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# Logico-ontological remarks on Henryk Elzenberg's theory of value

## 1. The concept of value

An object is valuable or, in other words, has a certain value if and only if it is as it should be. This conviction, repeatedly expressed, discussed and analyzed by Henryk Elzenberg,[1] raises many questions. The purpose of this article, however, will not be to reconstruct his views. Instead, Elzenberg's remarks will inspire independent and autonomous research into the logical and ontological aspects of the concept of value.

The formula quoted at the beginning raises a number of questions. First, about the logical status of this formula. Is it a definitional formula or an axiomatic formula? In other words, is this formula a definition of value, or is it an expression of some intuitively obvious, characterization of what value is or that a certain object is valuable? If we consider that it is a definitional formula, then we can further ask whether it is a nominal definition or a real definition of value. Thus, does it answer the question 'What does the word value mean?' or 'What does it mean that a certain

[1] See Henryk Elzenberg, "Konstrukcja pojęcia wartości", in: Henryk Elzenberg, *Pisma Aksjologiczne*, Wydawnictwo Uniwersytetu Marii Curie-Skłodowskiej, Lublin 2002, 71–95.

object is valuable?' or does it answer the question 'What is value?' or 'What does it consist in that a certain object is valuable?'. It is of course possible that this formula, is both a nominal definition of the word 'value' and a real definition of value. However, interpreted as a nominal definition, it certainly does not constitute a reporting definition of the term 'value' found in everyday language. We think that this formula should be interpreted as a real definition of value, or of a particular type of value – perfect value, and as a nominal design definition of the term 'value' by which we mean perfect value. Let us now consider a certain paraphrase of the formula in question.

(1) An object is valuable if and only if it is as it should be.

Many comments by Elzenberg himself indicate that this should be understood as follows:

(2) An object is valuable if and only if it is such-and-such, and at the same time such-and-such should be.

Here, however, further problems arise. First, it is necessary to clarify what kind of object is what is being defined. Is one defining here a certain quality of being valuable or having value, or a certain state of affairs consisting in the fact that a certain object is valuable? This is because it determines whether value is recognized as a quality of something or even a feature of something, or as a certain state of affairs that may or may not occur. Secondly, it needs to be further clarified what it is that the object is such-and-such. Is it that the object has a certain feature, or that it is related to other objects through certain relations, or that something happens to it, or more generally, that it is the subject of a certain state of affairs that occurs? According to Elzenberg, the fact that object **a** is such and such is that the object has a certain feature C. Therefore, formula (2) could be interpreted as

(3) **a** is valuable if and only if **a** should be C, and at the same time **a** is C.[2]

As Elzenberg writes, "the word 'valuable' means 'such as it should be', 'having such a property as it should have'. This property, in turn, is something different from value itself". Moreover, some of Elzenberg's remarks suggest that value as what is defined in this formula is a certain state of affairs. Thus, in such a view, the value of an object is not any of its features, but a certain state of affairs that pertains to that object. The

[2] Elzenberg, "Konstrukcja pojęcia wartości", 92.

expression '*a* is valuable' standing on the left side of the definitional equivalence thus represents the object being defined, i.e. the value of object a itself, which is a certain state of affairs.[3] On the right side, on the other hand, we have an expression characterizing this very state of affairs. Formula (3) is thus an explicit definition. However, further difficulties arise. The logical difficulty is related to the question of what role the letter C appearing in formula (3) plays. Is it a constant, denoting a certain specific feature, or a feature being the value of a certain function for the argument which is the object **a**, or a variable running over the class of all features? If the letter C were interpreted as a constant, this would lead to consequences that are difficult to accept. The letter C would then stand for a certain fixed feature. Under this assumption, every valuable object would have to have this feature. If the letter C were interpreted as a feature being the value of some function for an argument which is object **a**, the consequences of this would be equally difficult to accept. Then, for an arbitrarily determined object **a**, we would have exactly one such feature C that an object that does not have this feature is not valuable. Thus, we claim that C should be treated as a variable. But then the left-hand side of the definitional equivalence (3) should be preceded by some quantifier that binds this variable, such as an existential quantifier. Formula (3) would then take the form of

(4) **a** is valuable if and only if, for some C, a should be C and a is C.

However, as Elzenberg notes, it may be that for some fixed object $\mathbf{a}_0$, and for some fixed features $C_1$ and $C_2$,

(5) $\mathbf{a}_0$ should be $C_1$ and $\mathbf{a}_0$ is $C_1$,

(6) $\mathbf{a}_0$ should be $C_2$ and $\mathbf{a}_0$ is not $C_2$.[4]

According to formula (4), the object $\mathbf{a}_0$ is valuable. However, probably not completely and in all respects. Elzenberg therefore proposes a distinction between the partial value of an object and the excellent value of an object.[5] Accordingly, it can be assumed that

(7) **a** is partially valuable if and only if, for some C, **a** should be C and **a** is C.

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[3] As Elzenberg writes, "the value of an object is only this fact – the fact that it feature c possesses [...] Value, then, is not a feature [...], but is the possession of a certain feature [...]" (ibidem, 92).

[4] Ibidem, 94.

[5] Ibidem.

and that

(8) **a** is excellent valuable if and only if, for any C, if **a** should be C then a is C.

Another difficulty is an ontological difficulty. Well, in formula (3) and in formulae (7) and (8) we have expressions that refer to objects belonging to three different ontological categories. This is because on the left side of equivalence we have a state of affairs, while on the right side of equivalence we have an object and a feature. Moreover, the quantifiers used on the right side of equivalence bind the variables running over features. This is quite a rich ontology, with which second-order logic is involved. Let us try, then, to simplify it a bit, while departing from Elzenberg's assumptions. The idea is to refer only to objects and states of affairs and to modalities. The notion introduced by Eugenia Ginsberg – Blaustein of a certain object being the subject of a certain state of affairs proves to be helpful here.[6] Thus, the fact that an object is such and such will not be understood to mean that it possesses a certain feature, but that it is the subject of a certain state of affairs that obtains. In particular, it may be that the object possesses a certain feature, but also that the object is related to other objects through certain relations, and that something happens to it, for example, it changes in some respect. Thus, the basic ontological categories will be: the category of individuals, which we will call, objects, the category of states of affairs, and the category of modalities de dicto, such as should be so that…, or ... is the subject of that…. Thus, the logic we will use will be multimodal propositional logic with quantifiers binding propositional variables.[7] Therefore, the subject of our consideration will be contexts such as object **a** is the subject of state of affairs B. The letter **a** stands for an arbitrarily fixed object, while the letter B stands for an arbitrarily fixed state of affairs. Let's adopt some informal notation here. For an arbitrarily fixed object **a** and an arbitrarily fixed state of affairs B, the lettering **a**B will mean that **a** is the subject of B. The letters P, Q, R ... will denote arbitrarily fixed propositional variables running over states of affairs. In turn, the symbols ~,

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[6] Eugenia Ginsberg, "On the Concepts of Existential Dependence and Independence", in: *Parts and Moments*, ed. Barry Smith (Munich: Philosophia Verlag, 1982), 265–287. (Originally published in polish: Eugenia z Ginsbergów Blausteinowa, "W sprawie pojęć samoistności i niesamoistności", in: *Księga Pamiątkowa Polskiego Towarzystwa Filozoficznego we Lwowie, 12.II.1904–12. II.1929* (Lwów, 1931).

[7] An outline of this logic will be presented in the final section of the article.

$\wedge$, $\rightarrow$ and $\equiv$ will be used as symbols of negation, conjunction, material implication and material equivalence, respectively, while the symbols $\forall$ and $\exists$ will stand for quantifiers binding propositional variables, universal and existential, respectively. The inscription $*$A, on the other hand, will read: it should be the case that A. We will also use parentheses as auxiliary symbols.

Thus, we can give the formula (7) the form

(9) **a** is partially valuable if and only if, $(\exists P)(*P \wedge \mathbf{a}P \wedge P)$.

On the other hand, we can give the formula (8) the form

(10) **a** is excellent valuable if and only if, $(\forall P)(*P \wedge \mathbf{a}P \rightarrow P)$.

Formula (9) says that an object **a** is partially valuable if and only if a certain state of affairs, of which object **a** is the subject, obtains and should obtain. In other words an object is valuable exactly when something happens to it that should happen. We can say that this state of affairs, while occurring, gives a certain value to object **a**, which is its subject. In turn, formula (10) says that object **a** is excellent valuable if and only if every state of affairs, the subject of which is object **a** and which should obtain, obtains. It can be said that all these states of affairs, occurring, give excellent value to object **a**, which is their subject. Of course, what is partially valuable need not be excellent valuable at all. The formula

(11) $(\forall P)(*P \wedge \mathbf{a}P \rightarrow P)$

does not follow from the formula

(12) $(\exists P)(*P \wedge \mathbf{a}P \wedge P)$.

But is what is excellent valuable also partially valuable? Not necessarily. Well, formula (12) does not follow from formula (11). Instead, it follows from formula (11) and an additional assumption, namely formula

(13) $(\exists P)(*P \wedge \mathbf{a}P)$.

According to formula (13), every object is the subject of at least one such state of affairs that should obtain. This is a very strong, albeit somewhat persuasive, because optimistic, assumption. It says that every object is affected by something that should be. So every object is at least potentially valuable. Being an object entails a certain, if only purely ontological, possibility of being valuable.

If, on the other hand, we reject this assumption then we allow the existence of objects that are not affected by anything that should be. We will call such objects ought-free objects. We will say that

(14) **a** is ought-free if and only if $\sim(\exists P)(*P \wedge \mathbf{a}P)$.

The right side of formula (14) is in turn equivalent to formula

(15) $(\forall P)(*P \rightarrow \sim\mathbf{a}P)$.

Let us now note that an object that is free of ought is excellent valuable. Indeed, formula (11) follows from formula (15).

## 2. Values, ought and existence

The notion of value is related to two other important notions, namely, the notion of existence and the notion of ought. In what follows, when we write that an object is valuable, we mean that it is partially valuable. The following questions therefore arise here:

(a) Does every valuable object exist?
(b) Should every valuable object exist?
(c) Is every object that should exist valuable?
(d) Is every object that should exist and does exist valuable?

In order to answer question (a), one must first somehow determine when an established object exists. In the logical notation used here, one could say that object **a** exists, symbolically Ex**a**, if and only if a certain state of affairs whose subject is object **a**, obtains. This is reflected in the formula

(16) Ex**a** if and only if $(\exists P)(\mathbf{a}P \wedge P)$.

Thus, if object **a** is valuable then, by the same token, this object exists. The right side of formula (16), that is, formula

(17) $(\exists P)(\mathbf{a}P \wedge P)$,

follows from formula (12). However, it is not the case in general that every object that is perfectly valuable exists. For this to be the case, one would have to, as an additional assumption, take formula (13) discussed earlier again.

The answer to question (b), on the other hand, will be in the negative. Not every valuable object is an object that should exist. As Elzenberg writes, “One must suppose that by sheer numerical multiplication of valuable objects the world is approaching perfection. But we soon come to sober up when this "accumulation" becomes such that out of despair we are ready to ask the first better Huns to deign to clean it up".[8] That object **a** should exist is reflected in the formula

(18) $*(\exists P)(\mathbf{a}P \wedge P)$.

However, formula (18) does not follow from formula (12). For it to do so, two additional assumptions would have to be made. First, that if the state of affairs A logically implies the state of affairs B, then the ought of the state of affairs A logically implies the ought of the state of affairs B. And second, that from the fact that object **a** is valuable, it follows that object **a** should be valuable. Both of these assumptions, especially the second one, are at least debatable.

Similarly, the answer to question (c) will be in the negative. Formula (12) also does not follow from formula (18).

The answer to question (d), on the other hand, is more complex. If one were to make an additional and quite intuitive assumption, namely that every object is the subject of a state of affairs consisting in the fact that this object itself exists, then of course every object that should exist and does exist would be a valuable object. Indeed, the above assumption is expressed by the formula

(19) $\mathbf{a}(\exists P)(\mathbf{a}P \wedge P)$.

Well, formula (12) saying that object **a** is valuable follows logically from formulas (17), (18) and (19).

## 3. Value and the world

The question of whether the world is valuable, that is, whether the world has any value has been asked since time immemorial. But, to answer this question, one must first determine what the world is. We claim here that the world is a universal object, that is, one that is the subject of every state of affairs. For everything that occurs, or can occur, occurs in the world, and everything that happens, or can happen, concerns the world. Therefore, if object **a** is the world, then **a** is the subject of every state of affairs. Therefore,

(20) **a** is the world if and only if $(\forall P)(\mathbf{a}P)$.

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[8] See Elzenberg, "Konstrukcja pojęcia wartości", 87.

Of course, accepting formula (20) does not determine either that there is such an object **a** that is the world or that if an object is the world, then it is exactly one such object. Here we are entering the boggy ground of metaphysics. However, as a working hypothesis, let's assume that there is exactly one such object that is the world. Let us call this object $\mathbf{a}_0$. Obviously, by virtue of formula (20), we have

(21) $(\forall P)(\mathbf{a}_0 P)$.

If we assume that there is at least one such state of affairs that obtains and should be the case, that is

(22) $(\exists P)(*P \wedge P)$,

which seems a fairly reasonable assumption, then we can conclude that the world is partially valuable. This is because from formulas (21) and (22) follows the formula

(23) $(\exists P)(\mathbf{a}_0 P \wedge *P \wedge P)$.

However, the world is not perfectly valuable. In order to recognize the formula

(24) $(\forall P)(*P \wedge \mathbf{a}_0 P \rightarrow P)$,

one would have to assume that

(25) $(\forall P)(*P \rightarrow P)$,

i.e., that everything that should be the case occurs. However, this does not seem reasonable.

## 4. Intrinsic values

A slightly different concept of value than the concept of perfect value analyzed by Elzenberg is that of intrinsic value. It can be said that an object is intrinsically valuable exactly when it must be as it should be. In other words,

(26) An object is intrinsically valuable if and only if it must be such-and-such, and at the same time such-and-such should be.

In order to express this more precisely, we need to introduce a new concept here, namely *the concept of a state of affairs that is necessary for a certain specified object*.

Assume that for an arbitrarily fixed object **a** and an arbitrarily fixed state of affairs B, the lettering **a**!B will mean that B is a state of affairs, which is necessary for object **a**. Thus, we can give the formula (26) the form

(27) **a** is intrinsically valuable if and only if, $(\exists P)(*P \wedge \mathbf{a}P \wedge \mathbf{a}!P)$.

One can now ask: Does every intrinsically valuable object exist?

As we have previously established (in formula (16)) object **a** exists, symbolically Ex**a**, if and only if a certain state of affairs whose subject is object **a**, obtains, symbolically $(\exists P)(\mathbf{a}P \wedge P)$. Thus, object **a** can be intrinsically valuable and at the same time not exist. The right side of formula (16), that is, formula $(\exists P)(\mathbf{a}P \wedge P)$ does not follow from the right side of formula (27), that is, formula

(28) $(\exists P)(*P \wedge \mathbf{a}P \wedge \mathbf{a}!P)$.

Hence it follows that an object can be intrinsically valuable and at the same time not valuable in Elzenberg's sense.

With the help of the concept of a state of affairs, which is necessary for a certain specified object, one can also define the concept of a real object. Real objects are contrasted here with fictional objects, virtual objects, etc. Of course, not every real object exists, while the question of whether every existing object is real is more complicated.[9]

In the logical notation used in this section, one could say that object **a** is a real object, symbolically R**a**, if and only if every state of affairs which is necessary for object **a** obtains. This is reflected in the formula

(29) R**a** if and only if $(\forall P)(\mathbf{a}!P \rightarrow P)$.

It follows that, if an object is intrinsically valuable and at the same time is a real object, then it is valuable in the sense of Elzenberg and therefore exits. This is because the formula (12), which characterizes the concept of perfect value, follows logically from formula (28) and the right side of formula (29), that is, formula

(30) $(\forall P)(\mathbf{a}!P \rightarrow P)$.

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[9] See, e.g. Tadeusz Czeżowski, *O metafizyce, jej kierunkach i zagadnieniach* (*On Metaphysics, its directions and problems*) (Toruń: Wydawnictwo Uniwersytetu Mikołaja Kopernika, 1948), 77–78.

## 5. Good, evil and value

The concept of value, however, can be analyzed not only with the concept of what should be the case, but also with the concept of what is good when it is the case. The latter approach is closer to that of Tadeusz Czeżowski.[10] According to this approach, the value of an object is understood as follows:

(31) An object is valuable if and only if it is such-and-such, and at the same time it's good when it is such-and-such.

Assume that we will read the inscription +A: it is good when A.

We can now reformulate the formula considered earlier that characterizes the concept of perfect value by giving it the form

(32) **a** is valuable if and only if, $(\exists P)(+P \wedge \mathbf{a}P \wedge P)$.

The expressions '*it should be the case that A*' and '*it is good when A*' logically behave to some extent similarly, although they differ in some respects. For example, we can assume that if a certain state of affairs should be the case and a certain other state of affairs should also be the case, then the conjunction of these two states of affairs should also be the case, i.e.

(33) $(\forall P)(\forall Q)\ ({*}P \wedge {*}Q \rightarrow {*}(P \wedge Q))$.

Similarly, it can be assumed that if it is good when a certain state of affairs obtains and good when a certain other state of affairs obtains, then it is also good when the conjunction of these states of affairs obtains, i.e.

(34) $(\forall P)(\forall Q)\ (+P \wedge +Q \rightarrow +(P \wedge Q))$.

It seems reasonable to hypothesize that if anything should be the case then its negation should not be the case, i.e.

(35) $(\forall P)({*}P \rightarrow {\sim}{*}{\sim}P)$.

On the other hand, however, the fact that if it is good when something is the case, then it is not good when its negation is the case, i.e.

[10] See, e.g. Tadeusz Czeżowski, "O przedmiocie aksjologii", in: *Pisma z etyki i teorii wartości* (Wrocław: Zakład Narodowy Imienia Ossolińskich Wydawnictwo, 1989), 115–116.

(36) $(\forall P)(+P \rightarrow \sim+\sim P)$,

is no longer so obvious.[11]

Of course, it should be the case that everything that should be obtains, i.e.

(37) $(\forall P)*(*P \rightarrow P))$.

On the other hand, it is good when any state of affairs obtains if and only if it is good when it obtains, i.e..

(38) $(\forall P)+(+P \equiv P))$.

More important, however, is the following point. Well, the concept of good is inseparable from the concept of bad. Therefore, in addition to expressions of the form *It's good when A*, we should also consider expressions of the form *It's bad when A*. With the help of the latter formulation, we can characterize another important axiological concept, namely the concept of counter-value, assuming that

(39) An object is counter-valuable if and only if it is such-and-such, and at the same time it's bad when it is such-and-such.

Assume that we will read the inscription $-A$: it is bad when A.

We can now reformulate the formula (39) that characterizes the concept of couter-value by giving it the form

(40) **a** is counter-valuable if and only if, $(\exists P)(-P \wedge \mathbf{a}P \wedge P)$.

Here, however, some difficulties arise. Well, one would expect that if an object is valuable, then it is not counter-value. However, this is not the case on the grounds of the formulas cited above that characterize the concept of value and counter-value. Formula $(P)(+P \wedge \mathbf{a}P \wedge P)$ does not logically imply formula $\sim(\exists P)(-P \wedge \mathbf{a}P \wedge P)$. This will be the case even if we assume that if it is good when it is so-and-so, then it is not bad when it is so-and-so, i.e.

(41)$(\forall P)(+P \rightarrow \sim -P)$.

To get rid of this difficulty, it is necessary to strengthen the concepts of value and counter-value by introducing the concepts of strict value and strict counter-value, respectively. Thus, we will say that an object

[11] From a logical point of view, if we consider formulae (33) and (34) to be logically valid and assume that if $(A \rightarrow B)$ is logically valid, then $(*A \rightarrow *B)$ and $(+A \rightarrow +B)$ are logically valid, then we should consider formulae $(\exists P)(\sim*P) \equiv (\forall P)(*P \rightarrow \sim*\sim P)$ and $(\exists P)(\sim+P) \equiv (\forall P)(+P \rightarrow \sim+\sim P)$ to be logically valid.

is strictly valuable exactly when it is valuable and at the same time it is not counter-valuable, and that an object is strictly counter-value exactly when it is counter-value and at the same time it is not valuable.

Another way out of this situation would be to simply make the general assumption that no object that is valuable is also counter-valuable. Such an assumption, however, seems too far-fetched and too optimistic.

Finally, let's consider the logical relations that take place between the modalities behind expressions of the form *It should be that A*, *It's good when A* and *It's bad when A*.

It seems that if something should be the case, then it is bad when it is not the case, i.e.

(42) $(\forall P)(*P \rightarrow -{\sim}P)$.

On the other hand, if it is bad when something is the case, then it should not be the case, i.e.

(43) $(\forall P)(-P \rightarrow *{\sim}P)$.

In turn, from (42) and (43) follows the formula

(44) $(\forall P)(-P \equiv *{\sim}P)$

and the equivalent formula

(45) $(\forall P)(*P \equiv -{\sim}P)$,

which says that any state of affairs should obtain if and only if it is bad, when it fails to obtain. Thus, the concepts of evil and ought are closely related logically. One could ask here whether the concepts of evil and ought are mutually definable. However, we believe that this is not the case and we interpret formulae (44) and (45) not as definitional formulae, but as axiological theses.

Of course, if it is bad when a certain state of affairs obtains, it is good when that state of affairs fails to obtain, i.e.

(46) $(\forall P)(-P \rightarrow +{\sim}P)$,

but not conversely. On the other hand, if anything should be the case, it is good when it is the case, i.e.

(47) $(\forall P)(*P \rightarrow +P)$,

but not conversely.

Note that formulae (45) and (46) logically imply formula (47) and formulae (45) and (47) logically imply formula (46). The formulae (46) and (47) are therefore equivalent on the grounds of formula (45).

Note also that formula (45) and formula (33) logically entail the following formula

(48) $(\forall P)(\forall Q)(-P \wedge -Q \rightarrow -(P \vee Q))$,

which states that if it is bad when a certain state of affairs obtains and bad when a certain other state of affairs obtains, then it is also bad when the disjunction of these states of affairs obtains. Moreover, formula (45) and formula (48) logically entail formula (33). The formulae (33) and (48) are therefore equivalent on the grounds of formula (45).

Let us note further, that formula (45) and formula (35) logically entail the formula

(49) $(\forall P)(-P \rightarrow {\sim}{-}{\sim}P)$,

which states that if it is bad when something is the case, then it is not bad when its negation is the case. Let us also note, that formula (45) and formula (49) logically entail formula (35). So, the formulae (35) and (49) are therefore equivalent on the grounds of formula (45).

Finally, let's note that formula (45) and formula (37) logically entail the formula

(50) $(\forall P)(-(-P \wedge P))$,

which states that it's bad when such a state of affairs obtains, which is bad when it obtains. Moreover, formula (45) and formula (50) logically entail formula (37). Therefore the formulae (37) and (50) are equivalent on the grounds of formula (45).

## 6. Logic

We will now give an outline of the logic we used in the earlier discussions. However, this will be only a purely logical framework. We will treat the formulae discussed earlier regarding value, ought, good, evil and existence as axiological or ontological theses and hypotheses.

Let us introduce a formal language for multimodal propositional logic with quantifiers binding propositional variables. The alphabet is given by

(a) a denumerable set of propositional constants. We refer to these as $\mathbf{P}_0, \mathbf{P}_1, \mathbf{P}_2, \mathbf{P}_3, \ldots$ etc.,

(b) a denumerable set of propositional variables. We refer to these as $P_0, P_1, P_2, P_3, \ldots$ etc.,

(c) the symbols of logical connectives ~ , ∧ and → for negation, conjunction and material implication respectively,
(d) a denumerable set of one-placed modal operators. We refer to these as $a_0$, $a_1$, $a_2$, $a_3$, … etc.,
(e) the symbol of existential quantifier: ∃,
(e) the auxiliary symbols ( and ) for parentheses.

The letters **P**, **Q**, **R**… are used as metalogical variables, to range over propositional constants, the letters P, Q, R… are used as metalogical variables, to range over propositional variables and the letters **a**, **b**, **c**… are used as metalogical variables, to range over modal operators.

We will call an expression any finite sequence of symbols belonging to the alphabet. The letters $\alpha$ and $\beta$ will replace arbitrarily fixed expressions. An inscription of the form $\alpha\{\mathbf{s}\}$ will be understood as an expression containing the symbol **s** as some of its elements. By $\alpha\{\beta/\mathbf{s}\}$, on the other hand, we will understand an expression formed by replacing the symbol **s** in the expression $\alpha$ in all places with the expression $\beta$.

A set of well-formed formulae is the smallest set X such that:

(F1) for any natural number $i$, $\mathbf{P}_i$ belongs to X,

(F2) if $\alpha$ belongs to X, then $\sim\alpha$ belongs to X,

(F3) if $\alpha$ belongs to X and $\beta$ belongs to X, then $(\alpha\wedge\beta)$ and $(\alpha\rightarrow\beta)$ belong to X,

(F4) if $\alpha\{\mathbf{P}\}$ belongs to X, and variable P does not occur in $\alpha\{\mathbf{P}\}$,

then $(\exists P)(\alpha\{P/\mathbf{P}\})$ belongs to X,

(F5) if $\alpha$ belongs to X, then for any natural number k, $\mathbf{a}_k\alpha$ belongs to X.

The letters A, B, C… are used as metalogical variables, to range over well-formed formulae. An inscription of the form A{**s**} will be understood as a formula containing the symbol **s** as some of its elements. The well-formed formulae represent states of affairs.

Other symbols used in the paper are introduced by following definitions:

(D1) $(A \vee B) = \sim(\sim A \wedge \sim B)$,

(D2) $(A \equiv B) = (A \rightarrow B) \wedge (A \rightarrow B)$,

(D3) $(\forall P)(\alpha\{P\}) = (\sim\exists P)(\sim\alpha\{P\})$.

Let us note that in well-formed formulae can occur only bound variables.

The set of theses is the smallest set Y containing:

(A0) all formulae that are substitutions of tautologies of propositional logic,

(A1) all formulae of the form $A\{B/\mathbf{P}\} \rightarrow (\exists P)(A\{P/\mathbf{P}\})$,

(due to (F4), variable P cannot appear in formula $A\{\mathbf{P}\}$),

and at the same time such that

(R1) if formula $(A \rightarrow B)$ belongs to Y and formula A belongs to Y, then formula B also belongs to Y,

(R2) if formula $(A\{\mathbf{P}\} \rightarrow B)$ belongs to Y and furthermore formula B does not contain the constant **P**, then formula $((\exists P)(A\{P/\mathbf{P}\}) \rightarrow B)$ also belongs to Y,

(R3) if formula $(A \equiv B)$ belongs to Y, then any formula of the form $(\mathbf{a}B \equiv \mathbf{a}A)$ also belongs to Y.

By virtue of the definition introducing the general quantifier symbol $\forall$, each formula of the form $((\forall P)(A\{P/\mathbf{P}\}) \rightarrow A\{B/\mathbf{P}\}))$ are a thesis. Moreover, if formula $(B \rightarrow A\{\mathbf{P}\})$ is a thesis and formula B does not contain constant **P**, then formula $(B \rightarrow (\forall P)(A\{P/\mathbf{P}\}))$ is also a thesis. In particular, if a formula of the form $A\{P\}$ is a theorem, then a formula of the form $(\forall P)(A\{P/\mathbf{P}\})$ is also a theorem. (Due to (F4), the variable P cannot occur in $A\{\mathbf{P}\}$.) Therefore, the set of theses is closed under the generalization rule.

It can be proven that the set of all theses is consistent. However, this is a technical matter that we will not discuss here.

Finally, let's draw attention to a few simple theorems illustrating some interesting aspects of the logic under consideration.

Theorem 1. Any formula of the form $(\exists P)(P)$ is a thesis.

Proof: By virtue of (A1), both the formula $\mathbf{P} \rightarrow (\exists P)(P)$ and the formula $\sim\mathbf{P} \rightarrow (\exists P)(P)$ are theses. Therefore also the formula $(\mathbf{P} \vee \sim\mathbf{P}) \rightarrow (P)(P)$ is a thesis and hence also the formula$(\exists P)(P)$ is a thesis.

The theorem can be read to say that by virtue of logic certain states of affairs obtain.

Theorem 2. There is a formula of the form $A(\mathbf{P})$ such that the formula $(\exists P)A(P/\mathbf{P})$ is a thesis and, at the same time, for any natural number *i*, the formula $A(P_i/\mathbf{P})$ is not a thesis.

Proof: By virtue of Theorem 1, any formula of the form $(\exists P)(P)$ is a thesis, while it can be shown that no propositional constant is a thesis.

Therefore, the set of all theses is not a constructive set.

Theorem 3. Any formula of the form $\sim(\forall P)(P)$ is a thesis.

Proof: Of course, both the formula $(\forall P)(P) \rightarrow \mathbf{P}$ and the formula $(P)(P) \rightarrow \sim\mathbf{P}$ is a thesis. Therefore, also the formula $(\forall P)(P) \rightarrow (\mathbf{P} \wedge \sim\mathbf{P})$ is a thesis and hence also the formula $\sim(P)(P)$ is a thesis.

Therefore, by virtue of logic alone, not all states of affairs occur.

Another theorem follows directly from this theorem.

Theorem 4. Any formula of the form $(\exists P)(\sim P)$ is a thesis.

Therefore, by virtue of logic, certain states of affairs do not occur.

By virtue of the next theorem, a state of affairs that implies anything is exactly a state of affairs that does not occur.

Theorem 5. Any formula of the form $\sim A \equiv (\forall P)(\ A \ \ P)$ is a thesis.

Proof: Obviously, any formula of the form $\sim A \rightarrow (A \rightarrow \mathbf{P})$, assuming that the constant $\mathbf{P}$ doesn't occur in the formula A, is a thesis, and therefore any formula of the form $\sim A \rightarrow (\forall P)(\ A \rightarrow P)$ is also a thesis. On the other hand, any formula of the form $(P)(\ A \rightarrow P) \rightarrow (A \rightarrow (\mathbf{P} \wedge \sim\mathbf{P}))$ is a thesis and therefore any formula of the form $(\forall P)(\ A \rightarrow P) \equiv \sim A$ is also a thesis.

The last theorem, finally, says that a state of affairs that occurs is exactly the state of affairs that is implied by all states of affairs.

Theorem 6. Any formula of the form $A \equiv (\forall P)(\ P \ \ A)$ is a thesis.

Proof: Of course, any formula of the form $A \rightarrow (\mathbf{P} \rightarrow A)$, assuming that the constant $\mathbf{P}$ does not occur in the formula A, is a thesis, and therefore any formula of the form $A \rightarrow (\forall P)(P \rightarrow A)$ is also a thesis. On the other hand, any formula of the form $(\forall P)(\ P \rightarrow A) \rightarrow ((\mathbf{P} \vee \sim\mathbf{P}) \rightarrow A)$ is a thesis and therefore any formula of the form $(\forall P)(\ P \rightarrow A) \equiv A$ is also a thesis.

One can also provide a semantic characterization of the logic in question using some version of the possible worlds semantics. Then introduce the concept of tautology and prove that any formula is a theorem if and only if it is a tautology. This allows you to use the method of counter-example. However, these are technical details that we will not discuss here.

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## Summary

The subject of the paper are selected aspects of ontological structures of perfect values in reference to the analyzes and comments of Henryk Elzenberg. The definitions of various types of values and the ontological premises of such definitions are discussed. The subject of attention was also logical relations between different concepts of perfect value and introduced in the paper notion of intrinsic value. An important feature of the Elzenberg analysis of the perfect values is their strict connection with the states of affairs which should be the case. According to the author, at the level of logical analysis of this issue, however, it is necessary to move away from the subject-predicate structure of the state of affairs and to treat the content of the phrase '*should be the case*' as a modality that refers directly to the situation (or state of affairs) taken as an integral whole. However, this requires a more detailed characterization of the relationship that can occur between situations (or states of affairs), *ie*. something that can should be the case, and objects that can be subjects of these situations and, therefore, can be valuable. Also considered is the connection of the concept of value with not what should be the case, but to what is good when it is the case, which is closer to the approach of Tadeusz Czeżowski. A certain multimodal logical calculus with quantifiers binding propositional variables is used to analyze the issue at hand.

**Keywords:** ought, good, perfect value, partial value, excellent value, intrinsic value.

## Streszczenie

Przedmiotem artykułu są wybrane aspekty ontologicznych struktur wartości perfekcyjnych w nawiązaniu do analiz i komentarzy Henryka Elzenberga. Omówiono definicje różnych typów wartości oraz ontologiczne przesłanki takich definicji. Przedmiotem uwagi były także relacje logiczne między różnymi pojęciami wartości perfekcyjnej oraz wprowadzonym w artykule pojęciem wartości wewnętrznej. Istotną cechą Elzenbergowskiej analizy wartości perfekcyjnych jest ich ścisłe powiązanie ze stanami rzeczy, które powinny zachodzić. Zdaniem autora, na poziomie analizy logicznej tego zagadnienia konieczne jest jednak odejście od podmiotowo-orzecznikowej struktury stanu rzeczy i potraktowanie treści wyrażenia „powinno tak być, że” jako modalności odnoszącej się bezpośrednio do sytuacji (lub stanu rzeczy) ujętej jako integralna całość. Wymaga to jednak bardziej szczegółowej charakterystyki relacji, jaka może zachodzić pomiędzy sytuacjami (lub stanami rzeczy), tj. czymś, co może zachodzić, a przedmiotami, które mogą być podmiotami tych sytuacji, a zatem mogą być wartościowe. Rozważa się również związek pojęcia wartości nie z tym, co powinno być, ale z tym, co jest dobrze, gdy jest, co jest bliższe podejściu Tadeusza Czeżowskiego. Do analizy omawianego zagadnienia wykorzystywany jest pewien multimodalny rachunek logiczny z kwantyfikatorami wiążącymi zmienne zdaniowe.

**Słowa kluczowe:** powinność, dobro, wartość perfekcyjna, wartość częściowa, wartość doskonała, wartość wewnętrzna.