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**ON CERVANTES' ANTINOMY**

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In his article *Truth and Proof*, Alfred Tarski mentions two starkly opposing approaches to antinomies (Tarski 1969). Some dismiss them as a kind of intellectual pastime, with its harmful sophistry not to be taken seriously as it merely serves to show off the shrewdness of those who chose to indulge in them. Others see them as unavoidable developments of thought, as important as they are essential to our inquiries. If Tarski opts for a balanced approach he does so not because he thinks antinomies have a positive role to play, but rather they function as symptoms of abnormality.

Starting with premises that seem intuitively obvious, using forms of reasoning that seem intuitively certain, an antinomy leads us to nonsense, a contradiction. Whenever this happens, we have to submit our ways of thinking to a thorough revision, to reject some premises in which we believed or to improve some forms of argument which we used (Tarski 1969: 66).

Now, in volume two, chapter 51 of *Don Quixote* the reader is presented with an antinomy. Taking a cue from Tarski, we shall submit the reasoning described by Cervantes to a thorough examination, hoping, as we do, that what we can explain and establish in due course will help us understand why our present subject of consideration qualifies as an antinomy. To this end, it seems fitting to revisit what Aristotle has to say about truthfulness or falseness of propositions concerning future accidental events.

1. ARISTOTLE'S INQUIRIES INTO PROPOSITIONS CONCERNING  
FUTURE ACCIDENTAL EVENTS

Aristotle's own view on the matter is presented in chapter 9 of *On Interpretation*, where he differentiates between propositions concerning past or current events from propositions concerning future events:

"In the case of that which is or which has taken place, propositions, whether positive or negative, must be true or false (...) When the subject, however, is individual, and that which is predicated of it relates to the future, the case is altered."<sup>1</sup>

He then goes on to demonstrate his claim, ultimately concluding:

"It is therefore plain that it is not necessary that of an affirmation and a denial one should be true and the other false [of future accidental events]. For in the case of that which exists potentially, but not actually, the rule which applies to that which exists actually does not hold well. The case is rather as we have indicated."

But what exactly would be the rule Aristotle has in mind? It is a simple one, although following on from a lengthy exposition. Only propositions predicating of necessary events are true or false. If, then, propositions about future events were true or false, they would be so by necessity. In other words, accidental events would not have a place in this world. But they do.

" (...) we see that both deliberation and action are causative with regard to the future, and that, to speak more generally, in those things which are not continuously actual there is potentiality in either direction. Such things may either be or not be; events may also therefore either take place or not take place. There are many obvious instances of this."

He further adds

"Now that which is must needs be when it is, and that which is not must needs not be when it is not. Yet it cannot be said without qualification that all existence and non-existence is the outcome of necessity. For there is a difference between saying that which is, when it is, must needs be, and simply saying that

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<sup>1</sup>All passages from *Of Interpretation* come from section 1, part 9 — translators note.

all that is must needs be (...). Let me illustrate. A sea-fight must either take place to-morrow or not, but it is not necessary that it should take place to-morrow, neither is it necessary that it should not take place, yet it is necessary that it either should or should not take place to-morrow.”

On a side note, let us remind ourselves that chapter 9 of *On Interpretation*, presenting inquiries into propositions predicating of accidental future events which are neither true nor false, has inspired Łukasiewicz's idea of trivalent logic.

## 2. THE CASE OF A TRAVELLER FROM THE ISLAND GOVERNED BY SANCHO PANZA

So it was that by a decree of the Prince and the Princess, Sancho Panza became governor of the island. One morning he took to his judicial duties after a very modest breakfast. The first to appear before him was a stranger sent by four judges seeking the advice of the governor in a highly confusing case. The judges were sitting in a tribunal built nearby a bridge. The lord exercising jurisdiction over the river and the bridge has proclaimed the following law: "If anyone crosses by this bridge from one side to the other he shall declare on oath where he is going to and with what object; and if he swears truly, he shall be allowed to pass, but if falsely, he shall be put to death for it by hanging on the gallows erected there, without any remission."<sup>2</sup> To this end, his lordship ordered the erection of gallows at one end of the bridge. The law went into effect and those willing to cross the bridge had to state the destination and purpose of their journey. The judges were there to examine their declarations, letting the travellers pass upon verification of their testimonies. It happened, however, that a traveller appeared before the tribunal who, on hearing the inquiry, "swore and said that by the oath he took he was going to die upon that gallows that stood there, and nothing else." Taken aback, the judges reasoned as follows: "'If we let this man pass free he has sworn falsely, and by the law he ought to die; but if we hang him, as he swore he was going to die on that gallows, and therefore swore the truth, by the same law he ought to go free.'"

As we can see, the judges derived two individual norms from the law and the statement of the traveller: "should die" and "should be let free"

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<sup>2</sup>All passages from *Don Quixote* come from chapter 51 of the novel — translators note.

[from hanging], i.e. "should not die." These norms, it should be noted, are contrary, not contradictory (with the case of the latter being "should die" — "not: should die," that is, "may (has the right to) not die"). This, however, was enough of a puzzle, the more so because contrariety of those norms was founded on the contradiction between "told truth" — "not: told truth" ("lied").

At first, Sancho Panza confessed that he did not entirely follow and asked for the story to be repeated. Upon hearing it one more time he finally declared himself capable of settling it once and for all and without further ado: "It seems to me that I can set the matter right in a moment, and in this way; the man swears that he is going to die upon the gallows; but if he dies upon it, he has sworn the truth, and by the law enacted deserves to go free and pass over the bridge; but if they don't hang him, then he has sworn falsely, and by the same law deserves to be hanged' (...) 'Well then I say,' said Sancho, 'that of this man they should let pass the part that has sworn truly, and hang the part that has lied; and in this way the conditions of the passage will be fully complied with.'" To this, however, the envoy replied: "But then, senor governor (...) the man will have to be divided into two parts; and if he is divided of course he will die; and so none of the requirements of the law will be carried out, and it is absolutely necessary to comply with it.'" This indeed made Sancho reconsider his original judgment and ultimately rule as follows: "either I'm a numskull or else there is the same reason for this passenger dying as for his living and passing over the bridge; for if the truth saves him the falsehood equally condemns him; and that being the case it is my opinion you should say to the gentlemen who sent you to me that as the arguments for condemning him and for absolving him are exactly balanced, they should let him pass freely, as it is always more praiseworthy to do good than to do evil; this I would give signed with my name if I knew how to sign.'" In passing such judgment, Sancho simply followed teachings of his master Don Quixote imparted on him in anticipation of Sancho's appointment to the office of governor, and which luckily sprang to his mind in this trying moment of exercising his duties. Indeed, Don Quixote instructed his squire that "when there was any doubt about the justice of a case I should lean to mercy."

This is how Cervantes chose to tell the story. Let us now consider the matter in light of logic and semiotics.

### 3. THE SOURCE OF ANTINOMY

Together with the judges of his lordship exercising jurisdiction over the

bridge we are faced with contrariety between individual norms derived from the contradiction of two contrary qualifications of answers given by the traveler. The situation, it seems, is antinomial. But is it really? And if so, where should we look for its causes?

The proponents of thought advanced by Kelsen (Kelsen 1973, in particular 228-253),<sup>3</sup> and there are many, could perhaps note that whereas we are confronted here with contradicting propositions, we are not dealing with contrary norms. As it is, norms, being neither true nor false, do not count as logical propositions and only these are subject to relationships of opposition, such as contrariety or contradiction, since one can establish whether they are true or false (if only to restrict our reasoning to bivalent logic).

We will not be exploring this problem in detail as we have already written extensively on this issue elsewhere (Kalinowski 1977). For this reason, it will suffice to recapitulate briefly what follows, without going deeper into discussion whether norms can be true or false, with the answer, whatever it would be, necessarily implying certain underlying metaphysics (Kalinowski 1967). Ever since *Begriffsschrift* proposed by Frege, deductive logic has been functioning as a multi-tier formalized system operating on a calculus (however one conceives it) rightly described by Tammelo as "protologic" (Tammelo 1969, part II, 2; Tammelo and Schreiner 1974, (B.1), II), where symbols "+" and "-", and their synonyms "I" and "O," as well as "V" and "F," etc., constitute two separate values, where one or the other is attributed to every expression included in a set governed by particular variables of this calculus. The relationships of opposition, such as contrariety or contradiction, can be characterized by those symbols which can be further interpreted as symbols of, respectively, validity or invalidity of norms. If this point of view is legitimate, there is no point in maintaining that norms cannot be contrary or contradictory.

Therefore, I propose to turn our attention to another difficulty, originating with what Aristotle implied of propositions concerning future accidental events. The fate of those who want to cross the bridge is decided by truthfulness or falsity of their answers to two questions. Therefore, we must first inquire whether questions prescribed by the law imposed by the owner of the bridge are of such a kind that proper answers to such questions can be true or false; and second, whether answers given by the traveller are appropriate answers to those questions, and if so whether they are true or false.

For convenience, questions asked by the tribunal judges will be formulated

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<sup>3</sup>Kelsen's view is discussed at length in Kalinowski 1977.

in a manner corresponding with interrogative functions introduced by Kazimierz Ajdukiewicz (Ajdukiewicz 1960). In the case under consideration we are confronted with complementation questions, corresponding with function "[ $x?$ ]  $fx$ ", read, as we know, "For which  $xfx?$ ." Assuming, for the sake of simplicity, that questions and answers in our language are formulated in the third person, questions posed by Cervantes' judges take the following form:

- (1) For which  $x$   $A$  is walking to  $x?$ ; and
  - (2) For which  $x$   $A$  is walking to do  $x?$ ,"
- where  $A$  is a name of the queried person.

Proper answers to (1) and (2) look as follows:

- (3)  $A$  is walking to  $x$ ; and
- (4)  $A$  is walking to do  $x$ .

Let us imagine that, on his pilgrimage to Saint James' tomb in Santiago de Compostela, Juan García was stopped before the bridge and upon questioning gave the following answers:

- (5) Juan García is walking to Santiago de Compostela;
- which normally means, and we are considering here regular cases,
- (6) Juan García is intending to go to Santiago de Compostela; and
  - (7) Juan García is walking on a pilgrimage to Saint James' tomb in Santiago de Compostela;
- which, again, normally means
- (8) Juan García is intending to go on a pilgrimage to Saint James' tomb in Santiago de Compostela.

Glossing over issues secondary to our considerations, namely whether it is easy to establish what someone does and intends, and how judges verify this information, we nevertheless state, which is crucial, that appropriate answers to those questions can be successfully verified with regard to their truth-value.

We can now set about considering answers given by the traveler, let us call him Fernando Rosales:

- (9) Fernando Rosales is walking to that gallows; and
- (10) Fernando Rosales is walking to die on that gallows.

(9) is the same with (5) and is pretty straightforward: it is either true or false. (10), however, is ambiguous. It looks like descriptive sentence (7), but were it so, it would assume:

- (11) Fernando Rosales is intending to die on that gallows.

This, however, complicates the matter, as one may die on the gallows by hanging oneself or by being hanged by others. And Rosales' answer does not disclose this disambiguation. The matter is still unclear in the case of

the second sentence. If the answer is descriptive, as at face value it seems to be, then (10) states that Fernando Rosales is intending to be hanged by judges provided they decided to do so, because it is not for him to judge what they should settle to do, for usually every man decides his actions for himself. But maybe (10) is not descriptive, as it at first sight may seem, but is instead a prediction. If so, it would be better phrased in the following way:

(12) Fernando Rosales will be hanged on that gallows.

If this is indeed the case, and as far as Aristotle's insights into propositions predicating of accidental future events recounted above are not false, (10) would be neither true nor false, and would thus not qualify as a proper answer to the second question prescribed by the law of his lordship. This twofold remark leads us to a conclusion that there is a loophole in the law, since it does not prescribe what to do when the person willing to cross the bridge refuses to give a proper answer, or, to the same effect, gives an answer which is neither true nor false. To decide what is the appropriate measure that one should adopt in such a case is not the task of a logician or a semiotician, but of a lawyer.

That the judges became caught up in an antinomy would suggest that, on the one hand, they decided not to treat (10) as a descriptive proposition (treating it in that way, and therefore as either true or false, one can apply the law without succumbing to contradiction). Opting to see it as a prediction instead, the judges nevertheless decided to treat both answers given by Rosales as available to truth-value examination. This, precisely, led to circular reasoning: if it is true of what he said that he will be hanged, he cannot be hanged, but if he will not be hanged, he lied, therefore he needs to be hanged, etc. Perhaps they were not familiar with *On Interpretation* or its arguments held little appeal to them. Whatever the answer, by assuming that (10) is a prediction, they should have declared a loophole that precludes application of the law, and resort to legal techniques customarily used by lawyers in such circumstances, such as requesting the lawmaker to close the loophole (by issuing a subsidiary rule, a binding interpretation, etc.); or assuming that the regulation implicitly provides that in the case of refusal to give an answer, or an answer that is neither true nor false, one is barred from entering the bridge, etc. Choosing any of the those options would save them the trouble of succumbing to contradiction in interpreting the law. This invites a conclusion that the statue, however we want to construe (10), is not in itself prone to contradiction, and one becomes mired in antinomy only when (10), although treated as a prediction, is nevertheless considered

to be a proposition that can be true or false, which goes against the nature of propositions predicating future accidental events. Antinomy arises when (10) is groundlessly considered to have certain truth-value and follows on from the mistaken conviction that hanging Rosales in a moment  $t$  would make (12) true, whereas it would only validate

(13) Fernando Rosales was hanged in a moment  $t$ .

This is all we need to know and take under consideration to shield our reasoning from contradiction.

### CONCLUSION

The judges entrusted with the application of the statue on an island governed by Sancho Panza had no reason to believe that they were faced with antinomial contradiction. Sancho Panza was also wrong to assume, first, that one part of the traveller said the truth, while the other lied, and second, that the traveller in equal measure deserved to be allowed to cross the bridge and to be hanged. If the answer given by the traveller meant the same as (11), regardless of it being a suicidal attempt or desire to be hanged by the henchmen, he either told the truth, and should be free to cross the bridge, or lied, and should therefore be hanged. But if his answer was to be construed along the lines of (12), he was neither true nor false. Thus, there was basis neither for letting him through nor hanging him. Antinomy flourishes here on the grounds of a popular belief already proven wrong 2,300 years ago by Aristotle in his remarks on future accidental events, which, as he duly demonstrated, are neither true nor false. Upon arriving on this conclusion we can now see that the view proposed by Tarski holds well. Antinomies are pathological phenomena, but for this very reason their examination are highly instructive, as it helps us understand what we cannot do, and why, if we want to steer clear of its traps.

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