ARGUMENTA

First published 2020 by the University of Sassari

Argumenta is the official journal of the Italian Society for Analytic Philosophy (SIFA). It was founded in 2014 in response to a common demand for the creation of an Italian journal explicitly devoted to the publication of high quality research in analytic philosophy. From the beginning *Argumenta* was conceived as an international journal, and has benefitted from the cooperation of some of the most distinguished Italian and non-Italian scholars in all areas of analytic philosophy.

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Editorial

Imagination and fiction play so pivotal a role both in our lives and in philosophy that it hardly needs stressing. For one thing, if we had a limited imagination, we would lead impoverished ethical lives. For another, if we were unable to respond to fiction, our lives would soon prove unbearable.

No wonder, therefore, that fiction and imagination have held the interest of philosophy down the centuries, receiving particular attention in recent decades. The Special Issue that opens the present number of *Argumenta*, entitled *Fiction and Imagination: Counterfactual Reasoning, Scientific Models, Thought Experiments* and edited by Carola Barbero, Matteo Plebani and Alberto Voltolini, represents an up-to-date discussion of the most pressing aspects of both themes, and finds in fiction and imagination the thread that binds different phenomena such as counterfactuals, thought experiments, and scientific models.

The present number is then topped off by the section of Book Reviews. In this section, readers will find careful assessments of three very interesting recent books—*Divine Omniscience and Human Free Will: A Logical and Metaphysical Analysis* by Ciro De Florio and Aldo Frigerio, *Musical Ontology: A Guide for the Perplexed* by Lisa Giombini, and *Just Words: On Speech and Hidden Harm* by Mary Kate McGowan.

Finally, I would like to thank all the colleagues who have acted as external referees, the Assistant Editors, the Editor of the Book Reviews, and the members of the Editorial Board. All of them have been very generous with their advice and suggestions.

As usual, the articles appearing in *Argumenta* are freely accessible and freely downloadable, therefore it only remains to wish you:

Buona lettura!

Massimo Dell'Utri
Editor-in-Chief

Fiction and Imagination:
Counterfactual Reasoning, Scientific Models, Thought Experiments

Edited by

Carola Barbero, Matteo Plebani, Alberto Voltolini

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Fiction and Imagination:
Introduction

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Abstractly speaking, counterfactuals, thought experiments, and scientific models seem to be utterly different phenomena. First, counterfactuals are those conditionals whose antecedents are false, for they describe situations that are merely possible, or even impossible. Second, thought experiments are mental experiments performed both in philosophy and in natural sciences that, instead of relying on concrete actual procedures ultimately grounded upon observations, merely rely on hypothetical considerations. And third, scientific models are patterns, sometimes made of actual things—consider Rutherford's model of the atom, or the three-dimensional eliocentric model of the Solar System that has inspired that model—which, *qua* props that are proxies of the intended reality to be studied, simulate or idealize the behavior of the concrete items constituting that reality. Following Walton (1990), actual truths about the props can be exploited in order to get truths in the model (for example, actual truths about the spatial distribution of certain balls can be exploited in order to get truths in the eliocentric model about the spatial relations of planets in the Solar System). Note that in accordance with Walton (1993)'s idea of *prop-oriented* games of make-believe, things can also go in the other direction. That is, truths in the model can be exploited in order to get actual truths about the props themselves. Cf. on this Caldarola and Plebani 2016.

Yet appearances notwithstanding, there is a family resemblance among such phenomena. First, as Recanati (2000) remarked by following an original suggestion of Mackie's (1973), a conditional, hence a counterfactual as well, is the contracted form of a kind of reasoning moving to a conclusion under the scope of a supposition ("Suppose that *p*. Then *q* ensues"). Second, that kind of reasoning may also be present in telling a thought experiment, especially a philosophical one yielding an argument in favor of a thesis, yet couched in a narrative form. Third, the sort of tale occurring in that experiment may be similar to the one constituting that kind of scientific model that, instead of using actual props, resorts to descriptions.

Perhaps that family resemblance is not just a mere coincidence of overlapping traits, but it has a reason. Indeed, all such phenomena may be seen as forms of imagination, notably the kind of imagination that is exploited when doing fiction: *make-believe*. The phenomenon of make-believe may be conceived in the *normative* terms appealed to by Walton (1990), who resorts to games of make-believe based on (prop-exploiting) principles of fiction generation: it is fic-

tional that *p* iff (in the relevant game using certain props) it is prescribed to imagine that *p*. But it may also be conceived in *cognitive* terms, by appealing either to *multiple representational models*, the reality model and the imaginary model, in order to distinguish the representation of a real situation from the representation of a fictional situation, which is represented in an off-line form detached from behavioral consequences (Perner 1991, Nichols and Stich 2003), or to a *metarepresentational* structure that involves a metacognitive factor aimed at blocking the confusion between fiction and reality: the situation represented in the imaginary model is fictional precisely because it is so represented (Leslie 1987, Meini and Voltolini 2009, Voltolini 2016). Either way, first, the content of a fiction may be described in counterfactual terms. Indeed, the ability of understanding fiction and the mastery of counterfactuals developmentally go hand in hand (Weisberg and Gopnik 2013). As a matter of fact, a sort of counterfactual knowledge is part of what we learn when we learn something from fiction: a knowledge of possibility, as Putnam (1987) remarked. Actually this is what could be seen as *conceptual knowledge*, where what "I learn is to see the world as it looks to someone who is sure that hypothesis is correct. I see what plausibility that hypothesis has; what it would be like if it *were* true; how someone could possibly think that it *is* true" (Putnam 1976: 488), hence a kind of knowledge not to be seen as the possession of information, but rather as Lewis (1983) underlined, as the ability to imagine, to recognize, to predict one's behavior by means of imaginative experiments. Indeed, when knowing that in a certain story something is the case, we know how things would unfold if we were in such a situation, the situation affecting the fiction's protagonists (Currie 1998, Barbero 2017).

Second, the telling of a thought experiment is a kind of short fictional tale that has a real import, to be grasped by science: it is fictionally the case that *p* in order for something to be really the case. As some put it, one may read a thought experiment both as having a fictional content and as having a corresponding real content (Voltolini 2016). Third, scientific models may be compared with games of make-believe, even literary ones, insofar as the latter respectively mobilize physical objects and descriptions as props for imaginary characters, just as scientific models themselves may do in describing an idealized, or even nonexistent, form of reality—frictionless planes, pure distributions of gases, the ether out there (Frigg 2010). And models themselves can be compared to fictional stories, which can further be seen as a sort of abstract objects that amount to cultural artifacts (Thomasson 1999, Salis 2019).

In recent times, all such phenomena have individually been the target of several books (to quote just the most important ones, cf. Lewis 1973, Gendler 2000, Suarez 2009). Yet there is a growing interest in also exploring their connections. As a follow-up of the SIFA Midterm Conference / Graduate Conference of the FINO Ph.D. Programme held in Turin on June 17-18 2019, this issue intends to scrutinize such connections more thoroughly and widely.

The seven essays collected in this issue address central questions for the contemporary debate on counterfactuals, thought experiments and scientific models from new and thought-provoking perspectives.

Conrad Aquilina's "Simulation Modelling in Fiction" draws a comparison between scientific models, or models more in general, and narrative fictions that can be understood in a similar way. This comparison relies on the idea of simulation. As Frigg himself (2010) originally underlined, scientific models do not work as such unless they are *used* as models. According to Aquilina, this use in-

volves a simulation process in which a source world is simulated by another world. This also happens in narrative, insofar as one can literally take the idea of a fictional world generated by the narrative insofar as this world opportunely simulates, in phenomenologically involving terms, the real world from which it departs. Of course, this comparison does not mean coincidence, since scientific models are finally intended to describe portions of the real world and refer to its objects, while narrative fictions typically concern just imaginary scenarios and imaginary individuals (representation of reality is typically not among their purposes).

In a series of paper, James Nguyen and Roman Frigg have developed an account of how scientific models represent certain aspects of the world, the so-called DEKI account. In their contribution to this issue, "Unlocking Limits", Nguyen and Frigg elaborate upon one aspect of the DEKI account: the use of keys, rules that connect the features of the model with the features that should be attributed to the target system. The paper analyzes a kind of keys that play an important role in physics, i.e. limits keys, where the features of the model are the result of taking to the limit certain features of the target. It is argued that limit keys can be used only under certain circumstances, and that analyzing how limits keys work deepens our understanding of how models are used in the actual scientific practice.

Frederick Kroon's paper "Fiction, Models and the Problem of the Gap" starts from a problem that appealing to models as bits of fiction, as in Frigg's (2010) fiction view of models, raises: since the protagonists of a fiction are unreal, they do not really have the properties by means of which they are characterized (they only have such properties in the fiction); so, how can they represent real things by ascribing to them real features? Kroon's answer starts from the fact that we can have *de re* imagining about real objects in which we ascribe them in fiction properties they do not really possess. To this *de re* imagining, a *de dicto* imagining corresponds in which we merely pretend-refer to someone, who is not the real individual, but just a surrogate of it. Ditto for models. We can export, as concerning the target, what in the model only concerns the nonexistent objects that surrogate the real objects in the target. Just as in the aforementioned prop-oriented games of make-believe, this practice makes the model as externally oriented, not as content oriented.

Fiora Salis' essay, "Learning through the Scientific Imagination", analyzes the fundamental role of (constrained uses of) imagination in the development of plausible hypothesis concerning reality. Make-believe is seen as the notion of imagination at work when theoretical models are used as ways of knowing reality and an overarching taxonomy of types of constraints on scientific imagination enabling that kind of knowledge is sketched. Two main kinds of knowledge are hence identified: first, the knowledge of the imaginary scenario specified by models, and second, the knowledge of reality itself.

"Spoiler Alert! Unveiling the Plot in Thought Experiments and Other Fictional Works" by Daniele Molinari explores the connection between thought experiments and literary works. In Molinari's view, the use of spoilers is a necessary condition for a piece of text to be a thought experiment. For a thought experiment is supposed to widen our knowledge of reality. Thus, it is right that a literary work can play the role of a thought experiment, as people following Elgin (2007) hold. Yet in order for this to be the case, one must locate the work in

the proper foretaste context, in which it is settled how to properly appreciate a text.

Starting from the connection between fictional disagreements and thought experiments, Louis Rouillé's paper "From Fictional Disagreements to Thought Experiments" analyses the "great beetle debate" (what did Gregor Samsa metamorphosed into? A beetle or a big cockroach?) as a paradigmatic case. Actually, fictional disagreement is interesting in order to understand what has to be considered as the informational content of a fiction. There is a distinction that needs to be recognized between what is meant by the author (the fictional foreground) and what is inferred by readers (the fictional background). Actually, the fictional background seems to be filled by the reader's representations of reality and other shared (and often conventional) beliefs. The idea is that what happens when we learn from fiction is analogous to what happens when we perform a thought experiment, because in both cases the same informational structure is exploited: instead of filling the fictional background, one informs one's nonfictional representations using the same informational channels in reverse direction.

A much-debated topic in the literature on counterfactuals is whether counterfactuals with impossible antecedents (so-called *counterpossibles*) are vacuously true or not. In "Game Counterpossibles" Felipe Morales Carbonell analyzes various examples of *chess-counterpossibles*: counterfactuals whose antecedents describe a position on the chessboard that is not permitted by the rules of chess. Morales Carbonell defends the view that these examples count as genuine, nonvacuously true, counterpossibles and argues that this kind of counterpossibles are used to think about the consequences of certain changes in the rules of a game.

Finally, Malvina Ongaro's paper, "Fiction, Imagination, and Normative Rationality", addresses the question of how a fictional character, the Rational Agent described in Microeconomics models, can act like a role model for real economic agents and prescribe how they should behave. The paper focuses on the question of how the Dutch Book argument, an argument supporting the conclusion that the degrees of belief of the economic agents should respect the laws of probability, can have normative force. The narrative structure of the Dutch Book argument is analyzed and it is argued that the argument involves the use of the imagination to compare the outcomes of different courses of action. The analysis of the Dutch Book argument presented in the paper leads to the conclusion that imagination plays an important role in decision-making.

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