forms by applying an observation she herself makes in *The Practice of Philosophy* (1930). While claiming that “[i]f now we would describe the location of any place, we must use one geometry or another,”<sup>121</sup> she adds in a footnote: “We could, of course, assert propositions *about the systems* and *involve* propositions from both of them, but we could not *use* them.”<sup>122</sup> So, one might hold that Langer has not genuinely proved that there can be no language in which all forms are *involved*, even though she might be perfectly correct that there is no language in which all forms are expressible, that is, in which the propositions that can be *used* can together exemplify all forms. Maybe, one can urge, there is a language, with a particular structure for sure, in which we can nonetheless name all forms, in which we could then speak about all forms together, and the class of all forms would follow. Still, if *the form* cannot be taken to be “the class of all possible forms under which the object in question can be conceived,” either because the former is not tantamount to the latter or because the latter is to be rejected for one reason or another, Langer did genuinely solve the paradox thanks to her rejection of *the form*. Be that as it may,<sup>123</sup> Langer’s reflections on the paradox surely show how her motivations for going beyond *the* logical form also stem from considering logic as itself a source of controversial issues, of whose existence she was indeed well aware.

## CONCLUSION

Langer maintained that logic “becomes useful and important to the philosopher”<sup>124</sup> only after she has “really grasped its technique,”<sup>125</sup> and so “we must understand its power and difficulties thoroughly before we can use it,”<sup>126</sup> and “we must work with a genuine interest in our restricted, abstract subject.”<sup>127</sup> In the 1920s and 1930s, Langer did exactly what she then thought a philosopher must do and, as her reflections on the notion of form and pattern show, she showed all her genuine interest in logic. From then on, she aimed at increasing “our understanding of any forms or facts which are hidden in the kaleidoscope of experience.”<sup>128</sup>

## NOTES

1. Susanne K. Langer, *An Introduction to Symbolic Logic* (New York: Allen and Unwin, 1937), 41.
2. *Ibid.*, 40.
3. *Ibid.*, 41.
4. *Ibid.*, 21.
5. *Ibid.*, 22.
6. Susanne K. Langer, “Algebra and the Development of Reason,” *The Mathematics Teacher* 24, no. 5 (1931): 288.

7. Langer, *An Introduction to Symbolic Logic*, 41.
8. Susanne K. Langer, "A Logical Analysis of Meaning," (PhD diss., Radcliffe College, Cambridge, MA, 1926), 11.
9. Susanne K. Langer, *The Practice of Philosophy* (New York: Henry Holt, 1930), x.
10. Susanne K. Langer, "A Set of Postulates for the Logical Structure of Music," *The Monist* 39, no. 4 (1929): 570.
11. Langer, *An Introduction to Symbolic Logic*, 334.
12. Langer, "Algebra and the Development of Reason," 292–3.
13. Langer, "A Logical Analysis of Meaning," 2.
14. Langer, *The Practice of Philosophy*, 83.
15. Langer, "A Logical Analysis of Meaning," 30.
16. As Juliet Floyd stressed: "because she was fluent in German, Langer was able to access the works of Husserl and Frege, as well as Wittgenstein and Russell ... Her work forms a bridge between the American Idealist tradition in which the status of logic, intentionality, and the categories are central (Royce, Peirce, Sheffer, and C. I. Lewis), the British tradition of Russell and Whitehead (Whitehead was her advisor), the German phenomenological tradition of Husserl, and the neo-Kantian tradition of Cassirer that investigates meaning through analysis of symbolic forms" (Juliet Floyd, "Recent Themes in the History of Early Analytic Philosophy." *Journal of the History of Philosophy* 47, no. 2 (2009): 199). See also Sander Verhaegh's Chapter 1 in this volume, "Susanne K. Langer and the Harvard School of Analysis".
17. Langer, "A Logical Analysis of Meaning," iii, 27, 48–52, 74. She refers to Henry M. Sheffer, *The General Theory of Notational Relativity* (manuscript, 1921, Harvard Widener Library); Langer, *The Practice of Philosophy*, 97f.5. Langer also claims that she had the "unusual opportunity, to discuss the question of logical systems with Prof. Whitehead" (Langer, "A Logical Analysis of Meaning," iv).
18. Alfred N. Whitehead and Bertrand Russell, *Principia Mathematica*, 2nd edn (Cambridge: Cambridge University Press, 1925/7).
19. Langer, "A Logical Analysis of Meaning," 57.
20. Susanne K. Langer, "Form and Content: A Study in Paradox," *Journal of Philosophy* 23, no. 16 (1926): 436.
21. Langer, *An Introduction to Symbolic Logic*, 31, where she refers to Bertrand Russell, "Logic as the Essence of Philosophy," in *Our Knowledge of the External World* (London: The Open Court Publishing Company, 1914), 43.
22. Langer, *The Practice of Philosophy*, 91. Also here, she refers to Russell, "Logic as the Essence of Philosophy," 42 ff.
23. Langer, *An Introduction to Symbolic Logic*, 24. It is worth stressing that this characterization is of what a form of a thing is with respect to that thing. But out of this characterization, we cannot evince anything about the metaphysics of forms. For example, we are completely in the dark concerning what kind of thing a way is. For a discussion of the metaphysics of forms in relation to what Langer says about them, see Kris McDaniel, "Ontology and Philosophical Methodology in the Early Susanne Langer," in *Innovations in the History of Analytical Philosophy* (London: Palgrave Macmillan, 2017), 280–3.
24. Langer refers to Bertrand Russell's "Mathematics and the Metaphysicians," 74, in *Mysticism and Logic* (London: Allen and Unwin, 1917), and §37 of *The Principles of Mathematics* (London: Allen and Unwin, 1903) already in her dissertation "A Logical Analysis of Meaning," 16f.7, and 66f.27.

25. Langer regards Gottlob Frege to be the first to state that logical forms and actual judgments are “separable.” See Langer, “A Logical Analysis of Meaning,” 16. She refers to the preface of his *Grundgesetze der Arithmetik* (1893/1903).
26. Langer refers to George E. Moore’s “The Nature of Judgment” (*Mind* 8, no. 30 (1899): 179) in “A Logical Analysis of Meaning,” 38–9.
27. Langer, *The Practice of Philosophy*, 143.
28. *Ibid.*, 57. In favor of this point, she refers to Clarence I. Lewis, *A Survey of Symbolic Logic* (Berkeley: University of California Press, 1918), 354.
29. Langer, “A Logical Analysis of Meaning,” 57. She refers to Whitehead and Russell’s *Principia Mathematica*, vol. 1: Introduction; Langer, “A Logical Study of Verbs,” *Journal of Philosophy* 24, no. 5 (1927): 122–3.
30. Langer, “A Logical Analysis of Meaning,” 54, 57, 61f.17.
31. *Ibid.*, 57.
32. Langer, *The Practice of Philosophy*, 85.
33. Langer, “A Logical Study of Verbs,” 122.
34. Langer, “A Logical Analysis of Meaning,” 25, 70; Langer, “A Logical Study of Verbs,” 122; Langer, *An Introduction to Symbolic Logic*, 39. In all, Langer refers to Josiah Royce, “The Principles of Logic,” in *Encyclopaedia of the Philosophical Sciences*, vol. 1: Logic (London: Palgrave Macmillan, 1913), 73.
35. Langer, “A Logical Study of Verbs,” 123.
36. Langer, *An Introduction to Symbolic Logic*, 23.
37. Langer, “A Logical Analysis of Meaning,” 25–8.
38. Langer, *The Practice of Philosophy*, 50–1.
39. *Ibid.*, 88.
40. Langer, *An Introduction to Symbolic Logic*, 42.
41. Langer, *The Practice of Philosophy*, 99.
42. *Ibid.*
43. *Ibid.*
44. Langer, “A Logical Analysis of Meaning,” 68–9.
45. Langer, “A Set of Postulates for the Logical Structure of Music,” 562. The *structure* of music is to be distinguished from the *meaning* of music, with which Langer deals as early as in her dissertation, see Langer, “A Logical Analysis of Meaning,” Appendix D. On Langer’s reflections on music and meaning, see Lona Gaikis, “Music as the DNA of Feeling, and some Speculations on Whitehead’s Influence on Susanne K. Langer’s Philosophy,” Chapter 11 in this volume.
46. Langer, “A Set of Postulates for the Logical Structure of Music,” 562.
47. *Ibid.*, 563.
48. Langer, “A Logical Analysis of Meaning,” 57. In the dissertation, Langer suggests also another interpretation for the Boolean algebra: “It seems to me at present that another interpretation is possible; that the Algebra is capable of expressing, for instance, the system of “ideas”” (*ibid.*, 147) of “empiricist psychology” (*ibid.*, 159).
49. Langer, *The Practice of Philosophy*, 153.
50. Langer, “A Set of Postulates for the Logical Structure of Music,” 570.
51. Langer, *The Practice of Philosophy*, 213.
52. *Ibid.*, 83.
53. *Ibid.*
54. For Langer’s reflections on the notion of meaning after the 1930s, see Adrienne Dengerink Chaplin, *The Philosophy of Susanne Langer: Embodied Meaning in Logic, Art and Feeling* (London/Oxford: Bloomsbury Academic, 2020), ch. 8.

55. Langer, "A Logical Analysis of Meaning," 6.
56. Ibid.
57. Ibid., 87.
58. Ibid. She takes her claim that logical symbols can mean different systems to be aligned with what Frege maintains, and refers to Frege, *Grundgesetze der Arithmetik*, vol. 2, 100–1.
59. Langer, "A Logical Study of Verbs," 128.
60. Langer, "A Logical Analysis of Meaning," 6.
61. Ibid., 126. She also stresses: "Here I wish to guard against a misunderstanding which is almost inevitable ... this is the error of supposing that I consider meaning essentially as a logical relation, and hope by logical analysis to exhaust all its constituent factors. I do not believe it to be ever a purely logical affair, any more than judgment, or empirical existence" (ibid., 9).
62. Ibid., 126. Here Langer is in fact criticizing Russell, who she maintains claims that "logic is built up on atomic propositions; therefore logic is built up on things that cannot occur in logic" (ibid.). According to Langer, this is in opposition to his claim that "[c]onstants do not occur in logic; that is to say, the *a, b, c* which we have been supposing constant are to be regarded as obtained by an extra-logical assignment of values to variables" (Whitehead and Russell, *Principia Mathematica*, xxx), which Langer instead takes as correct (Langer, "A Logical Analysis of Meaning," 30).
63. Bertrand Russell, "Introduction," in *Tractatus Logico-Philosophicus* (London: Kegan Paul, 1922), 7, quoted in Langer, "A Logical Analysis of Meaning," 10f.; 28.
64. Langer, *The Practice of Philosophy*, 118.
65. Langer, "A Logical Analysis of Meaning," 126.
66. Ibid., 5.
67. Ibid., 84.
68. Langer, *The Practice of Philosophy*, 108.
69. Langer, "A Logical Study of Verbs," 124. On Langer's understanding and interpretation of Wittgenstein's supposed picture theory, see Adrienne Dengerink Chaplin, "Scientific Models and Artistic Images: Susanne K. Langer and the Early Wittgenstein," Chapter 2 in this volume.
70. Langer, "A Logical Study of Verbs," 124.
71. Ibid., 127. Langer, *ibid.*, 124 also states that "Mr. Russell in large measure subscribes" to Wittgenstein's account. See also Langer, "A Logical Analysis of Meaning," 7–8, 19, where Langer quotes and refers to Russell's Introduction to the *Tractatus*. As a further proof that Langer worked on different logical traditions, it is worth mentioning that she also maintains that the claim that there is a relation between "a symbol and its object" at the logical basis of meaning, was also endorsed by Husserl, in Investigation 1, §9 of *Logische Untersuchungen* (1900/1). See Langer, "A Logical Analysis of Meaning," 119–20.
72. Langer, "A Logical Study of Verbs," 122.
73. Ibid., 125.
74. Ibid., 122.
75. Ibid., 123.
76. *Wittgenstein's Tractatus* 6.522, quoted in Langer, "A Logical Analysis of Meaning," 8f.25.
77. Ibid., 68.
78. Langer, "A Logical Study of Verbs," 124.
79. Langer, "A Logical Analysis of Meaning," 68.
80. Ibid., 72.
81. Ibid.
82. Langer, "A Logical Study of Verbs," 124.

83. Ibid., 123–4.
84. Langer, “A Logical Analysis of Meaning,” 107.
85. Ibid., 93.
86. Ibid.
87. Langer, “A Logical Study of Verbs,” 124.
88. Wittgenstein quoted in Langer, “A Logical Analysis of Meaning,” 136f.7 and in Langer, *The Practice of Philosophy*, 120.
89. In Langer, “A Logical Study of Verbs,” she also aims at showing how endorsing the Roycean stance on what the material of logic is, allows us to characterize the Fregean assertion-sign and the Russellian notion of logical assertion. For further discussion, see Giulia Felappi, “Saving Logic from a Metaphysical Limbo: Susanne Langer on Logical Assertion,” manuscript.
90. Langer, “A Logical Study of Verbs,” 129.
91. Langer, “Form and Content: A Study in Paradox,” 437. Langer quotes and refers here to Whitehead’s *An Enquiry Concerning the Principles of Natural Knowledge* (Cambridge: Cambridge University Press, 1919), 59–60.
92. Susanne K. Langer, “Facts: The Logical Perspectives of the World,” *Journal of the Philosophy* 30, no. 7 (1933): 181–2. Langer refers to Henry M. Sheffer’s *The General Theory of Notational Relativity* and his paper “Notational Relativity,” in the *Proceedings of the Sixth International Congress of Philosophy* (1927).
93. Langer, “Facts: The Logical Perspectives of the World,” 182–3.
94. Langer, “Form and Content: A Study in Paradox,” 437.
95. Ibid.
96. Langer, *The Practice of Philosophy*, 135. The selection of one form rather than another depends for Langer on the “intellectual purpose” (Langer, “Facts: The Logical Perspectives of the World,” 183) of our enquiry. For example, “the analysis of a line into an infinity of points is sufficient, and therefore correct, for the purpose of establishing its relations to other parts of space, but not for establishing the line itself in the Euclidean system” (ibid.) But while for Langer the purpose might dictate which form to consider in each of the various endeavors to see the world in a clear light, still for her purposes are in no way the business of logic, as shown by her discussion of James’s and Dewey’s pragmatist take on logic (Langer, *The Practice of Philosophy*, 80–1). In it, she notes that with them “we arrive at a logical theory whose interest is the proposition in almost any aspect except the formal one. The conception, plausibility, content, purpose of propositions; their usefulness, their truth; anything but their form and their place in a closed abstract system” (ibid., 80). In line with her anti-psychologism, she then laments that since what pragmatists are interested in is “psychological principles such as belief and interest” (ibid., 81), in following them “logic is not expanded, but simply abandoned, superseded by ... psychology” (ibid.).
97. Langer, “Algebra and the Development of Reason,” 295.
98. Langer, *The Practice of Philosophy*, 135.
99. Langer, “Form and Content: A Study in Paradox,” 438.
100. Susanne K. Langer, “Book Review: *The Logic of Events: An Introduction to a Philosophy of Time* by Andrew P. Uchenko,” *Journal of Philosophy* 27, no. 13 (1930): 362.
101. Ibid.
102. Ibid.
103. Langer, “A Logical Study of Verbs,” 122.
104. Ibid., 127.

105. Ibid.
106. Susanne K. Langer, "Book Review: *Non-Aristotelian Logic and the Crisis in Science* by Oliver L. Reiser," *Journal of Symbolic Logic* 2, no. 2 (1937): 89.
107. Langer, "Algebra and the Development of Reason," 297.
108. Langer, "Book Review: *The Logic of Events: An Introduction to a Philosophy of Time* by Andrew P. Uchenko," 362.
109. Langer, *The Practice of Philosophy*, 101.
110. Susan L. Stebbing, "Book Review: *An Introduction to Symbolic Logic* by Susanne K. Langer," *Philosophy* 13, no. 52 (1938): 482.
111. Langer, *An Introduction to Symbolic Logic*, 334. For our purposes, we can take this to be the problem, but it should be said that for Langer the problem is "the relativity of language, logical patterns, and 'facts'," and facts are the main topic of Langer's paper, "Facts: The Logical Perspectives of the World." On Langer's notion of fact, see Giulia Felappi, "Susanne Langer and the Woeful World of Facts," *Journal for the History of Analytical Philosophy* 5, no. 2 (2017): 38–50.
112. Langer, *An Introduction to Symbolic Logic*, 334.
113. Langer, "A Logical Analysis of Meaning," 43, 96–7.
114. Ibid., 436.
115. Ibid., 437.
116. Ibid.
117. Langer, "Facts: The Logical Perspectives of the World," 182.
118. Langer, "Form and Content: A Study in Paradox," 437.
119. Ibid., 438.
120. Ibid.
121. Langer, *The Practice of Philosophy*, 137.
122. Ibid., f.3.
123. While not observing explicitly that her claim that there is nothing like *the* logical form is in conflict with Russell, Langer maintains that her solution to the paradox the relation between form and content gives rise to relies on Mr. Russell's "fallacy of 'illegitimate totalities'" (Langer, "Form and Content: A Study in Paradox," 436, where she refers to both Russell, *The Principles of Mathematics*, ch. 10 and Appendix B, and Whitehead and Russell's *Principia Mathematica*, in particular to the Introduction of vol. 1 and ch. 2). But in her point about why the alleged totality of forms would be illegitimate she does not rely, at least not explicitly, on the Russellian criteria for a totality to be illegitimate. Langer, moreover, sees some similarities between her solution to the problem of relating the abstract form of anything to its specific content, and Russell's discussion of Wittgenstein's mystical point seen above that the logical basis of meaning, that is, the structure, common to a proposition and a fact it is a picture of, cannot be put into words, cannot be part of logic. Russell suggests that the only way to escape Wittgenstein's mysticism would be, for the totality of languages, to "deny that there is any such totality" (Russell, "Introduction," *Tractatus Logico-Philosophicus*, 19), to maintain that such totality is "not merely logically inexpressible, but a fiction, a mere delusion" (ibid.). Langer urges explicitly: "[s]ince the logical forms we can designate are determined by the language, or medium of designation, what holds for language holds also for logical forms; if, as Mr. Russell maintains, there could be no totality of them, then ... there yet could be no totality of [forms]" (Langer, "Form and Content: A Study in Paradox," 438). But it should be said that Russell does not seem to *maintain* what she takes him to be maintaining, as concerning his suggestion he calls it a "possibility" (Russell,

“Introduction,” *Tractatus Logico-Philosophicus*, 19) and adds: “Such an hypothesis is very difficult, and I can see objections to it which at the moment I do not know how to answer” (ibid.).

124. Langer, *An Introduction to Symbolic Logic*, 41.
125. Ibid.
126. Ibid.
127. Ibid.
128. Ibid., 126.

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