

**Predication and Opposition in *Dào Dé Jīng***  
**Thought Experimental Analyses of (e.g.) 道可道 非常道 (III)**  
**Global Cross-cultural and Religious Aspects**

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**Abstract:**

True words sound like irony.  
(*Dào Dé Jīng* Ch. 78 – trans. Donia Zhang 2022)

In this contribution we apply methodologies of semantics of thought experiments (TE) to *Dào Dé Jīng* (*DDJ*). Like all TE research, the research is not foremost about explanation of the contents of *DDJ*, although some indications may be given, but it is intended as a manual how to read and understand *DDJ*, e.g., how to handle the many oppositions (pairs of opposites, linguistically speaking, antonyms), how to understand the many aphoristic conundrums, like the first line 道可道 非常道 *dào kě dào fēi cháng dào. Dào kě dào ...* may be analyzed and interpreted as modus ponens instantiation, whereby relevant aspect is derived as major from information in same chapter or elsewhere in *DDJ*, in this case, e.g., chapter 35, as in accordance with hermeneutic principle that interpretation of single parts may be derived from other parts or whole of the text, and vice versa (hermeneutic circle). *Wúwéi* (無為) and its aphorisms could be analyzed as (double) negation resulting in seeming contradictions (paradoxes) and univocal tautologies—as in Donia Zhang (2022) on translation of ‘non-action contrary to nature’—instead of mystifying adagial advices. In the first part of Interpretations we touch upon Wittgenstein’s ‘noticing of an aspect’ (1953, # xi), Da Costa’s and Beziau’s paraconsistent situation, optical illusions, *yīn-yáng diagram* (Ch. 32), *Huàtóus*, *Kōans* etc. Hofstadter (1979/1999) proposed a global cross-cultural hypothesis that feedback loops (as we know from present-day IT and AI) may represent the core of cognition, seat of consciousness. We show that logical analyses of spiritual thought experiments (STE), like *Huàtóus* and *Kōans*, are well-possible without denying possibly beneficial effects of meditation. Lastly, in Interpretations, we try to explain enigmatic nature of many aphorisms from an antithetical attitude towards views and practices of contemporary ruling government, as by putting the generic statements back into their particular context.

**Keywords:** semantics, thought experiments, opposition, aphorism, paradox, predicate logic, modal logic, modus ponens (instantiation), (double) negation, global cross-culturalism, *wúwéi* (無為), *dào kě dào fēi cháng dào* (道可道 非常道), Lǎozǐ (老子), *Dào Dé Jīng* (道德經), Daoism

## Introduction

*In memory of Anand Vaidya*

In this paper we propose a 20th-century linguistic and logical interpretation after Wittgenstein and Quine as because of emphasis of *Dào Dé Jīng* (*DDJ*) on *ming* (名), name (Ch. 1, 3-4) that may yield thought experiment identification, analyses and interpretations of many well-known aphorisms of *DDJ* (in fact, global cross-cultural aphorisms that may occur in western philosophy, too), which we particularly demonstrate for the opening line *dao ke dao fai chang dao* (featuring on *dao* 道) which may appear as enthymematic conclusion of an argument, that can be completed by explicitation of explanation of the first verse as in remainder of Ch. 1 and some more chapters, particularly Ch. 35.

Next to the classical analytical approach, that may touch on far-reaching investigations into basics of cognition, consciousness, information technology (IT) and artificial intelligence (AI), we discuss a couple of modal logical formalizations that may be triggered by metaphysical and religious readings of *DDJ*, meditating on classical Chinese interpretations, and ending with some global cross-cultural considerations as contemplated at 4th World Congress on Logic and Religion (WoCoLoR 4) in Sinaia (RO/EU) last summer.

We could indicate a couple of (formal logical) interpretations of first verses *dao de dao*, suggesting strong contradictory or paradoxical readings—as ‘Tao called Tao is not Tao’ as after Addiss and Lombardo (1993)—don’t accord with gist of the treatise, and a modal logical reading (as triggered by  $Da \neq Db$ ) may do more justice to argumentation of relative comparison of aspects, which we see in many chapters of *DDJ*, conjectures like everything comes with point of view as in Wittgenstein (1953) (*Phil. Inv*) # xi ... (*seeing as* and *seeing an aspect*) or Quine’s holistic rejection of (notions as) synonymy—Quine’s (1951) two dogmas of empiricism, Jacques Derrida’s (1974) there is nothing without context—‘il n’ya pas de hors-texte’ – Derrida (1967), Clarence I. Lewis (1918, 1932, 1959) rejection of (nonmodal) identity in favor of strict (modal) identity (as comment on Russell’s and Whitehead’s – 1910-1913 – *Principia Mathematica*), Nelson Goodman’s pluralism—of arts and worlds – e.g. Goodman (1976, 1978), Carl Hempel’s (1945) proposals of empiricist logic, or paraconsistent logical interpretations—as after e.g. Da Costa (1974).

Instead of discussing or investigating application of logical laws, which we expected to be *DDJ* main objective on our first hypothesis, it may turn out that *DDJ* may have no special preoccupation with logic and may use many simple and complex oppositions merely as rhetorical devices, which appears quite successful, working out quite effectively, conveying main contrasts, adding subtle shades of meaning by adding different aspects, comparisons from different points of view. Although *DDJ* may have no particular interest in logic, we consider our logical interpretation not intrusive but adequate to lay bare a basic structure of the text and background assumptions—like e.g. Hertogh (2024b) on *Zhuangzi*.<sup>1</sup>

The paper goes on defending a rationalist interpretation of *DDJ*, and manual how to clarify and resolve the many aphoristic conundrums of *DDJ*, notably the very first line.

## 1. Identifications

In the first part, Identifications (see Hertogh 2025b), we identified *Dao De Jing* (*DDJ*), e.g., first line 道可道 非常道, as a set of near-spiritual or religious thought experiments, (S/R)TE<sup>3</sup>, paradigmatic like Descartes's *Cogito*, for originated in time of crisis, starting off a new era and still famous today as initial text of Daoism<sup>4</sup>, to whose interpretation as an ancient philosophical or religious text application of procedure of hermeneutic circle (basic assumption is, in words of Lau (1958), that 'the greater part of the present Lao Tzu really belongs together' instead of only 'a haphazard collection of sayings' (Lau 1958, 349 n. 13) as well as its logical criticisms<sup>5</sup> may be fruitful. We prefer modern gender neutral translations as Donia Zhang (2022) or Clark Gillian (2021) over traditional translations, such as James Legge's, e.g., because of feminist nature of *DDJ* (e.g. Ch. 61 may be read in a post-feminist mode, holding on to gender stereotypes but turned in advantage of women 'Feminine quietness often outperforms masculine strength' – see also e.g. Lai 2000, 2007 for femininity, maternalism and Daoism, and e.g. Greenhalgh 1977, Li 2000, Gillian 2022 for feminism in China) and Zhang's quite consistent translation of *wuwei* statements, thereby resolving assumed paradoxes and mysteries of authoritative translations.

## 2. Analyses

The analyses we propose don't pretend to be the only possible logical resolutions, more analyses are possible, possibly starting from different versions and translations of *DDJ*, or from different interpretations of the same chapters and aphorisms (it is congruent with pluralistic philosophical assumptions as Goodman's and Quine's – see Hertogh 2020).

We propose three types of logical formalizations, the first (Section 2.1), applying to simple oppositions, showing there is no attempt to breach any logical laws in *DDJ*, the second (Section 2.2) which may apply to complex oppositions, applying predicate logic, deriving major (part of argument) from elsewhere in chapter or *DDJ* text, or more Chinese classics as *Analects*, *I Ching* and *Zhuangzi*, and the third (Section 2.3), a modal logical interpretation, applying modal logical box and diamond operators, and Kripke-style model of triple set of possible worlds, accessibility relation and valuation function.

Lastly (Section 2.4), we discuss a logical interpretations of concept of *wuwei* as (double) negation which could simplify traditional translations to a high extent.

### 2.1. Logical Analyses

Simple oppositions don't violate logical laws. There are some examples of linguistic opposition in Ch. 2, which may be considered as concerning mainly predicates:

beauty vs. ugliness  
kindness vs. unkindness  
difficult vs. easy  
long vs. short  
high vs. low  
front vs. back (Ch. 2 – Zhang 2022)

As Lau (1958) observes *yīn* and *shēng* (e.g. sound and speech, or Legge's musical notes and tones) is not like a simple opposition—is 'hardly of the same type as ... good and not-good, beautiful and ugly' (Lau 1958, 347 n. 2), who goes on to discuss different types of oppositions as gradual vs. abrupt.<sup>6</sup>

Oda and Zheng (2023) propose a generic predicate logical formula including conjunction to express contradiction where (inclusive or exclusive) disjunction may do, like this:

$$\forall x (\Psi x \vee \neg \Psi x)$$

which describes relations 'within an ultimate and universal set of *Dao* (x)' as on a pluralist view of *Dao* (e.g. 'myriad things' – see also e.g. Fox 2023), but not particularly contradiction, rather e.g. exclusive or inclusive disjunction, possibly depending on type of (semantic) opposition. (cf. Oda and Zheng 2023, 1<sup>6</sup>)

There are many more oppositions, or pairs of opposites, semantically speaking antonyms, in *DDJ*—in different grammatical forms, e.g. verbs:

to shrink vs. to expand  
to weaken vs. to strengthen  
to abolish vs. to promote  
to take vs. to give (Ch. 36)

which are part of what is called 'the subtle sign, the weak overcomes the strong' (Zhang 2022), 'Hiding the light (of his procedure)./ The soft overcomes the hard; and the weak the strong' (Legge 1891). 'subtle discernment: The submissive and weak will overcome the hard and strong' (Lau 1963).

And predicates again:

Therefore, the ancients wrote:  
The *bright* *Dao* looks *dark*;  
The *Dao* *forward* looks *backward*;  
The *smooth* *Dao* looks *rugged*. (Ch. 41 – italics added – 'even' and 'rough' synonyms of 'smooth' and 'rugged')

From different realms of reality, including (social) values, virtues vs. vices:

Misfortune is where good fortune rests;  
Good fortune is where misfortune hides  
Who knows whether it will be misfortune or good fortune?  
There are not established standards.  
Good suddenly turns into evil, kind suddenly turns into cruel. (Ch. 58)

Ethical values that collapse into their opposites when describing the way of the sage or good ruler:

So it is that the sage (ruler), wishing to be above men, puts himself by his words below them, and, wishing to be before them, places his person behind them. (Ch. 66 – Legge 1891 – ‘lead’ and ‘follow’ are synonyms of ‘be before’ and ‘be behind’)

This interpretation is consistent with logico-linguistic interpretation as offered in Zhuangzi paper (Hertogh 2024b) where we discussed e.g. interdependency of opposites as after Zhuangzi’s *wuhua* (物化) in *Butterfly Dream* (see also e.g. Chen 2020, Coutinho 2002, Komjathy 2007, 2021, Jiang 2011, Poškaitė 2017, Yao 2013). From perspective of studies of *Zhuangzi* the pairs of opposites may be interpreted as exemplifications of the principle of interdependency of opposites (e.g. *wuhua*) as between many more opposites, e.g., few/many, small/great (Ch. 34), thick/thin, highest/lowest virtue (Ch. 38), bright/dull, forward/backward, even/rough (Ch. 41) etc.; the interdependency is phrased and explained in different ways, e.g., as ‘subtle discernment’ regarding shrink/stretch, weaken/strengthen, lay aside/set up, give/take in Ch. 36 (‘This is called subtle discernment’), or ‘the blending of the generative forces’ regarding yin/yang (Ch. 42) (see translation Lau 1963).

DC Lau discusses *DDJ* oppositions at length in ‘The Treatment of Opposites in Lao Tzu’ (1958) and tries to explain them as slightly different from hexagrams and principle of constant circular change in *I Ching*, as (e.g.) ‘valuing the soft’, ‘abiding by the soft.’

## 2.2. Explicitating of Aspect

Complex oppositions may be analyzed by TE methodology of TE Matrix, which in this case comes down to explicitation of an aspect, or point of view, relevant context of comparison, (thematic) dimension etc.<sup>7</sup> It may remind of Jacques Derrida ‘il n’ya pas de hors-texte’ (Derrida 1967, e.g. there is nothing without context), or Wittgenstein’s (1953) contextualism (e.g. Vaidya 2023).

The Chinese signs of the first two lines of *DDJ* are the same in traditional and modern Chinese, we quote Chinese text and English translation from Zhang (2022), who uses modern Chinese transcript (different from traditional in e.g. *wuwei*); Hanyu Pinyin (including tone marks) is derived from e.g. *Wikibooks*. The title of the first chapter is omitted (like titles of all chapters in this paper) since translations vary widely, e.g., Embodying the Dao (Legge 1891), Reason’s Realization (Suzuki and Carus 1913), What is the Dao? (Goddard 1919):

道可道，非常道；  
名可名，非常名。(Chinese characters e.g. Zhang 2022)

*dào kě dào fēi cháng dào*  
*míng kě míng fēi cháng míng* (Hanyu Pinyin e.g. *DDJ* 2020 *Wikibooks*)

The dao that can be said is not the true Dao;

The name that can be called is not the real Name. (English translation e.g. Zhang 2022)

In the literature we find a great variety of translations, e.g. of *chang*. Fox (2023) refers to Boodberg (2007):

常 *ch'ang*, 'constant,' 'regular,' 'common,' 'ordinary,' 'persistent,' 'conventional,' 'enduring,' never meant 'eternal' or 'absolute' in our sense, as wrongly used by so many translators of the first couplet of the *Lao Tzu*. (Boodberg 2007, 603)

Apart from these translations we have found 'unvarying' (e.g. Waley 1934/1958), 'uncharted' and 'nature' (e.g. Blakney 1961), 'nature' and full expression or representation (e.g. Bahm 1956), 'immortal' (e.g. Red Pine 1996), 'everlasting' (e.g. Yang 1962), 'common' and things instead of names (e.g. Xu 2006), 'unchanging' (e.g. Richter 1988), 'permanent' (Duyvendak), 'true' and 'real' (e.g. Zhang 2022), 'perennial' (e.g. Ryden 2008). We will take no side in the debate and propose logical analyses for both, let's say, secular philosophical and (possibly westernized or Christianized) metaphysical religious positions by use of respectively classical logic and modal logic.<sup>8</sup>

Our first provisional formalization derived from proposition logic is rather complex, saying Dao under aspect *a*, is not equal, identical (with respect to, say,  $A_1$ ) to Dao under aspect *b*

[1]

$$D_a \neq D_b$$

$$D_a \neq_{(A_1)} D_b$$

A second formalization applies TE methodology and tries to find relevant aspect, explanation in more lines of the chapter or parts of the treatise, and was eventually successful in discerning, let's say, major of incomplete argument of first line in Ch. 35:

When the Dao is spoken out,  
it becomes plain and tasteless,

One can not see it, nor can hear it,  
but its effects are endless. (Ch. 35 – Zhang 2022<sup>9</sup>)

After exemplifying missing part of the argument, the analysis may be completed with help of predicate logic, where it appears the missing part is the major of the argument, generalizing the individualized statement of the first line:

[2]

*Suppose*

D	to be (true) Dao		
Dx	x is true Dao	(Ch. 1)	lit. x Daos
-Dx	x is not (true) Dao		
Sx	x can be said, Spoken	(Ch. 1)	or any other perceptual property

Deriving major ( $P_2$ ) from context or theory, in fact one (more) passage(s) from same treatise *DDJ*, e.g. Ch. 35<sup>10</sup> as on an individualized reading of the first line *dao ke dao...* ( $P_1$  - Chinese grammar does not distinguish between singular and plural, concrete or abstract here):

$P_1$	$Sa \wedge -Da$	(Ch. 1)
$P_2$	$Sx \rightarrow -Dx$	(Ch. 35)
	-----	
$C_1$	$Sa \rightarrow -Da$	(Ch. 1)
$C_2$	$Sx \rightarrow -Dx$	(Ch. 1)
$C_3$	$\forall x (Sx \rightarrow -Dx)$	

We may generalize from constant  $a$  to variable  $x$ , i.e., from  $C_1$  to  $C_2$ , as after John Norton (1991) definition of TE, where there is an inductive step from particularity of (TE) premise(s) to generality of conclusion:

Thought experiments are arguments which:

- (i) posit hypothetical or counterfactual states of affairs, and
- (ii) invoke particulars irrelevant to the generality of the conclusion. (Norton 1991, 129)

The core argument may be simplified to modus ponens instantiation as after Carnap (1966):

		[3]
$Sx \rightarrow -Dx$	(Ch. 35)	
$Sa$	(Ch. 1)	
	-----	
$-Da$	(Ch. 1)	

on which interpretation *dao ke dao fei chang dao* appears as minor and conclusion to major as derived from Ch. 35 and the original TE may be displayed like a bracketed TE argument (cf. Descartes's *Cogito*)

		[4]
—	—	
	Sa	
	-----	
	-Da	
—	—	

It is not just about imperceptibility, as some translations may suggest, in the sense of inaccessibility

by the five senses, for which there is support in Ch. 35 but also Ch. 14<sup>11</sup>, since the strongest formula is ‘is spoken’, whereby also possible nonsensuous perception and religious interpretations are included as e.g. Dao as a Godhead may be an abstract entity that is not directly accessible to the five common senses (like metaphysical entities as substance but also virtue, humility, simplicity etc.) but that can be spoken about. Many religions may say their Divine entity is accessible by indirect and/or nonsensuous perception, that goes beyond the Humean direct sensuous perception, as in visions, prophecies, miracles, signs etc. possibly mediated by supernatural agencies or the Divinity itself (in secular terminology these phenomena are partly covered by ESP, extra sensory perception, such as telepathy). Next, it may be a mode of perception that goes beyond words, discursive reasoning, logic as in meditation, *Kōans* and *Huàtóus*, where the words only point at a next level that is not expressible in words, nor accessible by logic, discursive reasoning and so on, in western religions e.g. emotivism. The latter interpretations may also go beyond the limits of religious TE, RTE, that are derived from phrasings and passages in religious texts.

Nevertheless, as we have argued in analyses and interpretations of STE as *Vipassanā Meditation*, *Kōans* and *Huàtóus*, logic may take us further than often suggested and above logical analyses are to be understood in this vein (see also Section 3.1.2). Besides, above logical symbolization may capture a manifold of nonmetaphysical and nonreligious interpretations of *DDJ*.

### 2.3. Modal Logic

When considering the second part about essential *Dao* and *Name*, ‘essential’ may be logically translated as ‘necessary’, with help of modal logical box operator  $\Box$  or (higher-order) predicate logic, symbolizing necessary by quantification over all (possible) worlds (e.g. Kripke).

As with help of modal box operator e.g.

$$Da \neq \Box Dx \quad a \text{ is Dao is not } x \text{ is necessarily Dao}$$

[5]

*Additionally suppose*

$Mx$   $x$  is/has a N/name

$$Ma \neq \Box Mx \quad a \text{ is a name is not } x \text{ is necessarily a name}$$

Or with help of Kripke semantics, supposing model  $\langle W, ||-, R \rangle$ , where  $W$  is a nonempty set of (possible)  $w$ (world)s,  $||-$  is a valuation function that assigns subsets of  $W$  to propositions, and  $R$  is a binary accessibility relation (e.g.  $yRx$ ) saying which  $w$ (‘s) are accessible to which  $w$ (‘s) e.g.

[6]

$$w_0 ||- Da \neq \forall w: w ||- Dx \quad a \text{ is Dao in actual world } (w_0) \text{ is not } x \text{ is Dao in all worlds}$$

[5] (and [6]) may go against an axiom of modal logic (e.g. Kripke 1959, 1 - [A]xiom 1))

$$\Box A \rightarrow A$$

[7]

since = equals  $\leftrightarrow$

So, we should change [3] into

$$Da \rightarrow \Box Dx$$

[8]

And we should change [4] into

$$w_0 \Vdash Da \rightarrow \forall w: w \Vdash Dx$$

[9]

## 2.4. Wúwéi (Double) Negation

*Wuwei* (or *wu-wei*, trad. Chin. 無為, mod. Chin. 无为 Pinyin *wúwéi*) may be literally translated as ‘not’ (無) ‘to do’, ‘to act’ (為), e.g. as ‘non-action’ (e.g. Liu 1991, Slingerland 2000/2003, Moon 2015), modified into variants as ‘effortless action’ (Slingerland 2000/2003), ‘actionless action’ etc., which latter term is itself contradictory. The concept is considered to have originated in *DDJ*, but is also used in Confucianism and (Zen) Buddhism, where it may signify e.g. non-attachment.

Many authors consider *wuwei* a core concept of *DDJ* and Daoism. E.g. Loy (1985) considers *wuwei* ‘the central paradox’ of Daoism:

*Wei-wu-wei*, ‘the action of non-action’, is the central paradox of Taoism and as a concept is second in importance to the Tao itself, which incorporates it... (Loy 1985, 74)

And Hansen (2007) in *SEP* considers *wei* and *wuwei* (無為 deeming action and non-deeming action) one of the important Daoist concepts (among more, like *Dao* 道 Way, Guide, Road, *De* 德 Virtuosity, Virtue, Power, *ming* 名 name, *chang* 常 constant, eternal, *pu* 樸 pre-linguistic purity).

Checking a variety of translations and comments, *wuwei* and its paradoxical statements in *DDJ* (e.g. in Ch. 3, 37, 38, 43, 48, 57, 63, 64 in Legge 1891 *Chinese Text Project*) may appear a problem of negation and double negation, possibly explosion principle of contradiction, from a contradiction may follow anything and this is indeed the case when you negate non-action which does not result in just one particular action but (possibly on modal interpretation) in all possible actions.

Law or principle of double negation is one of the basic logical laws or principles, next to law of identity (LID  $P = P$ ), law of excluded middle (LEM  $P \vee \neg P$ ), law of noncontradiction (LNC  $\neg (P \wedge \neg P)$ ) as acknowledged by e.g. Russell and Whitehead in *Principia Mathematica*:

...  $\neg\neg p \equiv p$

This is the principle of double negation, *i.e.* a proposition is equivalent of the falsehood of its negation. (Russell, Whitehead 1910-1913, \*4.13)

However, we could expect, analogous to our view on oppositions, that it is not about strict contradiction (formalized with help of conjunction) but about contextualized (exclusive or) inclusive disjunctions, that it is not about theoretical oppositions but practical courses of action (e.g. Slingerland 2000), that it is not a logical but rather a rhetorical device e.g. not a meaningless semantic formal contradiction but rather an emphatic pragmatic colloquial linguistic confirmation like *there ain't nothing*, meaning *there is nothing* instead of *there is not nothing* possibly meaning *there is something* or on explosion interpretation *there is everything* or on a modal view *there is possibly something/anything/everything*. On this interpretation the so-called paradoxes may lose their mystery and change into (emphatic) tautologies rather than contradictions, e.g. Donia Zhang (2022), who translates *wuwei* as no(n-)action contrary to nature (e.g. Ch. 43 twice, 45, 47, 48 twice, 57 no action..., 63, 64), *i.e.* action not contrary to nature, action in accordance with nature, natural law, or

non-action contrary to nature

no action contrary to nature

all action(s) in accordance with nature/natural law

which view occurs in *DDJ* again and again with and without contextual mention of *wuwei*. Interpretation of reference to natural law, nature is confirmed by e.g. Moon (2015):

... Away from its literal meaning of inactivity or taking no action, *wuwei* refers to not taking action that is against Natural Law. That is, letting Natural Law take its own course is important... (Moon 2015)

We may agree on Zhang's univocal near-tautological translations of, e.g., Ch. 3 and Ch. 64 which some comments may consider paradoxes and some translations (as Legge 1891's and Lau 1963's) render incomprehensibly abstract and mysterious:

Do things in accordance with nature,

Then the world will be well governed. (Ch. 3 – Zhang 2022)

instead of Legge's underdetermined and abstract:

When there is this abstinence from action,

good order is universal. (Ch. 3 – Legge 1891)

and Lau's mystifying adagial advice:

Do that which consists in taking no action,  
and order will prevail. (Ch. 3 – Lau 1963)

Zhang 2022 translation of Ch. 64 reads like a tautology:

And they [the sages] follow the natural laws with non-action contrary to nature. (Ch. 64 – Zhang 2022)

rather than incomprehensible translations like Legge's:

This is because the saint has no reason and is undefeated. (Ch. 64 – Legge 1891)

and Lau's still using unexplained and possibly inexplicable metaphysical terms from the first chapters like 'myriad creatures':

In order to help the myriad creatures to be natural and to refrain from daring to act. (Ch. 64 – Lau 1964)

The 19th-century 'very capable' but 'a bit pedantic' translations by James Legge et al. are criticized by John Bruno Hare, founder of Internet Sacred Text Archive (ISTA) in 2004, recommending Dwight Goddard's translation instead, that, however, still is quite impenetrable:

... The concepts of Taoism are very lucid, and wrapping them in too much verbiage, as Legge *et al* did, add an unneeded layer of obscurity...

The Chinese have developed (formal) logic in Mohism (see e.g. Mozi 2006-2023, Mei 1929, Liu and Zhang 2010, Hansen 1983). If, and in as far, rhetoric and informal use of logic in *DDJ* may have affected Mohist logic (and possibly vice versa in later editions of *DDJ* as also in Neo-Daoism) goes beyond the scope of the present research, but may possibly change some of the outcomes of TE analyses and interpretations.

We mention only one related example here, Gongsun Longzi (公孙龙 ca. 320-240 BCE) paradox:

白馬非馬

*pai ma fei ma*

white horse is-not horse. (quoted in Hansen 1983, 140)

which shares negation *fei* with first two lines of *DDJ*. It is discussed in e.g. White Horse Discourse (白馬論 – see at Gongsun Longzi in references), which could be considered sophistry showing the limits of logic and reason, of which Wittgenstein could have said ‘Now you are only playing with words.’ (Wittgenstein 1953, #67). Slingerland (2000) shows *wuwei* is unlikely to be understood in a relativistic, sophistic way as it has a long history in Chinese philosophy, from the (noble warrior in) *Book of Odes* to (the virtuous sage-ruler in) (Neo-)Confucianism of Xunzi, and in the sense of ‘try not to try’, it is, apart from political contexts, about how to acquired spiritual ideal of self-cultivation, either spontaneously in Daoism (‘not to try’) or by training in Confucianism (‘try’).

### 3. Interpretations

It is about multiple interpretations because we would principally prefer inclusive pluralism over an exclusive monistic interpretation. And with regard to *DDJ* this principle matches with a pluralist fourfold view of Dao as in Ch. 25

So, it is said the Dao is great, Heaven is great, Earth is great, and humans are great.  
These are the Four Greats in the universe, and humans are one of them.  
Humans are regulated by Earth, Earth is regulated by Heaven,  
Heaven is regulated by the Dao, and the Dao is regulated by its nature. (Ch. 25)

Our interpretation may match division of the ‘Four Greats’, humans, Earth, Heaven and Dao, in as far as this division may accord with threefold of our interpretations, secular (humans, Earth), metaphysical (Earth, Heaven) and religious (Heaven, Dao)—please, see Sections 3.1, 3.2 and 3.3.<sup>12</sup>

#### 3.1. Logico-linguistic Interpretations Wittgenstein-Quine

With regard to philosophy of language, logic (let’s say, standard classical logic)—Explicitating logical structure as with the help of classical logic, although *DDJ* is not a logical treatise, may yield the conclusion that logical laws are quite often adhered to, but higher-order predicate logic, modal logic may be required to add a metaphysical dimension as in accordance with metaphysical translations, such as Legge’s and Zhang’s, and many more.

It is obvious for the simple oppositions, linguistically speaking antonyms, as used in Ch. 2—e.g.  $\forall x (\Psi x \vee \neg \Psi x)$ . Complex oppositions, or comparisons under an aspect, dimension etc., are still but more difficult to formalize with help of predicate logic. Example *dao ke dao fei chang dao*  
e.g.  $Sx \rightarrow \neg Dx, Sa$  therefore  $\neg Da$  (see Section 2.2)

Complex oppositions may be analyzed with help of procedure called explicitating of an aspect (see Section 2.2). ‘Noticing of an aspect’ is also in Wittgenstein (1953) Pt. II Section xi, *seeing as, seeing under an aspect*. In the second part of *Philosophical Investigations* Ludwig Wittgenstein discusses differences between ‘seeing that’ and ‘seeing as,’ seeing something ‘under a new aspect’ and in this way gaining new knowledge about it, discovering a new aspect, seeing it

from a new point of view etc. This is a well-known psychological phenomenon introduced by (e.g.) Gestalt psychology (e.g. Jastrow 1901):

I contemplate a face. And then suddenly notice its likeness to another.

I see that it has not changed; and yet I see it differently. I call this experience ‘noticing of an aspect.’

(Wittgenstein 1953, # xi, 193)

and nowadays considered social constructivism (e.g. Gendler 1996), which may explain how thought experiments may create new knowledge about the (external) world, e.g., on the Aristotle/Galileo paradigm shift in gravity theory, rebaptized to ‘reconfiguration of conceptual commitments’

Between immoderate empiricism and immoderate platonism lies a third sort of explanation. Eschewing the assumption that there is sharp line between theory on the one hand, and raw data on the other, the position introduces an element of constructivism. It suggests that the new knowledge in the Galileo case comes neither from argument nor from insight, but from a reconfiguration of conceptual commitments on the part of the Aristotelian which enables him to see old phenomena in a new way. (Gendler 1996, 198)

which we explain in our 2015 PhD thesis, Ch. 4 of Identifications, ‘TE—Contradictio in Terminis?’, bridging the rationalism – empiricism gap in traditional Kantian mode by analysis of synthetic a priori statements, such as ‘ $7 + 5 = 12$ ’ and ‘A straight line between two points is the shortest’ (maths) or ‘In all communication of motion, action and reaction must always be equal’ (physics) or ‘the world must have a beginning’ (metaphysics)—where the new knowledge is not empirical, but acquired by recourse to intuition, and may reveal new principles (Hertogh 2015a, 150-155, Hertogh 2023b, 2024a), e.g., Albert Einstein in relativity physics, applying non-Euclidean, Riemannian geometrics (as involving curvatures), and Saul Kripke in logic, introducing noncontradictory analytic a posteriori propositions (e.g. ‘Hesperus is Phosphorus’, ‘water = H<sub>2</sub>O’—in e.g. Kripke 1980).

Optical illusions, such as *duck-rabbit* (e.g. Wittgenstein 1953, # xi, also derived from Jastrow 1901 – see Figure 1), Indian update of *bull-elephant* (see Figure 2), *Necker cube* (e.g. Wittgenstein 1961, # 5.5423 – see Figure 3), or *Penrose triangle* (e.g. Penrose 1989, 2004 - see Figure 4), show that it is about an either/or exclusive disjunctive phenomenon, either one sees a duck, bull, front cube, or a rabbit, elephant, back cube, our biological perception does not facilitate us with possibility to see both at the same time. In case of Penrose triangle we can’t see a triangle at all, no matter from which angle we see it, it is an impossible, self-contradictory figure or object; it cannot exist in Euclidean space (see Penrose 2004, 992).

Da Costa & Beziau (2020) discuss a situation in which both aspects may be retained, an inclusive disjunctive situation, or a ‘paraconsistent’ situation. They mention example of a cylinder (see Figure 5 – baptized *square-circle cylinder*), lit from two different sides casting both shadow of a square (or rectangle if it is a long cylinder) and a circle:

The cylinder appears as a square and as a circle. ‘It is a square’ and ‘It is not square’ are two propositions true about it considering that a circle is not a square. The cylinder is paraconsistent from this point of view, or better from these two points of view. This does not necessarily mean that the cylinder itself is intrinsically paraconsistent. (Da Costa & Beziau 2020, 323)

The description of opposites as in *DDJ* may result in paraconsistent situations, but not necessarily or in all situations, and, we may assume *DDJ*s discourse about oppositions is not meant to suspend any logical laws, although some logical laws may be breached in some particular situations. The oppositions are used as a rhetorical device rather than a foremost logical device.

### 3.1.1. Yīn-Yáng Diagram

The use of oppositions has been famously represented by the *yīn-yáng diagram* (see Figure 6). *Yīn* (陰 trad. Chin. 陰 – black in diagram) and *yáng* (陽 trad. Chin. 陽 – white in diagram) are introduced in Ch. 32:

If the *yīn qi* and *yáng qi* between heaven and earth harmonize, honeydew will fall,  
And people will naturally balance themselves. (Ch. 32)

And next Ch. 42:

The Dao is one and unique, which contains the two of yin and yang.  
Yin and yang intersect to generate a third state that produces all things.  
Everything is against yin and facing yang,  
Yin and yang are in constant exchange to form a new harmonious entity. (Ch. 42)

Yin and yang may remain within the category of simple oppositions, balancing and intersecting each other, in constant exchange and harmony, oppositions that possibly both contradict and complement each other.

The yin-yang diagram (*taijitu* — 太極圖 diagram (圖 *tú*) of the supreme ultimate (太極 *tàijí*) has been developed many centuries later in the Song Dynasty and may look like interdependency of opposites, or complementary yin/yang duality (Ting 2023)—different from Penrose triangle it is a (perceptually) well-possible, not (self-)contradictory figure, different from optical illusions as duck-rabbit, bull-elephant, Necker cube it is not ambiguous in exclusive disjunctive sense, different from square-circle cylinder it is not just like an inclusive disjunction, but rather a dualistic or binary unity, like a universe that is ruled by two intersecting opposites, as it is described in *DDJ*, a harmony of balancing interchanging opposites.

### 3.1.2. *Huàtóus* and *Kōans*

With regard to optical illusions and examples of feedback loops in *Gödel, Escher, Bach: An Eternal Golden Braid* (Hofstadter 1979/1999), we don't consider Hofstadter's cross-cultural hypothesis far-fetched as that optical illusions (such as Necker cubes, Penrose figures, rabbit-ducks, Kanizsa triangles, spinner dancers) could be considered congruent to Chán (禪 short for 禪那 *chánà* from Sanskrit *dhyāna* meaning 'meditation') *Huàtóus* (話頭 meaning 'word head'), Zen (anglicized Chán) *Kōans* (公案 meaning 'public case') and ancient forms of Taoist *yīnyáng* (阴阳), ambiguous syntheses of opposites. E.g. in the Necker cube one either sees left and top front first (most common angle) or right and bottom front as if congruent to one of the most famous modern *Kōans* by Hakuin Ekaku (白隱慧鶴 Edo Period Japan ca. 1686-1769):

Two hands clap and there is a sound,  
What is the sound of one hand?

And a traditional *Huàtóu* from *The Gateless Gate* by Zhaozhou Congshen (趙州從諗 Tang Dynasty China ca. 778–897), considered the greatest Chan master of the Tang dynasty:

Has a dog Buddha-nature or not?  
Zhaozhou answered, Wú (无). (Trans. Robert Aitken 1991)

reminds Thomas Nagel's *What It Is Like to Be a Bat* question that is eventually answered by a similar self-referential *un-ask the question*. Nagel's *Bat* as well as his speculative proposal of an objective phenomenology tries to unite opposites as objective and subjective and it can be considered a similar feedback loop based on analogy as it is the logical structure of the argument defining not only cognition but consciousness itself (see also Hertogh 2018, 2021b).

Douglas Hofstadter considers impossible objects and figures, optical illusions etc. in west and east, so-called feedback loops, basic building blocks of human cognition and consciousness—

an interaction between levels in which the top level reaches back towards the bottom level and influences it, while at the same time being itself determined by the bottom level. (Hofstadter 1979, 709)

As such, it may amount to building blocks of IT (information technology) and AI (artificial intelligence) as well. In these tumultuous days of globalization, and fear and uncertainty about robotization, AI (software designed to imitate aspects of intelligent human behavior – according to Webster's), it may be a comforting feeling to see basics of IT and AI going back on elementary concepts and logical figures of classical and ancient philosophy like *DDJ*, that may seem to be shrouded in mystery and mist as much as the near-technological future is not, which may be way more transparent and accountable. This paper is an attempt to contribute to international transparency of ecological and global cross-cultural classics.

And also these 'impenetrable' *Huàtóu* and *Kōan* conundrums are accessible and assessable with help of predicate logic as we have shown in contribution to 2nd USAPP Summit, July 21-24,

2021, in Manila, Philippines, identifying e.g. Hakuin's *Kōan* as a spiritual thought experiment.

We propose next (S)TE resolution, redefining clapping as a process of moving one body part to another body part in such a way that it results in producing a sound, introducing 'clapping' as a two-place predicate letter (e.g. Cxy or Mxy), that does not only apply to two hands but also to movement of fingers to hand palm thereby still producing a light sound

[11]

*Suppose*

M(xy)	Moving (body part) x to (body part) y
S(xy)	producing a Sound by moving x to y
a, b	left, resp., right hand
c, d	(one or more) finger(s), resp., hand palm
→	material implication <i>if..., then ...</i>

We may analyze two hands clapping as universal modus ponens, or universal instantiation (cf. Carnap 1966), as follows:

$$\begin{array}{l} M(xy) \rightarrow S(xy) \\ M(ab) \\ \hline S(ab) \end{array}$$

And next is how to logically formalize the sound of one hand clapping:

$$\begin{array}{l} M(xy) \rightarrow S(xy) \\ M(cd) \\ \hline S(cd) \end{array}$$

(see Hertogh 2021b, 96-97)

The context of these conundrums is often a dialogue between a Zen teacher and students, where the teacher poses a paradoxical question and the students try to find answers. Buddhist interpretation (as from Reps's and Senzaki's compilation) about dialog between teacher Mokurai and student Toyo:

For more than ten times Toyo visited Mokurai with different sounds. All were wrong.  
 For almost a year he pondered what the sound of one hand might be.  
 At last little Toyo entered true meditation and transcended all sounds. 'I could collect no more,' he explained later, 'so I reached the soundless sound.'  
 Toyo had realized the sound of one hand. (Reps, Senzaki 1998, 42)

We have shown that logical analysis of one hand clapping is easily possible as with help of (higher-order) predicate logic (higher-order because it involves a two-place instead of simply one-place predicate letter), and assume it is not about a soundless sound (paradoxical contradiction) but about a very soft sound. This being said, we won't deny the spiritual benefits meditation on this and more *Kōans* and *Huàtòus* may yield for the practitioners of Zen Buddhism, we only want to show that the *Kōans* are not ultimately impenetrable, irrational, illogical, contradictory, paradoxical, beyond words, beyond the realm of discursive logic, and so on, and we do think that meditation on a logically valid statement may yield same spiritual effects; in other words, the meditative experience is not brought about by (passage through) some illogical phase or realm, as one can meditate on the void as well, or on an image of the Godhead (e.g. dancing Shiva from Hinduism), on fragments from Holy Scriptures etc.

### 3.2. Metaphysical Interpretations incl Modal Logic

One can't deny that the metaphysical translations of first and many more verses of *DDJ* may find some justification, corroboration in the remainder of the text. E.g. Legge's (and many more) translations of *chang* in first verse as 'eternal' (Dao) we also find in Ch. 52, e.g., This is called the 'eternal Dao' (trans. Zhang 2022).

Philosophies may contain metaphysical terms such as 'essence' or 'substance' without being considered religious. There are many translations of *DDJ* that suggest a metaphysical interpretation of Dao, main concept and entity of Daoism. E.g., true Dao, real Name (Ch. 1 - Zhang 2022) and particularly Ch. 21:

It is so deep and dark, that there is essence in it,  
The essence is very real, that there is trust in it. (Ch. 21 – Zhang 2022)

Linguistically speaking, it may not matter if entities as Dao are considered metaphors or metaphysics. Words considered as polysemic complexes develop by metaphorical and metonymical extension from concrete to abstract entities e.g. from 'a road' or 'the Dao' 'that can be trodden' (Ch. 1, verse 1 in translation of e.g. Legge 1891) to an abstract road or way (e.g. 'true Dao' in Zhang 2022). Possibly distinction between metaphorical and metaphysical use is demarcated by capitalization, dao/way/etc. (e.g. metaphorical translations) or Dao/Way etc. (e.g. metaphysical translations), or possibly by italicization, underline etc., but these conventions of capitalization etc. may vary per language, genre and even individual authors, so they are no hard guarantees to distinguish metaphors from metaphysical entities, like it may remain difficult to decide on ontological commitments (see e.g. Fox 2023). Lau (1958) ('The Treatment of Opposites in Lao Tzu') considers 'abiding by the soft' the most important view of *DDJ*, related but slightly different from *I Ching*'s doctrine of circular change:

From these passages [in e.g. *Zhuangzi* about Laozi *DDJ*] we can see that the view that the lower is valuable, and that it is best to abide by the soft is one of the views most widely attributed to Lao Tzu. We would, therefore, be unlikely to go far wrong if we take this as the most important view of *Lao Tzu*. (Lau 1958, 349)

In a speculative way arguing about the treatment of opposites, such as lower and higher, female and male, soft and hard, weak and strong, Lau is defending this view, referring to e.g. Ch. 36 ('This is called the subtle sign, the weak overcomes the strong'), against objections as that terms like 'higher' and 'lower' will cease to have fixed application and become empty terms, e.g., since the terms are only used in a relative way and don't correspond to 'contradiction in things':

The gentle can overcome the strong, the soft can overcome the rigid,  
No one in the world does not understand this, but no one practices it. (Ch. 78)

Same arguments may be used against hermeneutic and phenomenological reasoning, but nevertheless, although the view does not stand up to analytical scrutiny, it shows a direction in which *DDJ* is and has been understood by Daoists and Chinese tradition.

According to e.g. Lau (1958), the situation of complementary and contradictory, balancing opposites may be bypassed in annihilation and return to its roots, unto a level of sophistication that is rather characteristic of *Zhuangzi* than *DDJ* (see Lau 1958, e.g. 360, Pt IV; see also e.g. Hertogh 2024b on e.g. wuhua 物化).

Possibly updating the ancient Chinese view, we could add from natural science that 'abiding by' the 'lower' may betray a remarkable similarity with gravity, where the lower may 'triumph' over the higher because of gravitational force of Planet Earth.

### 3.3. (Cross-)cultural (Religious) Interpretations

This Section—as different from Section 3.2—is about comparing properties of Dao, now considered as Divine—instead of only metaphysical—entity, with Divine entities of more (western) religions, e.g.: The Dao is one and unique... (Ch. 42).

These qualities match Divine properties in Buddhism, Judaism, Christianity, Islam etc., one and unique (Ch. 42), omnipresent (Ch. 34), eternal (Ch. 52), infinite (effects Ch. 4), deep, far-reaching, profound (Ch. 4, 21, 25), invisible (Ch 4, 14, 25, 40), inaudible (Ch. 14, 25), intangible (Ch. 14, 40), first cause (beginning of heaven and earth Ch. 1, ancestor of everything, older than God Ch. 4, beginning of the universe Ch. 14, beginning of everything Ch. 21, existed before the formation of Heaven and Earth, mother of everything Ch. 25, root of everything Ch. 52).<sup>13</sup>

Although there are also some indications that God is not the first origin and that Dao is different from God e.g. 'I do not know whose offspring it [the Dao] is, it looks older than God' (Ch. 4) and possibly, already quoted, 'Heaven is regulated by the Dao, and the Dao is regulated by its nature' (Ch. 25).

It may not be coincidental that *DDJ* cosmogony matches both religious and (present-day) natural scientific cosmogony as the beginning of all things, which is qualitatively different from the

universe, world it brings into being. However, this linear description of cosmogony (Ch. 1, 14, 21, 52) is not consistent with remarks on Dao having or relating to a cyclical structure (e.g. Operating cyclically and never exhausting... Ch. 25, e.g. The movement of the Dao is cyclical... Ch. 40). The cyclical view may also allow for many deities, daos, polytheism. (Possibly advanced Sinological studies could spell out these ambivalences.)

Not only Divine properties accord, but also some properties of the sages, and personal qualities the sages prescribe for the people, like simplicity and honesty (Ch. 38, 65, 74) surpassing capabilities like cleverness, craftiness etc. These qualities are confirmed in the preferred way of life:

The ancients were good at the Dao  
did not teach people to be smart and crafty  
but to be simple and honest (Ch. 65)

Those who live a simple life are wiser than those who live a luxury life (Ch. 74)

The sages are (in Ch. 75 and more chapters) equated with the wise, which may add wisdom like an indispensable part of religion.

Quite often religion, wisdom, the view of the sages is critical, if not contrary and opposite to views and practices of the contemporary (political) rulers. *DDJ* is explicitly political (see Ch. 28, 48) and against deterioration of ancient values by contemporary regimes of rulers, government etc.:<sup>14</sup>

Simple and original things are made into artifacts for the sages to use,  
They will become leaders in government, so it is inseparable from perfect politics. (Ch. 28)

And *DDJ* advises to abstain from engagement in current politics:

Too many political orders are unworkable,  
It is better to keep quiet and stay in the middle. (Ch. 5)

Although *DDJ* criticizes and rejects cleverness, craftiness etc., *DDJ* sophisticated aphorisms and paradoxical wisdom statements may be considered sophistry, trickery, too (cf. Chu 2021). However, in our view these seeming perplexing views and statements may lose their paradoxical character if considered in context of all of the treatise instead of studied as isolated aphorisms, for quite a few views are retaken later on and statements are nearly literally repeated. This may be considered a defect of composition of the treatise, but it may also bring about more clarity, reducing some of the mysterianism of individual statements that have become world-famous proverbs and sayings, common in many languages now. E.g.:

Those who know do not talk,  
Those who talk do not know. (Ch. 56)

Logical formalization may help to disambiguate e.g.:

[12]

*Suppose*

$\exists x$     existential quantifier, *there are some x ...*  
 $Kx$     x Know(s)  
 $Tx$     x Talk(s)  
-       negation

$\exists x (Kx \rightarrow \neg Tx)$         there are some people who know but do not talk  
 $\exists x (Tx \rightarrow \neg Kx)$         there are some people who talk but not know

Conclusion  $Kx \leftrightarrow Tx$ , there is no logical relation between knowing and talking, possibly related to dao can not be spoken, said etc. in e.g. Ch. 1.

The aphorism runs counter to common sense opinion about good practice in daily life, politics, law etc., and this opposition to daily usage constitutes mystery of the aphorism, which may be explained and clarified from an attitude of criticism of contemporary government and rulers. Part of the mystery may shrink if this rationale is explicitated, which may be particularly political.

Next, It may be logically interpreted as deviation from Paul Grice's Cooperation Principle (Grice 1975), maxims of quality and manner, that people usually speak truth, and perspicuously, for if one does not know where one is talking about one may not first feature on truth and clarity, and there is no guarantee that the statement will be true (rather to the contrary) (see also Hertogh 2025a on *The Liar forthcoming*). This aphorism is a very good example of *DDJ* beliefs, as in Ch. 78, that true statements sound like irony.

E.g. kind of Socratic aphorisms

Those know that they do not know are wise  
Those who do not know but think they know are unwise (Ch. 71)

Most importantly, these aphorisms may lose their paradoxical character if they are considered antithetical to the then ruling government, which may have a bad effect on the people, that is causing their defects etc. This negation effect is confirmed in Ch. 78

True words sound like irony. (Ch. 78<sup>15</sup>)

i.e. true words deny common sense and view of ruling government.

Slingerland (2000) assumes Daoism—in its later phases as Mawangdui version (see e.g. Henricks 1989, Kim 2012)—could be interpreted as criticizing Confucianism, e.g., Ch. 38 about Confucian rites and the beginning of disorder

In Laozi's view it is the rise of Confucian morality and values that ruined the original purity of the ancients and brought about the fall from *wu wei* (Slingerland 2000, 306).

And Slingerland continues about e.g. Ch. 48 and 63:

Laozi's purpose is thus – by means of a sort of *via negativa* – to reverse the process of decline begun by Confucius through stripping away the accredited layers of civilization and learnings that have obscured the Way, thereby allowing human beings once again to realize *wu-wei* perfection

... Laozi thus uses *wu-wei* in something close to its literal sense of 'non-action' or 'non-doing' and wields it in concert with other negative slogans such as 'no-activity' (*wushi*), 'no-desires' (*wuyu*), and 'no regarding' (*wuyiwei*) in order to dramatize his opposition to the ways of the contemporary fallen world. (Slingerland 2000, 307-308)

Although further on Slingerland suggests both religious Daoists and Confucianists may long for a Golden Age:

For the early Chinese (Daoist or Confucian), the Way represented a normative, metaphysical order that had once be realized in the world during a past Golden Age but from which their contemporary world had strayed. (Slingerland 2000, 314)

And the achievement of *wuwei* was considered as a 'reestablishment of the original state of harmony between the human and the Heavenly' (Slingerland 2000, 314).

Like some more esoteric religious views, *DDJ* may be considered elitist—drawing a divide between the (good) sages and the current (bad) governments and their obedient citizens—and this may amount to one of the main political, democratic or populist, criticisms of *DDJ*. Ames and Hall 2003 write in commentary to Ch. 41:

Indeed, there is a cultural elitism in Daoism that is reminiscent of classical Confucianism. It is Confucius himself who says: 'The common people can be made to travel along the way, but they cannot be made to realize it' (Analects 8.9). Importantly, both the Confucian and the Daoist are proactive, and what makes one 'common' for both of them is a lack of concentrated effort within their somewhat different regimens of self-cultivation.

Refuge to elitism may be another explanation why some *DDJ* statements are so mysterious, indeed esoteric, but we have seen that much of pedantry may be reduced by a competent translation; and it is

not sure the Chinese text was considered cumbersome in its days, maybe it is only a defect of the English translations, although antithesis to society remains an adequate explanation for reclusive language usage.

*DDJ* is received in abstract mode as a philosophical treatise, while it may have been intended as a historical text of the state of Chu, a regional part of the Zhou Dynasty.<sup>16</sup> Yan and Zeng (2021) investigate intermingling of language, culture and communication (eco-translatology) in Lin Yutang's and James Legge's translations of Ch. 2 and conclude

Tao Te Ching is not only a manifestation of Chu culture and civilization but also a bright pearl in the long history of China (Yan and Zeng 2021, 4).

During presentation at conferences, some questions in Q&A may have wanted to stress possible irrationalist interpretation of *DDJ*, that its aphorisms etc. are beyond words, logic, reason etc., similar criticism has been uttered during a conference on logical analyses of *Vipassana Meditation*. In the 1970's, Alan Watts's *Way of Zen* gained great popularity with an irrationalist interpretation of Zen (and, in the 1980's, Roland Barthes 1970/1983 poststructuralist account of Japan), which has fascinated the present writer for some time, too. However, the present writer may think now that the perplexity, absurdity interpretation may remain within realm of phenomenology and that a logical interpretation may enhance our linguistic, philosophical and religious analyses and interpretation of *DDJ*, like more philosophical and religious treatises. As answered the questions during the conferences, rational interpretations may understand irrational interpretations, but irrationalist interpretations may not comprehend rationalist interpretations, thereby meaning that the rationalist hypothesis may enhance and further research significantly more than the irrationalist hypothesis, and that's why we could prefer the former as students and researchers, that we may inevitably remain all of our life in face of the tradition of the great religions of the east.<sup>17</sup>

During WoCoLoR 4 there were analyses from more religions, exemplifying same structure of complementary and contrasting oppositions as visualized in yin-yang diagram, e.g., Wiesna Mond-Kozłowska's comparative study of the Judaeo-Christian symbol of the cross as sign of balancing opposites and generating order (Mond- Kozłowska 2023).

### Endnotes:

1. Abbreviations and logical notation:  
*DDJ*            *Dào Dé Jīng*  
TE              thought experiments  
STE             spiritual thought experiments  
RTE            religious thought experiments  
□                box operator *necessary/ily*  
◇                diamond operator *possible/y*  
→               material implication *if... then ...*  
↗                material nonimplication *if not ... then ...*

-	negation <i>no(t)</i>
$\wedge$	conjunction, ... <i>and</i> ...
$\vee$	(inclusive) disjunction, ... <i>or</i> ...
$\exists$	existential quantifier <i>for some, at least one, x it holds that</i> ...
$\forall$	universal quantifier <i>for all x it holds that</i> ...
=	identity, <i>identical to</i>
$\neq$	nonidentity <i>not identical to</i>
$\leftrightarrow$	biconditional ... <i>iff</i> ...
$\equiv$	necessary equivalence (strict biconditional) ... <i>iff necessarily</i> ...
$\nleftrightarrow$	nonbiconditional <i>not (... iff ...)</i>
$\langle W,   -, R \rangle$	Kripke model
W	set of Worlds
-	valuation function
R	accessibility Relation

2. 道德經 (Chinese), *Dàodéjīng* (Hanyu Pinyin), alternate transliterations *Tao Te Ching*, *Tao Teh King* is said to date from Chinese Warring States or Hundred Schools of Thought Period, and conceived by Laozi (老子 Lǎozǐ Lao[-][T]zu/[T]zǔ, Lao[-][T]ze, Lao[-][T]se etc.). Questions about authenticity of text(s) and author(s) are beyond the scope of this research, but we may make some remarks on composition and rhetorics of the text, as related to our thought experimental logical analyses.
3. This paper will add possible logical analyses and interpretations, opting for an (*Extended*) *Argument View* of TE, according to which TE are, logically speaking, incomplete arguments (e.g. enthymemes). It is about RTE, religious TE, in as far as *DDJ* is considered a religious treatise (instead of only a philosophical text). Although *DDJ* is part of the Eastern canon of classical treatises, the verses of *DDJ*, e.g. the first lines *dao ke dao fei chang dao* (analogous for *ming*), may not usually be contemplated in the mind, thought, like e.g. *Kōans* or *Huàtòus*, which are used for practicing mindfulness, meditation etc. and which are together with the *Vipassanā Meditation* perfect examples of spiritual thought experiments (STE).
4. Thomas Kuhn states in his *The Structure of Scientific Revolutions* (1962) that thought experiments may prosper in times of crisis such as beginning of new era (e.g. Descartes, Galileo) and modernism (e.g. Einstein) in western history of philosophy and science. The names of the historical period, Hundred Schools of Thought, Spring and Autumn and Warring States Period already indicate that Laozi's *DDJ* was conceived in kind of times of crisis when many states, such as Chu, Wu, Jin, Qi, were existing independently, just before unification of the Qin Dynasty in 221-206 BCE.
5. Hermeneutics may seem to be dominated by nihilistic and relativist presumptions as 'no man can jump over his own shadow' or 'all of interpretation is self-projection', but one may find oneself to be able to understand the act of translation as an act of negotiating and mediating between 'self' and 'other', 'project' oneself (as a reader) in another text and 'life world' or reach 'broadened encounters' (see e.g. Berger 2017, Kearney 2007, Ricoeur 1981).

When returning to traditional classics and hermeneutics, we should be very careful not to unnecessarily rehabilitate unwarranted obsolete (sexist, racist, antisemitic etc.) authority, prejudices, ontological assumptions etc. (cf. Gadamer 1989). Logic should counterbalance hermeneutics, not only to reveal basic structure of a text and counter nihilism and relativism, but also as applied in critical thinking, a societal application of formal and informal logic, defined as (e.g.) an academic methodology of deciding whether a claim is always true, sometimes true, partly true, or false (Hertogh 2015a, 64).

See also e.g. Bocheński's *Logic of Religion*:

When justification is concerned, it must be repeated, logic alone is competent, and no other discipline.  
(Bocheński 1965, 134-135)

And Tarski's view on logic as the basis of all sciences:

Logic is justly considered the basis ... of all other sciences, even if only for the reason that in every argument we employ concepts taken from the field of logic, and that ever correct inference proceeds in accordance with its laws. (Tarski 1941/1994, 101)

6. Oda and Zheng (2023) propose  $\forall x (\Psi x \wedge \neg \Psi x)$  and explain on p. 2 n. 2:

The interlocking Ying-Yang opposites, such as non-being/being and occult/manifest, are one and the same ultimate reality that embraces all. In the Daodejing, these opposites can be understood in 'correlative' logic and thinking (both/and), which are neither monist nor dualist (either/or)...

More specifically, we formulate correlative opposites into sentences about contradictions.

And it may depend on type of (semantic) opposition. Although lexical semantics may consider the word pairs of opposites or antonyms binary, the relation between the antonyms may vary as from gradual to abrupt (Lau 1958)—or updated by modern semantics

The term **antonym** (and the related **antonymy**) is commonly taken to be synonymous with opposite, but antonym also has other more restricted meanings. *Graded (or gradable) antonyms* are word pairs whose meanings are opposite and which lie on a continuous spectrum (hot, cold) *Complementary antonyms* are word pairs whose meanings are opposite but whose meanings do not lie on a continuous spectrum (push, pull). *Relational antonyms* are word pairs where opposite makes sense only in the context of the relationship between the two meanings (teacher, pupil)

(<https://en.wikipedia.org/wiki/Opposite> – *italics* added - retrieved May 24, 2025).

Part of thought experimental logical analyses of the aphorisms containing oppositions in *DDJ* consists in finding appropriate contexts, dimensions, aspects, points of view or comparison of the opposition in same chapter of elsewhere in *DDJ* text or possibly in related texts as *I Ching*, *Analects*, *Zhuangzi*, as well as appropriate logical operator or connective, which is, generally speaking, rather (inclusive or exclusive) disjunctive than contradictory.

7. In analyses of metaphors (e.g. Bartsch 1987, Leezenberg 2001, Hertogh 1989/1997) we may distinguish between standard semantic metaphors and context-dependent or pragmatic metaphors. The latter may be identified, analyzed and formalized with help of thematic dimensions, like a semantic term for context; in case of metaphors it is most often about the actual context, that is the sentence in which the metaphor theme appears. One may criticize this treatment as contextualism, but we don't think it boils down to relativism, possibly to relativity, saying that different parts of reality (domain, discourse etc.) may be analyzed and interpreted differently as in accordance with possibly different structure, texture, substrate etc. of different parts of reality. E.g. Galileo's gravity theory may hold (by approximation) for Planet Earth, Einstein's for micro- and macrocosm. E.g. Voodoo and Hollywood Zombies should be analyzed differently from *p-* or philosophical *Zombies* (see Chalmers 2017). E.g. poetical metaphors may be analyzed differently from philosophical metaphors, which latter ones are often a tip of a (theoretical) submerged model.

It would be a kind of word magic to suggest that a word may mean the same in each context. Historical and etymological research may show how word meanings develop by, e.g., metaphorical and metonymical extensions, whereby substantial use of a word in a new context may result in a new (dictionary) sense.

8. Fox (2023) claims there is no eternity in western or Christian sense in *DDJ*, so like Boodberg Fox rejects 'eternal' as translation of *chang* 常 etc., e.g.,

Many readers of the *Dao De Jīng* have identified an ontology associated with the text. In such an ontological reading, the term *dao* is taken to refer to some type of monolithic (hence the use of the definite article "The *Dao*"), eternal (a troubling yet consistent translation of *chang* 常 in the first chapter), abstract (hence the use of the upper case for '*Dao*'), and uniquely ineffable fundamental reality (fundamental reality posits a reality on which all other realities depend, as opposed to the concept of reality as interdependent and intercausal).

Fox (2023) defends a cyclical (instead of linearly eternal), concrete, interdependent and intercausal concept of *daos* (plural) against appearance to the contrary in the first chapters.

However, we may also conceive of a syllogistic argument in favor of the metaphysical-religious interpretation following Zhang, who translates the last concluding line of Ch. 52, involving *chang*, by ‘This is called “the eternal Dao”’, and *chang* in the first two lines of Ch. 1 as resp. ‘true’ (Dao) and ‘real’ (Name). Since Ch. 52 starts off with a linear cosmogony (‘Everything in the world has a beginning, this beginning is the root of everything’) it may confirm a similar interpretation of Ch. 1, assuming that possibly ambiguous parts of the first chapters are to be explained later in the text.

9. Translation of Ch. 35 by James Legge in Chinese Text Project:

But though the Dao as it comes from the mouth, seems insipid and has no flavour, though it seems not worth being looked at or listened to, the use of it is inexhaustible. (Legge 1891)

Translation of Ch. 35 by DC Lau:

The way in its passage through the mouth is without flavor.

It cannot be seen,

It cannot be heard,

Yet it cannot be exhausted by use. (Lau 1963)

10. Similar methodology may be practiced by more scholars of *DDJ* e.g. Oda and Zheng (2023), Oda (2024) after Sōseki Natsume (2004):

Argument 1 ...

1. 無名天地之始: Nameless is the beginning of heaven and earth. [*Daodejing*, ch. 1]

2. 道常無名: *Dao* (i.e. the ‘way’) is always nameless. [ch. 32]

3. 故道天地之始: Therefore, *Dao* is the beginning of heaven and earth. (Oda and Zheng 2023, 2)

In the article published after WoCoLoR 4 presentation Oda adds another example, as it appears derived from Japanese novelist Natsume Sōseki (夏目漱石, 1867–1916):

Argument 2 ...

1. 萬物的實體是道: ... The substance of everything is *Dao*. [chs. 4, 25]

2. 道不可知於五官: *Dao* cannot be known by the five senses. [chs. 14, 21, 35]

3. 故萬物的實體不可知於五官: Therefore, the substance of everything cannot be known by the five senses. (Oda 2024, from ‘Introduction’)

remarking at first premise of argument 1 that Oda uses Ryden’s 2008 translation of *DDJ*, and at first premise of argument 2 that Sōseki does not provide the original Chinese quotations for the second argument and that Oda has translated Sōseki’s Japanese into (traditional) Chinese and English. Oda explains both arguments are derived from Sōseki, who ‘learnt analytical methods of philosophy whilst studying Western logic and philosophy’ at Tokyo Imperial University; both arguments have an Aristotelian syllogistic structure, consisting of two premises and a conclusion, having S(ubject) and P(redicate) in conclusion and a M(iddle term) in each of the premises, (generalizing) resp. Barbara (all M-P, all S-M, all S-P) and Celarent (no M-P, all S-M, no S-P). (See Aristotle *Prior Analytics* e.g. Aristotle 2014, Copi et al. 2014, e.g. 211-254).

11. There are some more indications of imperceptibility of *Dao* in Ch. 14:

Looking at it, it cannot be seen, this is called ‘colorless;’

Listening to it, it cannot be heard, this is called ‘soundless;’

Touching it, it cannot be felt, this is called ‘formless.’ (Ch. 35 – Zhang 2022)

We may derive relevant major from notably Ch. 35 (and 14), generalizing *Dao* has no perceptual properties, *Dao* is imperceptible. However, see text at the end of Section 2.2 on different forms of perception.

12. Contra Goldin 2002 it may be argued that nonnative comments and translations of Chinese classics may improve on native comments and translations for at least two reasons in two innovative situations.

First, nonnative comments and translations can apply novel conventions (e.g. feminist orthography—see

- e.g. Zhang 2022 e.g. s/he), new methodologies (see Section 2, application of logical symbolism etc.), such as in this case, methodology of semantics of thought experiments, consisting of TE Matrix, and TE Diagram, which has been applied to e.g. Daoist (R)TE after lecture on Zhuangzi for Chongqing University in May 2013, results of which have been discussed in Hertogh 2022b.
- Second, nonnative comments and translations may add cross-cultural interpretations, e.g., comparison with Divine qualities of more eastern and western religions (please, see Section 3.3).
13. Full quotes of some properties, comparable to divine qualities:  
The Dao is running widely, and it is omnipresent everywhere. (Ch. 34)  
This is called the 'eternal Dao.' (Ch. 52)
14. Daoism had a great influence in Tang Dynasty, but Confucianism may have been Chinese state religion from the Han Dynasty in 202 BC through the imperial epoch in 1911.
15. Alternate translations of last line of Ch. 78 e.g. James Legge's:  
Words that are strictly true seem to be paradoxical.  
and D.C. Lau's  
Straightforward words seem paradoxical.
16. Zhang Yimou's 2002 *wuxia* (武俠 - martial heroes) movie 'Hero' may bring ancient history of Warring States to cinematic life, showing the many conflicts in those days, when China consisted of seven states, which situation ended with Qin state unification and building of the Great Wall. The movie is about an attempt to assassinate the King of Qin.
17. With regard to Christianity—Susana Gómez Gutiérrez argues in favor of rationality of theistic belief, involving theological paradoxical mysteries as Incarnation:  
Lastly, to account for the epistemic warrant of the doctrine as a Christian doctrine, I adopted Anderson's model, which follows Plantinga's proposals for the *rationality of theistic and Christian beliefs*. With this proposal, Plantinga responds to the foundationalist idea that to be rational, every theory or proposition must be based on basic beliefs such as experiential beliefs, self-evident truths, and so on. I did not follow up on this problem here, but if Anderson's model is acceptable, his project and mine respond to what I suppose is Kierkegaard's objection that the doctrine cannot be rational because we cannot give an account of it based on experience. *What Anderson and I, following him, would be showing is that the doctrine of the Incarnation can be rational without meeting that requirement.* (Gómez Gutiérrez 2023, 21 - italics added)
18. We omit most of the diacriticals and tone marks from Chinese, Pinyin and more transliterations, both in text and listing of references (e.g. 'Lao Tzu' instead of 'Lao Tzū'), only particularly in the abstract, in titles of (sub)sections, on first mention and explanation of the main terms Chinese characters and Pinyin including tone marks may be used.

## Bibliographical References<sup>18</sup>

### I. Some Chinese and Western Philosophy incl. Secondary Literature

- Aitken, Robert (Ed.) (1991). *The Gateless Barrier: The Wu-Men Kuan (Mumonkan)*. North Point Press: San Francisco. E.g. <https://terebess.hu/zen/gateless-barrier.pdf> (retrieved May 24, 2025).
- Analects* (論語) (480 - 350 BCE). Chinese Text Project, 2006–2025. English source: James Legge 1879. <https://ctext.org/analects> (retrieved May 24, 2025).
- Anderson, James (2007). *Paradox in Christian Theology: An Analysis of Its Presence, Character, and Epistemic Status*. Wipf & Stock: Eugene (OR).
- Aristotle (2014). *The Complete Works of Aristotle, The Revised Oxford Translation, 2 Volume Set, Edited by Jonathan Barnes*. Princeton University Press: Princeton.
- Barthes, Roland (1970). *L'Empire des signes*. Skira: Paris.
- Barthes, R. (1983). *Empire of Signs*, Translated by Richard Howard. Hill and Wang: New York. (Trans. Barthes 1970).

- Bartsch, Renate I. (1987). *Norms of Language, Theoretical and Practical Aspects*. Longman: London and New York.
- Berger, Douglas L., Moeller, Hans-Georg, Raghuramaraju, A. and Paul A. Roth (2017). 'Symposium: Does Cross-Cultural Philosophy Stand in Need of a Hermeneutic Expansion?' *Journal of World Philosophies*, 2: 121–143.
- Berger, Douglas L. (2017). 'Cross-Cultural Philosophy and Hermeneutic Expansion?' *Journal of World Philosophies*, 2: 121–125.
- Bochenski, Józef M. (1965). *The Logic of Religion*. New York University Press: New York.
- Boodberg, Peter A. (1957). 'Philological Notes on Chapter One of The Lao Tzu.' *Harvard Journal of Asiatic Studies*, 20: 598–618.
- Carnap, R. (1966). *Philosophical Foundations of Physics, An Introduction to the Philosophy of Physics*. Basic Books: New York.
- Chalmers, David J. (2017). 'Zombies on the Net.' *Consc.net*.
- Chen, Kan (2020). 'Wuhua Therapy: A Way to ZhiMian Unallowable Experience in the Context of Chinese Culture.' *Journal of Humanistic Psychology*, 60.1: 43–58.
- Chu, Jinyi (2021). 'The Aphoristic Way: Lev Tolstoy's Translations of the Dao de Jing'. *Comparative Literature Studies*, 58.1: 146–175.
- Cole, Peter, and Jerry L. Morgan (Eds.) (1975). *Syntax and Semantics Vol.3 Speech Acts*. Academic Press: New York.
- Confucius (2005). *The Analects of Confucius. Modern Chinese Translation by Bojun Yang and Shuping Wu, English Translation by Fuen Pan and Shaoxia Wen*. (Chinese English Bilingual Edition) Qi Lu Press : Jinan (SD/CN).
- Copi, Irving M., Cohen, Carl, and Kenneth McMahon (2014). *Introduction to Logic, 14th Edition, New International Edition*. (First Pub. 1953) Pearson : Essex.
- Costa, Newton C.A. Da (1974), 'On the Theory of Inconsistent Formal Systems.' *Notre Dame Journal of Formal Logic*, 15: 497–510.
- Costa, N.C.A. Da, and J.-Y. Béziau (2020). 'Is God Paraconsistent?' In: Silvestre et al. 2020: 321–333. E.g. <https://www.jyb-logic.org/papiers/god.pdf> (retrieved May 24, 2025).
- Coutinho, Steve (2002). 'The Abduction of Vagueness: Interpreting the Laozi'. *Philosophy East and West*, 52.4: 409–425.
- Dao De Jing (道德經)* (475 - 221 BCE). Chinese Text Project, 2006 - 2025. English source: James Legge 1891. <https://ctext.org/dao-de-jing> (retrieved May 24, 2025)
- Derrida, Jacques (1967). *De la grammatologie*. Minuit: Paris.
- Derrida, J. (1974). *Of Grammatology*. Trans. Gayatri Spivak. The Johns Hopkins University Press: Baltimore.
- Finley, Robert D. (2003). 'Dao De Jing: A Brief Illustrated Philosophy of Translation'. *Revision*, 26.1: 13–17.
- Fox, Alan (2023). 'Metaphorical Metaphysics in the Dao De Jing.' *Religions*, 14.9: 1–12. <https://doi.org/10.3390/rel14091188> (retrieved May 24, 2025)
- Gadamer, Hans-Georg (1960). *Wahrheit und Methode. Grundzüge einer philosophischen Hermeneutik*. Mohr: Tübingen.
- Gadamer, H.-G. (1989). *Truth and Method*. Trans. J. Weinsheimer and D. G. Marshall. Second Ed. (First Trans. 1975) Crossroad: New York.
- Gendler, Tamar S. (1996/2000). *Thought Experiment: On the Powers and Limits of Imaginary Cases*. (PhD diss., Harvard Univ. 1996) Routledge: London, New York.
- Gillian, Clark (2021). *The Gender Neutral Book of Dao*. Brave New Books: Amsterdam.
- Gillian, C. (2022). *The Gender Neutral Analects of Confucius*. Brave New Books: Amsterdam.
- Giles, Lionel et al. (Eds.) (1904). *The Sayings of Lao Tzu ... The Wisdom of the East*. The Orient Press: London.
- Goldin, Paul R. (2002). 'Those Who Don't Know Speak: Translations of the Daode Jing by People Who Do not Know Chinese'. *Asian Philosophy An International Journal of the Philosophical Traditions of the East*, 12.3: 183–195.

- Gongsun Longzi (白馬論) (320 - 250 BCE). *White Horse Discourse*. Chinese Text Project, 2006 - 2025. English source: Donald Sturgeon. <https://ctext.org/gongsunlongzi/bai-ma-lun> (retrieved May 24, 2025).
- Goodman, N. (1976). *Languages of Art, An Approach to a Theory of Symbols*. Hackett: Indianapolis (IN).
- Goodman, N. (1978). *Ways of Worldmaking*. Hackett: Indianapolis (IN).
- Gómez Gutiérrez, Susana (2023). 'Contradictions and Rationality in the Context of the Doctrine of the Incarnation'. *Asian Journal of Philosophy*, 2.2: 1–21.
- Greenhalgh, Susan (1977). 'Bound Feet, Hobbled Lives: Women in Old China.' *Frontiers: A Journal of Women Studies*, 2.1: 7–21.
- Grice, H. Paul (1975). 'Logic and Conversation.' In: Cole and Morgan 1975: 41–58.
- Hansen, Chad (1983). *Language and Logic in Ancient China*. The University of Michigan Press: Ann Harbor.
- Hansen, C. (2007). 'Daoism.' In: *The Stanford Encyclopedia of Philosophy* (Edward N. Zalta Ed.) <https://plato.stanford.edu/archives/spr2020/entries/daoism/> (retrieved May 24, 2025)
- Hempel, Carl G. (1945a). 'Studies in the Logic of Confirmation (I)'. *Mind*, NS, 54.214 (January 1945): 1–26.
- Hempel, C.G. (1945b). 'Studies in the Logic of Confirmation (II)'. *Mind*, NS, 54.214 (April 1945): 97–121.
- Hertogh, C. Peter (1997). 'Identification, Analysis, and Interpretation of Metaphorical Indicative Sentences of Subject-Predicate Form.' Trans. Unpublished Master's Thesis. UvA University of Amsterdam, Amsterdam 1989.
- Hertogh, C.P. (2013a). 'Scientific Methodology and Critical Thinking.' Open Lecture, April 11, 2013. Chongqing University: Chongqing (CQ/CN). [PPT, Video]
- Hertogh, C.P. (2013b). 'Turn to Butterfly Dream.' Presentation delivered on May 15, 2013, to Prof. Weixue Li's course on *Dao De Jing*. Chongqing University: Chongqing. [PPT]
- Hertogh, C.P. (2015a). 'Semantics of Thought Experiments.' Prov. PhD diss. VUB Brussels: Brussels (BE/EU).
- Hertogh, C.P. (2015b). 'Ibn Sina's Flying Man—Logical Analyses of a (Religious) Thought Experiment.' *Journal of Islamic Philosophy*, 9: 54–74.
- Hertogh, C.P. (2016). 'Thought Experiment Analyses of Rene Descartes' Cogito.' *Trans/Form/Acao*, 39.3: 9–22.
- Hertogh, C.P. (2018). 'Logical Analyses of Vipassanā Meditation.' *Contemporary Buddhism*, 19.2: 251–271.
- Hertogh, C.P. (2020). 'Goodman's Grue—Relativized Pluralism and Paradigmatic Thought Experiment (Whack)'. *Humanities Bulletin*, 3.1: 64–103.
- Hertogh, C.P. (2021a). 'Computation and Visualization Thought Experiments after Lakatos's Heuristic Guessing Method.' In: Trepczyński 2021: 271–297 (Ch. 10).
- Hertogh, C.P. (2021b). 'Thought Experiment Analyses of Huatous and Kōans.' In: Rivas 2021: 93–107.
- Hertogh, C.P. (2022a). 'I Have a Dream—On the Deductive Force of Logic in Politics.' *Intellectus*, 1.1: 42–56.
- Hertogh, C.P. (2022b). 'Semantic Analyses of Hilary Putnam's Twin Earth (Ft. TE Diagram)'. In: Rezaei 2022: 501–531 (Ch. 24).
- Hertogh, C.P. (2023a). 'The Conceivability of Consciousness—Kirk's and Chalmers's Zombie Thought Experiments.' *London Journal of Research in Computer Science and Technology*, 23.1: 21–41.
- Hertogh, C.P. (2023b). 'Semantics of Galileo's Gravity (Thought) Experiments'/'Semántica de los experimentos (mentales) de gravedad de Galileo.' *Analítica Revista de Filosofía*, 3: 39–63.
- Hertogh, C.P. (2024a). 'Thought Experiment Analyses of Albert Einstein's Elevator'/'Análisis del experimento mental del elevador de Albert Einstein.' *Analítica Revista de Filosofía*, 4: 10–40.
- Hertogh, C.P. (2024b). 'Turn to Butterfly Dream: Zhuangzi's Thought Experiments and Animal Consciousness.' *Anais de Filosofia Clássica*, 17.33: 74–114.
- Hertogh, C.P. (2025a). 'Semantics of The Liar.' (prov. title, possibly forthcoming)
- Hertogh, C.P. (2025b). 'Hermeneutics and Logic of *Dao De Jing*, Thought Experimental Analyses of (e.g.) 道可道 非常道 (I)'. (prov. title, possibly forthcoming)
- Hertogh, C.P. (2025c). 'Predication and Opposition in *Dào Dé Jīng*, Daoism and Ecofeminism (II)'. (prov. title, possibly forthcoming)
- Hofstadter, Douglas R. (1999). *Gödel, Escher, Bach: An Eternal Golden Braid*. (First Pub. 1979) Basic Books: New York.

- Hofstadter, D. R. (2007). *I Am a Strange Loop*. Basic Books New York.
- Jastrow, Joseph (1901). *Fact and Fable in Psychology*. Orig. Houghton, Mifflin and Co.: Boston and New York, 1900. MacMillan and Co.: London.
- Jiang, Tao (2011). 'Two Notions of Freedom in Classical Chinese Thought: The Concept of Hua 化 in the *Zhuangzi* and the *Xunzi*'. *Dao*, 10: 463–486.
- Kearney, Richard (2007). 'Paul Ricoeur and the Hermeneutics of Translation'. *Research in Phenomenology*, 37, 147–159.
- Kierkegaard, Søren (1843). *Enten-Eller*. Reitzel: Copenhagen.
- Kierkegaard, S. (1992). *Either/Or: A Fragment of Life*. Translated by Alastair Hannay (Abridged Version) Penguin: London.
- Kim, Hongkyung (2012). *The Old Master: A Syncretic Reading of the Laozi from the Mawangdui Text A Onward*. State University of New York Press: Albany.
- King, Martin Luther Jr. (1963). 'I Have a Dream, Delivered 28 August 1963, at the Lincoln Memorial, Washington D.C.'. *American Rhetoric*. [Transcript]
- Komjathy, Louis (2007). *Cultivating Perfection: Mysticism and Self-transformation in Early Quanzhen Daoism*. Brill: Leiden.
- Komjathy, L. (2021). 'Daoism and Animals'. In: *Encyclopaedia Britannica*, Saving Earth.
- Kripke, Saul A. (1959). 'A Completeness Theorem in Modal Logic'. *The Journal of Symbolic Logic*, 24.1: 1–14.
- Kripke, S.A. (1963). 'Semantical Considerations on Modal Logic.' *Acta Philosophica Fennica*, 16: 83–94.
- Kripke, S.A. (1980). *Naming and Necessity*. Basil Blackwell: Oxford.
- Kripke, S.A. (2019). 'Naming and Necessity Revisited.' Special Lecture for Center for Logic and Language, Institute of Philosophy, University of London, May 30, 2019. [Video YouTube]
- Kuhn, Thomas S. (1970). *The Structure of Scientific Revolutions*. Enlarged 2nd Ed. (First Ed. 1962) University of Chicago Press: Chicago.
- Lai, Karyn Lynne (2000). 'The Daodejing: Resources for Contemporary Feminist Thinking'. *Journal of Chinese Philosophy*, 27.2: 131-153.
- Lai, K.L. (2007). 'Ziran and Wuwei in the Daodejing: An Ethical Assessment'. *Dao*, 6: 325–337.
- Leezenberg, Michiel M. (2001). *Contexts of Metaphor*. Elsevier Science: Oxford.
- Lau, Din Cheuk (1958). 'The Treatment of Opposites in Lao Tzu.' *Bulletin of the School of Oriental and African Studies*, 21.2: 344–360.
- Li, Yuhui (2000). 'Women's Movement and Change of Women's Status in China'. *Journal of International Women's Studies*, 1.1: 30–40.
- Liu, Fenrong, and Jialong Zhang (2010). 'New Perspectives on Moist Logic.' *Journal of Chinese Philosophy*, 37.4: 605–621.
- Liu, Xiaogan (1991). 'Wuwei (Non-Action): From Laozi to Huainanzi.' *Taoist Resources*, 3.1: 41–56.
- Loy, David (1985). 'Wei-wu-wei: Nondual action'. *Philosophy East and West*, 35.1: 73–87.
- Moon, Seungho (2015). 'Wuwei (Non-action) Philosophy and Actions: Rethinking "actions" in School Reform.' *Educational Philosophy and Theory*, 47.5: 455–473.
- Mei, Yi-Pao (1929). *The Ethical and Political Works of Motse*. Arthur Probsthain: London.
- Mond-Kozłowska, Wiesna (2023). 'The Universal Symbol of the Cross as the Sign of Balancing Opposites and Generating Order. A Comparative Study.' Presentation at 4th World Congress on Logic and Religion (WoCoLoR 4), Sinaia (RO/EU). September 3-8, 2023.
- Mozi (墨子) (490 - 221 BCE). Chinese Text Project, 2006 - 2025. English source: W.P. Mei 1929. <https://ctext.org/mozi> (retrieved May 24, 2025).
- Natsume, Sōseki (2004). *Sōseki zenshū, bessatsu chū*. (*The Works of Sōseki, Separate Volume Middle*), Vol. 26. Iwanami: Tokyo.
- Needham, Joseph (1956). *Science and Civilisation in China, Volume 2 History of Scientific Thought*. Cambridge University Press: Cambridge.

- Needham, J. (1962). *Science and Civilization in China, Vol. 4 Physics and Physical Technology, Part 1 Physics*. Cambridge University Press: Cambridge.
- Norton, John D. (1991). 'Thought Experiments in Einstein's Work.' In: Horowitz and Massey 1991: 129–148.
- Oda, Takaharu, and Jieyou Zheng (2023). 'The Buddhist Sengzhao's Roots in Neo-Daoism/Ex Contradictione Nihil'. Presentation at 4th World Congress on Logic and Religion (WoCoLoR 4), Sinaia (RO/EU). September 3-8, 2023.
- Penrose, Roger (1989). *The Emperor's New Mind: Concerning Computers, Minds and The Laws of Physics*. Oxford University Press: Oxford.
- Penrose, R. (2004). *The Road to Reality, A Complete Guide to the Laws of the Universe*. Jonathan Cape: London.
- Plantinga, Alvin (2015). *Knowledge and Christian Belief*. William B. Eerdmans: Grand Rapids (MI).
- Poškaitė, Loreta (2017). 'The Embodiment of Zhuangzi's Ecological Wisdom in Chinese Literati Painting (wenrenhua 文人畫) and Its Aesthetics'. *Asian Studies*, 5.1: 221–239.
- Pregadio, Fabrizio (2013). 'Religious Daoism.' In: *The Stanford Encyclopedia of Philosophy* (Edward N. Zalta and Uri Nodelman Eds.).
- Quine, Willard V.O. (1951). 'Two Dogmas of Empiricism.' *The Philosophical Review*, 60: 20-43.
- Quine, W.V.O. (1960). *Word and Object*. MIT: Cambridge (MA).
- Quine, W.V.O. (1969). *Ontological Relativity and Other Essays*. Columbia University Press: New York.
- Quine, W.V.O. (1970). *Philosophy of Logic*. Prentice-Hall: Englewood Cliffs (NJ).
- Quine, W.V.O. (1980). *From a Logical Point of View, Nine Logico-Philosophical Essays*, Second Revised Edition, First Ed. 1953. Harvard University Press: Cambridge (MA).
- Reps, Paul, and Nyogen Senzaki (1998). *Zen Flesh, Zen Bones: A Collection of Zen and Pre-Zen Writings*. Tuttle: North Clarendon (VT).
- Rezaei, Nima (Ed.) (2022). *Integrated Science 2050: Transdisciplinarity*. Springer Nature: Cham.
- Ricoeur, Paul (1981). *Hermeneutics and the Human Sciences, Essays on Language, Action and Interpretation*, Trans. and Ed. John B. Thompson. Cambridge University Press: Cambridge.
- Rivas, Virgilio (Ed.) (2021). *PAP Transactions ... 2nd USAPP Summit July 21-24, 2021*. Manila.
- Rosen, Stanley (1991). 'Squaring the Hermeneutical Circle.' *The Review of Metaphysics*, 44.4 (Jun., 1991): 707–728.
- Ross, Edward (2016). 'Hakuin Ekaku, What is the Sound of One Hand Clapping?' *Canons: The McGill Undergraduate Journal of Religious Studies*, 2016: 11–17. <https://tereless.hu/zen/clapping.pdf> (retrieved May 24, 2025)
- Russell, Bertrand, and Alfred North Whitehead (1910, 1912, 1913). *Principia Mathematica, 3 Volumes*. Cambridge University Press : Cambridge; 2nd edition, 1925 (Vol. I), 1927 (Vols II, II); abridged as *Principia Mathematica to \*56*, Cambridge University Press : Cambridge, 1956. (Page numbers are to the second edition.)
- Silvestre, Ricardo, Benedikt, Göcke, Béziau, Jean-Yves and Purushottama Bilimoria (2020). *Beyond Faith and Rationality Essays on Logic, Religion and Philosophy*. Springer International Publishing: Cham.
- Slingerland, Edward G. (2000). 'Effortless Action: The Chinese Spiritual Ideal of Wu-wei.' *Journal of the American Academy of Religion*, 68.2: 293–327.
- Slingerland, E.G. (2003). *Effortless Action: Wu-wei as Conceptual Metaphor and Spiritual Ideal in Early China*. Oxford University Press: New York.
- Tarski, Alfred (1941/1994). *Introduction to Logic and to the Methodology of the Deductive Sciences*. Fourth Rev. Ed. by Jan Tarski. Oxford University Press: New York.
- Ting, Caroline Pires (丁小雨) (2023). 'The Symbolism of Complementary and Contradictory Opposition: A Comparative Analysis of Chinese and Western Ontological Constructs.' Presentation at 4th World Congress on Logic and Religion (WoCoLoR 4), Sinaia (RO/EU). September 3-8, 2023.
- Trepczyński, Marcin (Ed.) (2021). *Philosophical Approaches to the Foundations of Logic and Mathematics, In Honor of Stanisław Krajewski*. Brill : Leiden.

- Vaidya, Anand Jayprakash (2023). 'On the Role of Argumentation in Certification.' Presentation at 4th World Congress on Logic and Religion (WoCoLoR 4), Sinaia (RO/EU). September 3-8, 2023.
- Watson, Burton (1968). *The Complete Works of Chuang Tzu*. Columbia University Press: New York.
- Watts, Alan (1957). *The Way of Zen*. Vintage: New York.
- Wittgenstein, Ludwig J.J. (1953). *Philosophical Investigations*. Basil Blackwell: Oxford.
- Wittgenstein, L.J.J. (1961). *Tractatus Logico-Philosophicus*. Trans. McGuinness, B.F. and D.F. Pears and with the Introduction by Bertrand Russell. Routledge and Kegan Paul: London, New York.
- Wu, Kuang-ming (1981). 'Trying Without Trying: Toward a Taoist Phenomenology of Truth.' *Journal of Chinese Philosophy*, 8.1: 143–167.
- Yan, Peijie, and Yajun Zeng (2021). 'A Study on the English Translation on Chapter Two of Tao Te Ching from the Perspective of Eco-Translatology: Lin Yutang's and James Legge's Versions.' *International Journal of English Language Studies*, 3.5: 1–4.
- Yi Jing* (易經) (1000 - 750 BCE). Chinese Text Project, 2006 – 2025. English source: James Legge 1882. <https://ctext.org/book-of-changes/yi-jing> (retrieved May 24, 2025).
- Zai, Jenia (Meng) (2015). *Taoism and Science: Cosmology, Evolution, Morality, Health and More*. Ultravivum: Brisbane.
- Yao, Zhihua (2013). "'I Have Lost Me" Zhuangzi's Butterfly Dream'. *Journal of Chinese Philosophy*, 40.3/4: 511–526.
- Zhuangzi* (莊子) (350 - 250 BCE). Chinese Text Project, 2006 – 2025. English source: James Legge 1891. <http://ctext.org/zhuangzi> (retrieved May 24, 2025).

## II. Some (EN, ES, FR) Translations of *Dao De Jing*

- Addiss, Stephen and Lombardo, Stanley (1993). *Lao-Tzu Tao Te Ching, Introduced by Burton Watson, Translated with Translators' Preface, Glossary, and Pronunciation Guide by Stephen Addiss and Stanley Lombardo, Ink Paintings by Stephen Addiss*. Hackett Publishing Company: Indianapolis. <https://terebess.hu/english/tao/Addiss-Lombardo-Watson.pdf> (retrieved May 24, 2025)
- Ames, Roger T., and David L. Hall (2003). *Daodejing 'Making this Life Significant' A Philosophical Translation*. Ballantine Books: New York.
- Bryce, Derek et al. (Eds.) (1991). *Tao-Te-Ching: With summaries of the writings attributed to Huai-Nan-Tzu, Kuan-Yin-Tzu and Tung-Ku-Ching*. Samuel Weiser: York Beach.
- Chalmers, John (Ed.) (1868). *The Speculations on Metaphysics, Polity, and Morality of 'The Old Philosopher' Lau-tsze*. Trübner: London.
- Chan, Wing-tsit (1963). *The Way of Lao Tzu: Tao-te ching*. Bobbs-Merrill: Indianapolis.
- Dao De Jing* (2020). Chinese source Dao De Jing in Traditional Chinese: <https://www.gutenberg.org/files/7337/7337-0.txt> (retrieved May 24, 2025)  
English translation James Legge: <https://www.gutenberg.org/files/216/216-h/216-h.htm> (retrieved May 24, 2025) Wikibooks.org [https://en.wikibooks.org/wiki/Dao\\_De\\_Jing](https://en.wikibooks.org/wiki/Dao_De_Jing) (retrieved May 24, 2025).
- Duyvendak, Jan J.L. (1954). *Tao Te Ching: The Book of the Way and Its Virtue*. John Murray: London. <https://terebess.hu/english/tao/duyvendak.html#Kap01> (retrieved May 24, 2025).
- Eno, Robert (2016). 'Dao De Jing.' UFL.edu (University of Florida) <http://www.fang.ece.ufl.edu/daodejing.pdf> (retrieved May 24, 2025)
- Goddard, Dwight, and Henri Borel (1919/2007). *Laotzu's Tao and Wu Wei*. First Pub. 1919. Cosimo: New York. <https://sacred-texts.com/tao/ltw/index.htm> (retrieved May 24, 2025)
- Henricks, Robert G. (1989). *Lao-tzu: Te-Tao Ching: A New Translation Based on the Recently Discovered Ma-wang-tui Texts*. Ballantine Books: New York.
- Houang, François and Leyris, Pierre (1979). *La Voie et sa vertu: Tao-tê-king*. Seuil: Paris.
- Hwang, Shi Fu (1991). *Laozi Tao Te Ching*. The Taoist New Library: Austin (TX).

- Ivanhoe, Philip J. (2002). *The Daodejing of Laozi*. Seven Bridges Press: New York and London.
- Julien, Stanislas (Ed.) (1842). *Le Livre de la Voie et de la Vertu*. Imprimerie Royale: Paris.
- Lau, Din Cheuk (1963). *The Tao Te Ching by Lao Tzu*. Penguin Books: London.  
<https://terebess.hu/english/tao/lau.html> (retrieved May 24, 2025)
- Lau, D. C. (2001). *Tao Te Ching (New Bilingual Ed.)*. Chinese University Press: Hong Kong.
- Lau, D.C. (老子) (2009). *Laozi/Lao Tzu Tao Te Ching. Trans. D.C. Lau. Bilingual Ed.* First Ed. Trans 1963  
Penguin Books: London. (Chinese Great Ideas)
- Lau, J. (2003-2023). *道德经 Dao De Jing (Tao Te Ching)*. Chinese Reading Center. Yellow Bridge  
<https://www.yellowbridge.com/onlinelit/daodejing.php> (retrieved May 24, 2025).
- Lin, Paul J. (1977). *A Translation of Lao-tzu's Tao Te Ching and Wang Pi's Commentary*. Center for Chinese Studies (University of Michigan): Ann Arbor.
- Legge, James (1879). *The Sacred Books of China, Pt 1-6 The Texts of Confucianism*. First Ed. Clarendon Press: Oxford.
- Legge, James (1882). *Sacred Books of the East, Vol. XVI, Pt 2, The Yi King*. First Ed. Clarendon Press: Oxford.
- Legge, James (1891). *The Sacred Books of the East, The Texts of Taoism*. First Ed. Clarendon Press: Oxford.
- Legge, James (1891). *Dao De Jing (道德經)*. Chinese source: Warring States (475 BC – 221 BC) English source: James Legge 1891. Chinese Text Project 2006–2022.  
<https://ctext.org/dao-de-jing> (retrieved May 24, 2025).
- Le Guin, Ursula K. (Ed.) (1998). *Lao Tzu: Tao Te Ching: A Book about the Way and the Power of Way*. Shambhala Publications: Boulder (CO).
- Mair, Victor H. (Ed.) (1990). *Tao Te Ching: The Classic Book of Integrity and the Way*. Bantam Books: New York.
- Minford, John (2018). *Tao Te Ching: The Essential Translation of the Ancient Chinese Book of the Tao*. Viking Press: New York.
- Mitchell, Stephen (1988). *Tao Te Ching: A New English Version*. Harper Collins: New York.
- Ryden, Edmund (2008). *Laozi Daodejing*, Translated with Notes by Edmund Ryden, With an Introduction by Benjamin Penny. Oxford University Press: Oxford.
- Sinedino, Giorgio (2015). *Dao De Jing: Escritura do Caminho e Escritura da Virtude com os comentários do Senhor às Margens do Rio*. Editora Unesp: São Paulo.
- Suzuki, Daisetsu Teitaro, and Paul Carus (1913). *The Canon of Reason and Virtue (Lao-tze's Tao Teh King) Chinese and English*. Open Court: La Salle.  
<https://sacred-texts.com/tao/crv/> (retrieved May 24, 2025)
- Waley, Arthur (1958). *The Way and Its Power*. First Ed. 1934. Grove Press: New York.
- Zhang, Donia (2022). *道德经 Dao De Jing Laozi*, Translated by Donia Zhang.

### III. Ten Translations in D.K. Jordan (2016) of First Chapters of Dao De Jing

- Bahm, Archie J. (1958). *Tao Teh King by Lao Tzu Interpreted as Nature and Intelligence*. Frederick Ungar: New York. In: Jordan, D.K. (2016).
- Blakney, R.B. (1961). *The Sayings of Lao Tze*. Confucius Publishing Company: Taipei. In: Jordan, D.K. (2016).
- Lin, Yutang (1948). *The Wisdom of Laotse*. The Modern Library: New York. In: Jordan, D.K. (2016).
- Red Pine (1996). *Lao-tzu's Taoteching*. Mercury House: San Francisco. In: Jordan, D.K. (2016).
- Richter, Gregory C. (1998). *The Gate of All Marvelous Things: A Guide to Reading the Tao Te Ching*. Red Mansions Publishing: San Francisco. In: Jordan, D.K. (2016).
- Waley, Arthur (1958). *The Way and Its Power: A Study of the Tao Tê Ching and Its Place in Chinese Thought*. (First Ed. 1934) Grove Press: New York. In: Jordan, D.K. (2016).
- Wu, John C.H. (1961). *Lao Tzu: Tao Teh Ching*. St. Johns University Press: New York. In: Jordan, D.K. (2016).
- Xu, Yuanchong (2006). *Laws Divine and Human and Pictures of Deities*. China Intercontinental Press: Beijing. Fragment in: Jordan, D.K. (2016).

Yang, Jialuo (1962). *Laozi Truth and Nature*. Wanguo: Hong Kong. In: Jordan, D.K. (2016).

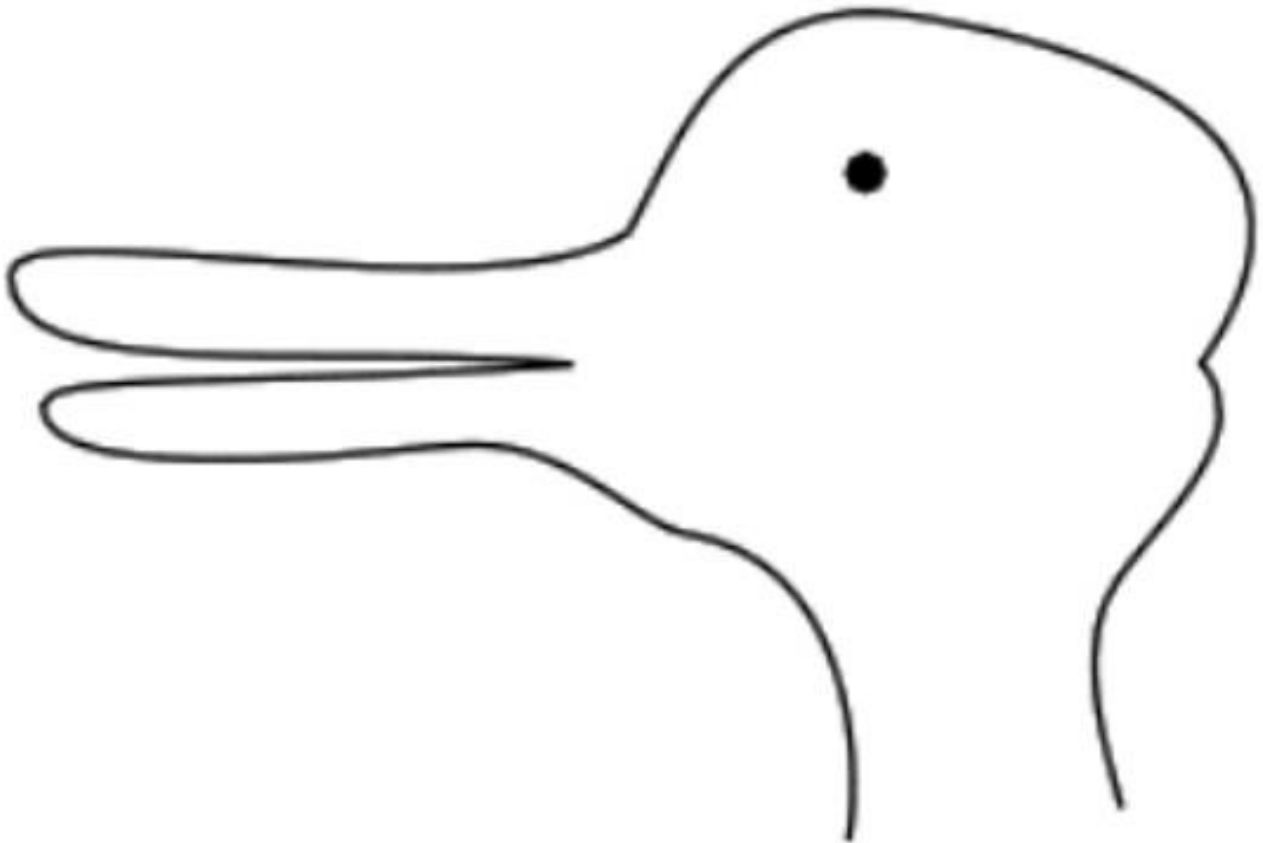
Yang, Liping (2009). *The Tao Inspiration: Essence of Lao Zi's Wisdom*. Asiapac: Singapore. Fragment in: Jordan, D.K. (2016).

Jordan, David K. (2016). 'Ten Translations of the *Dào dé Jīng*'. UCSD.edu (University of California San Diego) <https://pages.ucsd.edu/~dkjordan/chin/LaoJuang/DDJTenTranslations.html> (retrieved May 24, 2025)

**Figures:**

**Figure 1.**

*duck-rabbit*



Source:

<https://ia800209.us.archive.org/7/items/philosophical-investigations-ludwig-wittgenstein/Philosophical%20Investigations%20-%20Ludwig%20Wittgenstein.pdf>.

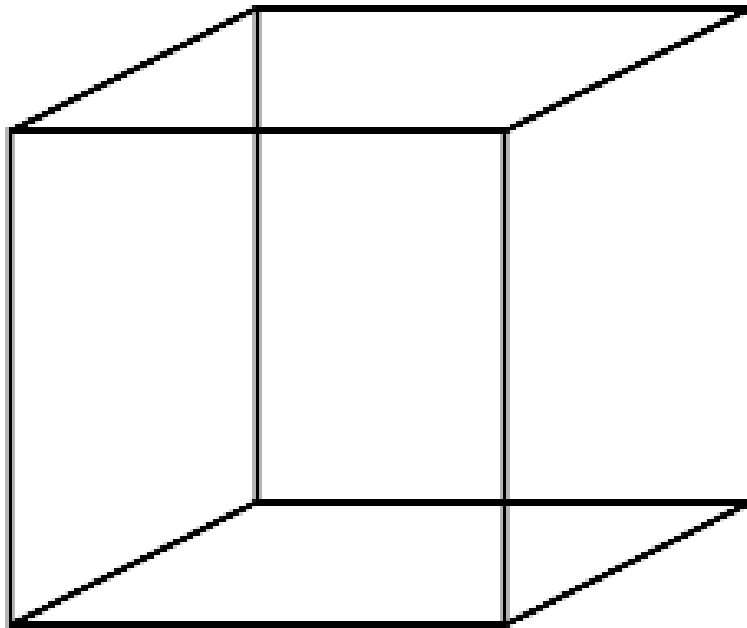
**Figure 2.**  
*bull-elephant*



Source:

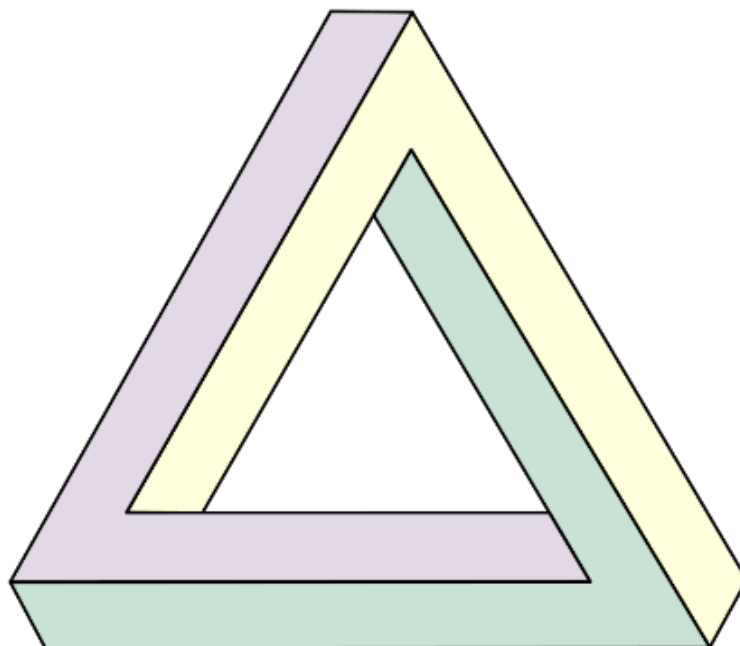
<https://timesofindia.indiatimes.com/life-style/health-fitness/de-stress/worlds-oldest-optical-illusion-how-many-animals-do-you-see/articleshow/103986370.cms>.

**Figure 3.**  
*Necker cube*



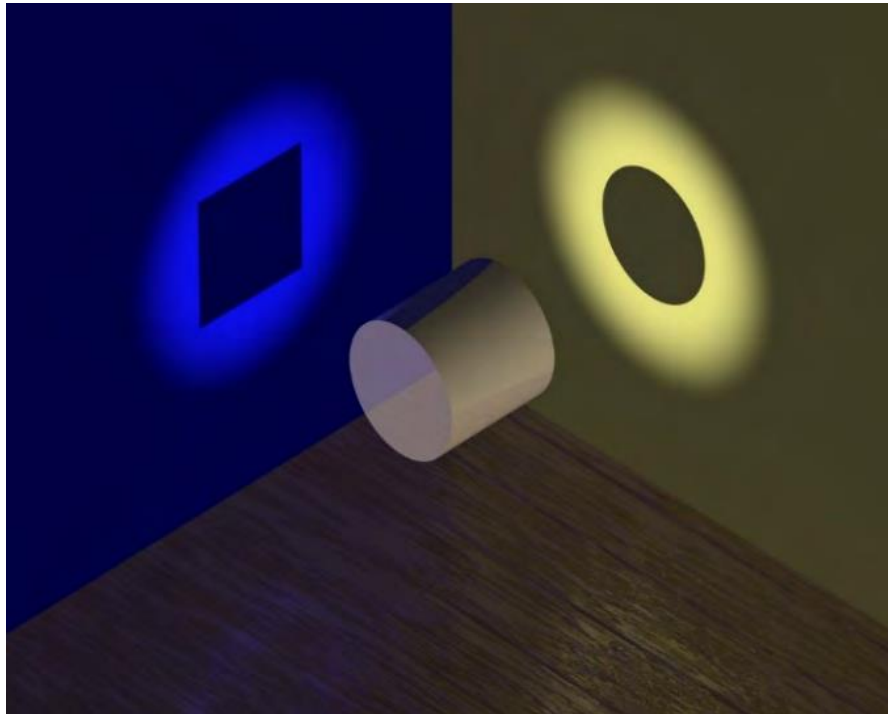
Source:  
[https://en.wikipedia.org/wiki/List\\_of\\_optical\\_illusions](https://en.wikipedia.org/wiki/List_of_optical_illusions).

**Figure 4.**  
*Penrose triangle*



Source:  
[https://en.wikipedia.org/wiki/List\\_of\\_optical\\_illusions](https://en.wikipedia.org/wiki/List_of_optical_illusions) (retrieved May 24, 2025)

**Figure 5.**  
*square-circle cylinder*



Source:

Costa, N.C.A. Da, and J.-Y. Béziau (2020). 'Is God Paraconsistent?' In: Silvestre et al. 2020, 323.

**Figure 6.**  
*yin-yang diagram*



Source:

[https://en.wikipedia.org/wiki/Yin\\_and\\_yang](https://en.wikipedia.org/wiki/Yin_and_yang).

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