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Law, Truth, and Reason

A Treatise on Legal Argumentation

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Chapter 2
An Isomorphic Theory of Law: A Relation of Structural Similarity Between the Two Fact-Constellations Compared

2.1 Kaarle Makkonen on Legal Isomorphism

Below, I will put forth and defend the argument that Kaarle Makkonen's notion of the *isomorphic* situation of legal decision-making can fruitfully be read in light of Ludwig Wittgenstein's idea that there exists an *isomorphic* relation between a meaningful linguistic expression and the corresponding fact, or a state of affairs, in the world external to language. To a great extent I will lean on Erik Stenius' (1911–1990) excellent commentary work on Wittgenstein's *Tractatus Logico-Philosophicus*, titled *Wittgenstein's* Tractatus. *A Critical Exposition of the Main Lines of Thought*.[1]

In *Tractatus Logico-Philosophicus*, Wittgenstein gives a solid philosophical account of the relation that prevails between language and the world in terms of the correspondence theory of truth, known as the *picture theory of language*. The correspondence theory of truth defines the truth of a sentence, belief, or assertion as *correspondence* or structural similarity between a linguistic expression and a state of affairs in the world. In the context of law, there is a parallel phenomenon found in an *isomorphic* relation that prevails between the fact-description of a legal norm and a corresponding state of affairs in the world. As we saw above, Kaarle Makkonen argues for such a conception in his treatise *Zur Problematik der juridischen Entscheidung. Eine strukturanalytische Studie.*

But what does it mean, to be more exact, that there exists an *isomorphic* or *picture* relation between two states of affairs? Oddly enough, Makkonen never gives a precise definition of an isomorphic relation in his major treatise, despite the fact that it is by far the most vital concept in his theory of law. He merely states on the issue[2]:

[1]The Finnish philosopher Erik Stenius was a student of Eino Kaila's, the Finnish adherent of the logical positivists of the *Wiener Kreis*. In his philosophical treatises, Stenius focused on symbolic logic, pre-Socratic philosophy, and the philosophy of Wittgenstein's *Tractatus Logico-Philosophicus*. His treatise, *Wittgenstein's* Tractatus. *A Critical Exposition of the Main Lines of Thought* (1960), though perhaps not widely known, is a major contribution to the topic.

[2]Makkonen, *Zur Problematik der juridischen Entscheidung*, pp. 78–79: "Erstens kann es sich um einen so klaren und allseitig deutlich gestalteten Fall handeln, dass die anzuwendende

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> For the first, we may be dealing with such a clear and patently obvious case that the applicable legal norm is immediately evident to the decision-making authority. The relation that prevails between the given facts and the facts in a legal norm is like the one between a picture and the object depicted. Of such a case, I will use the term an *isomorphic situation*.

In an isomorphic situation of legal decision-making, there is no uncertainty as to the rule to be applied to the case, but the rule may still allow several legal outcomes, and the judge is required to make a choice among them. For instance, the norms of criminal law often leave a wide margin of discretion to the judge as concerns the type and measured quantity of punishment to be inflicted upon the offender, i.e. the choice between a fine, imprisonment, or other punishment, and the relative severity of the punishment. Even then we are dealing with an isomorphic situation, since there is no doubt as to the selection of the legal norm to be applied to the facts of the case, nor of the semantic meaning-content of the norm. The special case where there is only one legal consequence to be enforced to the facts in an isomorphic situation might be called a *simple* case of legal isomorphism. The existence of at least some discretionary leeway as to the legal outcome to be enforced is a more common situation even in the isomorphic cases of legal adjudication, though.

An isomorphic relation between the two fact-constellations may only comprise the semantically clear, *routine cases* of law-application, leaving the *hard cases* of legal adjudication totally untouched. In Makkonen's terminology, an isomorphic situation is to be distinguished from the two other decision-making situations that a judge might be confronted with when seeking to apply the law to an individual case, viz. the *semantically ambiguous* situation and the *unregulated* situation. Still, Makkonen would seem to ignore the fact that the affirmation or denial of an isomorphic relation requires an antecedent *act of interpretation* by the judge in which a *key of isomorphism* locked up for the case at hand. The presence or absence of an isomorphic relation could not be confirmed without such a judgment.

Makkonen's idea of an *isomorphic* relation between the two fact-constellations, the one as depicted in a legal norm and the other as possibly existing in the world, can be further elaborated with the *picture theory* of language, as put forth by Ludwig Wittgenstein (1889–1951) in his *Tractatus Logico-Philosophicus*. Somewhat oddly, Makkonen did not make use of Wittgenstein's *Tractatus* in his *Zur Problematik der juridischen Entscheidung*, though his philosophical stance is based on equally analytic and linguistic premises. Even the idea of a picture-like relation between the two fact-constellations concerned is common to both authors.[3]

Rechtsnorm der entscheidenden Instanz ohne weiteres sofort bekannt ist. Zwischen den gegebenen Tatsachen und den im Rechtsnormsatz dargestellten Tatsachen herrscht dann das Verhältnis des Abzubildenden zum Bilde. Wir gebrauchen für eine derartige Lage die Benennung *Isomorphiesituation*." (Italics by Makkonen; translation by the present author.)

[3] Kaarle Makkonen (1923–2000) was one of the founders of analytical jurisprudence in Finland. He was professor in jurisprudence at the University of Helsinki in 1968–1986. The absence of Ludwig Wittgenstein's *Tractatus Logico-Philosophicus* in Makkonen's analysis is all the more perplexing, since I happen to know that Wittgenstein's *Tractatus* of course belonged to Makkonen's personal library on philosophy. I know that because Makkonen was kind enough to donate the book to me at the time I was writing my own doctoral thesis on precedents in the 1990s. Of course it is possible that Makkonen regarded Wittgenstein's *Tractarian* ideas as so patently evident and widely known

2.2 The Picture Theory of Language in Ludwig Wittgenstein's *Tractatus Logico-Philosophicus*, as Read in Light of Erik Stenius' *Wittgenstein's* Tractatus. *A Critical Exposition of the Main Lines of Thought*

2.2.1 The Internal Categorial Structure and the External Configuration Structure of Reality

In *Tractatus Logico-Philosophicus*, Ludwig Wittgenstein introduced the idea of a *picture theory of language*. According to him, there exists an *isomorphic* relation between a meaningful linguistic expression and the corresponding fact or state of affairs in the world. *Reality* (*Wirklichkeit*) is the sum of the actually prevailing and merely possible *states of affairs*, and not the totality of, say, individual objects, ideas, or entities taken as such, in isolation.[4] The world (*Welt*) consists of *facts* (*Tatsachen*), i.e. the actually prevalent *states of affairs* (*Sachverhalten*) at a given moment of time.[5] A *state of affairs* consists of a combination of individual objects (entities, things), their properties and mutual relations.[6]

Wittgenstein was remarkably laconic as to what those elementary "objects", "entities", or "things" (*Gegenstände, Sachen, Dinge*) are. As J. Alberto Coffa put it: "Wittgenstein said virtually nothing directly about the character of objects. There is no example of an object in the *Tractatus* and not even a hint of what these might be."[7] Though on the level of terminology adopted Wittgenstein makes no distinction between the various kinds of "objects" (or entities, things) and

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that no references were needed. Be that as it may, the issue can be fecundly elaborated with Ludwig Wittgenstein's philosophy.

[4] "Die Welt is die Gesamtheit der Tatsachen, nicht der Dinge." Wittgenstein, *Tractatus Logico-Philosophicus*, § 1.1 (p. 30).

[5] "Die Konfiguration der Gegenstände bildet den Sachverhalt." Wittgenstein, *Tractatus Logico-Philosophicus*, § 2.0272 (p. 36); "Die Gesamtheit der beshetenden Sachverhalte ist die Welt." Wittgenstein, *Tractatus Logico-Philosophicus*, § 2.04. (p. 36); "Das Bestehen und Nichtbestehen von Sachverhalten ist die Wirklichkeit." Wittgenstein, *Tractatus Logico-Philosophicus*, § 2.06 (p. 36). – Cf. Stenius, *Wittgenstein's* Tractatus, p. 31. Cf. Stenius, *Wittgenstein's* Tractatus, p. 31: "Thus a *Sachverhalt* is something that could *possibly* be the case, a *Tatsache* something that is *really* the case." (Italics in original.)

[6] "Der Sachverhalt is eine Verbindung von Gegenständen. (Sachen, Dingen.)" Wittgenstein, *Tractatus Logico-Philosophicus*, § 2.01 (p. 30).

[7] Cf. Coffa, *The Semantic Tradition from Kant to Carnap*, p. 150. – Cf. also Coffa, *The Semantic Tradition from Kant to Carnap*, p. 393 (note 8 to p. 150), where Coffa refers to Wittgenstein's scattered and terse remarks on the subject matter in the *Tractatus* and in Wittgenstein's later works. As examples of such objects, Wittgenstein gives the following phenomena: a point in the visual field, a patch in the visual field, the visual picture of a star, the material points of physics, and the primary colours (in Wittgenstein's *Notebooks*). In *Philosophische Bemerkungen* Wittgenstein explained, "What I once called "objects", simples, were simply what I could refer to (*bezeichnen*) without running the risk of their non-existence, i.e. that for which there is neither existence nor nonexistence." According to *Notebooks*, "relations and properties, etc. are *objects* too." The citations by Wittgenstein in Coffa, *The Semantic Tradition from Kant to Carnap*, p. 393 (note 8 to p. 150).

"predicates" that denote the qualities that may be attached to objects and the relations that might prevail between them, such a distinction is yet entailed in his idea that the "things" cannot enter the world as part of states of affairs except as bearers of certain predicates.[8] *Predicates* can be divided into *qualities* and *relations*.[9] The world is the totality of *facts*, i.e. the actually prevailing, and not merely possible, states of affairs. The facts are situated in a *logical space* where an individual state of affairs, i.e. a combination of objects and predicates, is either prevalent or not.[10]

Tractatus Logico-Philosophicus has been characterized as the *critique of pure language*,[11] since its author had the firm intention of drawing the boundaries of language and the world by means of defining the preconditions of meaningful linguistic usage.[12] When linguistic expressions are used correctly from the point of view of the logical syntax and semantics, the sentences are structurally placed in an *isomorphic* relation vis-à-vis the facts of the world or the (no more than) possible states of affairs in it, whereas any claims as to the *internal* structure of language itself are meaningless, without semantic reference. The preconditions of the logical syntax of language, or of linguistic propriety in general, cannot be captured by means of language itself.

> There is a fascinating allusion to the constitutive premises of a specifically legal worldview in Wittgenstein's picture theory of language, as presented in *Tractatus Logico-Philosophicus*. Georg Henrik von Wright and Norman Malcolm, two philosophers who had a close personal acquaintance with Ludwig Wittgenstein, equally recall in their memoirs of Wittgenstein that the idea of a picture relation between the language and the world occurred to Wittgenstein while during the World War I he was reading a newspaper article of a lawsuit that had taken place in Paris in 1914. The case had dealt with a car accident, and in court the lawyers had produced a representation of the accident by means of a scaled-down model.[13] The map of the site of the accident, along with the miniature cars, horses, buildings, and human figures, the relative place and distance of each *vis-à-vis* the others,

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[8] Stenius, *Wittgenstein's* Tractatus, p. 25: "The particular objects are perceived because this breaking-up [of a field of perception into simpler facts] is combined with a *structuring* of the simpler facts into *things* and *predicates* of things (i.e. into objects and qualities of objects and/or relations between objects). *The things and predicates* enter into the field of perception only as *elements* of facts, and that is their function." (Italics in original.) – Cf. Stenius, *Wittgenstein's* Tractatus, p. 28, 62–63, and p. 68: "... that objects and predicates enter into the world only as elements of facts, and that objects and predicates in isolation are unthinkable." – On the relation Wittgenstein's *Tractatus* bears to Carnap's semantics, Carnap, *Meaning and Necessity*, p. 9.

[9] Stenius, *Wittgenstein's* Tractatus, p. 21, note 4.

[10] "Die Tatsachen im logischer Raum sind die Welt." Wittgenstein, *Tractatus Logico-Philosophicus*, § 1.13 (p. 30).

[11] On the relationship between *Tractatus Logico-Philosophicus* and Kant's *Critique of Pure Reason*, Stenius, *Wittgenstein's* Tractatus, pp. 214–226.

[12] Wittgenstein, *Tractatus Logico-Philosophicus*, p. 26/27: "Was sich überhaupt sages lässt, lässt sich klar sagen; und wovon man nicht redden kann, darüber muss man scheigen."/"What can be said at all can be said clearly; and whereof one cannot speak thereof one must be silent."

[13] Malcolm, *Ludwig Wittgenstein. A Memoir*, p. 57; von Wright, "A Biographical Sketch", p. 8; Wittgenstein, *Notebooks 1914–1916*, p. 7/7e (*ad* 29.9.1914).

> plus other observable qualities attached to, and relations among, the objects in the model constitute the *fact-description* of a *fact-constellation*, or a *state of affairs*, that (allegedly) had taken place in Paris in 1914.
>
> The fact-constellation, as depicted by the lawyers, entailed a combination of *objects* (cars, horses, people, buildings, streets, etc.) and their *predicates* (direction of movement and velocity of each moving object, distance from other objects, etc.) at the time of the accident.[14] Similarly, a linguistic expression, if correctly formulated in light of the criteria laid down by the logical syntax of language, stands in an *isomorphic* relation, or *picture* relation, to its semantic reference, i.e. a particular fact-constellation or state of affairs. If the fact-constellation in question in fact prevails in the world, we are dealing with a *fact*; if not, we are dealing with a (merely possible) *state of affairs*, according to Wittgenstein.

According to Wittgenstein's *Tractatus*, any assertions concerning language itself are semantically empty tautologies, devoid of semantic reference except for the (possible) *analytical* truth of the concepts utilized due to their convention-based definitions. Since the relation between language and the states of affairs in the world could not be depicted by the categories of a semantically meaningful language, any linguistic assertions produced by, say, philosophical ontology, metaphysics, or linguistics are utterly meaningless, without meaningful semantic reference in the world. Thus, from a philosophical and linguistic point of view even the sentences in Wittgenstein's *Tractatus* meet a similar fate, as Wittgenstein himself pointed out at the very end of the *Tractatus*.[15]

Erik Stenius provides an excellent analysis of the ontology and semantics of Wittgenstein's *Tractatus* in his commentary work *Wittgenstein's* Tractatus. *A Critical Exposition of the Main Lines of Thought*.[16] In it, Stenius draws the distinction between the *internal* and *external* structure of a fact or state of affairs. The *internal* structure of a fact or state of affairs refers to its structural elements, i.e. objects (entities, things) and predicates (qualities, relations) the combination of which forms the elementary categorial structure of the fact or state of affairs concerned. The *external* structure of a fact, or a state of affairs, refers to the manner in which the given ontological categories have been combined so as to form a fact that actually prevails in the world.[17]

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[14] As von Wright points out, Wittgenstein reversed the analogy and let the proposition serve as a model or picture for the corresponding state of affairs in the world. Cf. von Wright, "A Biographical Sketch", p. 8.

[15] "6.54. My propositions are elucidatory in this way: he who understand me finally recognizes them as senseless (*unsinnig*), when he has climbed out of through them, on them, over them. (He must so to speak throw away the ladder, after he has climbed up on it.) – He must surmount these propositions; then he sees the world rightly. – 7. Whereof one cannot speak, thereof one must be silent." Wittgenstein, *Tractatus Logico-Philosophicus*, p. 189.

[16] Erik Stenius (1911–1990) was professor in philosophy at the University of Helsinki in 1963–1974. *Wittgenstein's* Tractatus. *A Critical Exposition of the Main Lines of Thought* is his main contribution to the Wittgenstein studies.

[17] Stenius, *Wittgenstein's* Tractatus, p. 79: "Whereas the *external* structure of the world as a fact (or some other possible world) refers to what is *actually* the case in a given world, the *internal* structure of substance pertains only to what could *possibly* be the case in any world." (Italics in original.)

The internal structure of a state of affairs is equal to the objects, predicates and possible other elements of the *categorial structure* of merely possible ontology of the world, while the external structure of a state of affairs is equal to the *configuration structure* of the world as the facts that actually prevail in the world.[18] The *internal* structure of the world comprises the *logical syntax of language*,[19] i.e. the names given to the objects and predicates along with the logical connections required by the logical and linguistic grammar adopted, on the one hand, and the respective objects (entities, things) and predicates (qualities, relations) that form the basic categorial structure of the *elementary ontology* of the world, on the other. The combination of the logical syntax of language and the elementary ontology of the world may be called the *logical constitution of reality*.[20]

The *external* structure of the world comprises the actual configuration of the object–predicate combinations that have come into existence in the world, on the one hand, and the sum total of descriptive sentences that depict such facts, on the other. The internal *categorial* structure of reality is expressive of the logical constitution of what might be called a possible-worlds ontology, while the external *configuration* structure of the world gives effect only to such states of affairs that have been realized in the world, in the sense of providing the ground for the logical and empirical *semantics* and the philosophical *epistemology* plus the respective criteria of truth and knowledge entailed.[21]

We might say that the relation between the elementary ontology of reality and the logical syntax of language is *intensional*, to the effect that the sentences of an elementary ontology which "refer" (in a non-proper sense of the term) to the categorial structure of reality, are left without a semantic reference or truth-value in light of Wittgenstein's picture theory of language. It is only an intensional sense that may be attached to them. The relation between philosophical epistemology and the logico-empirical semantics of language, on the other hand, is *extensional*, as such linguistic expressions refer to the prevailing facts of the world, as the various configurations of objects and predicates that have come into being in the world. Such linguistic expressions carry a propositional truth-value on them, too.[22]

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[18] The term *configuration structure* is mine, but the idea is from Stenius.

[19] The term *formal constitution of language* could also be used.

[20] The term *logical constitution* is not used by Stenius, but it is derived from Rudolf Carnap's philosophy. The term *formal constitution* could also be used.

[21] Stenius makes use of the two terms *descriptional picture theory*, with reference to the affinity between the external structure of a sentence and its semantic reference, and *ontological picture theory*, with reference to the affinity between language and the internal structure of reality. Stenius, *Wittgenstein's* Tractatus, p. 177.

[22] The intensionality and extensionality of a picture relation is based on my own interpretation and cannot be traced back to Stenius' commentary on Wittgenstein. To be precise, under the ontological and linguistic commitments of Wittgenstein's *Tractatus* a picture relation can only be extensional, since any statements concerning the internal structure of reality are without semantic reference in Wittgenstein's theory. Therefore, the term, "intensional" has been placed in brackets in the diagram below.

The states of affairs in the world and the descriptive sentences by means of which they are depicted in linguistic assertions effectively bind together the "words", or the logical and semantic categories of language, and the "things", or the constellations of objects (entities, things) and predicates (qualities, relations) in the world. In the terminology of Michel Foucault's archaeology of knowledge, we are now dealing with the *analytics of finitude* of the Western *épistémè*, in the sense of the *external* relations that exist between language and the prevailing facts in the world.[23] Summarizingly the relation of isomorphism between the language and the world on the two "levels" or dimensions discerned, viz. the *logical constitution* of reality as the internal *categorial structure* of language and reality, on the one hand, and the *analytics of finitude* as the external *configuration structure* of the "words" of language and the "things" in the world, on the other, can be depicted with the following diagram:

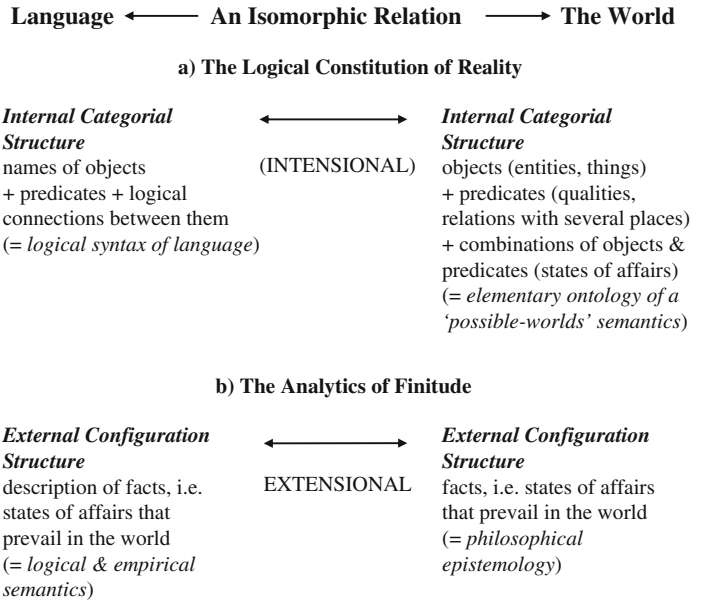

Diagram 2.1 The relation between language and the world: the logical constitution of reality and the analytics of finitude, with reference to the internal categorial structure and the external configuration structure of the world

Though two distinct states of affairs might be similar as to their internal categorial structure and external configuration structure, their substantive contents could still be different, as the following two examples of the members of a famility and the soldiers of a military unit will show.[24]

[23] Foucault, *Les Mots et les choses. Une Archéologie des sciences humaines*; Siltala, *Oikeustieteen tieteenteoria*, p. 1 et seq.

[24] Stenius, *Wittgenstein's* Tractatus, p. 94.

2.2.2 A Legal Fact-Situation as an Analysed Fact-Situation

Any set of facts or states of affairs that can be analysed as different sets of combinations of objects (entities, things) and their predicates (qualities, relations) Erik Stenius calls an *articulate field*.[25] An articulate field is a fact-complex that consists of one or more facts or states of affairs, as analysed in light of some specific *key of interpretation*.[26] The terms *fact-complex*, *fact-description*, *fact-constellation*, and *fact-situation* could also be used, even though they are inclined to bring in an air of a specifically *legal* world-view that is lacking in Stenius' original analysis. Here such an allusion to the legal fact-constellations is however welcome, since it provides a link from Stenius' and Wittgenstein's philosophy to Kaarle Makkonen's philosophy of law: both share the notion of isomorphism. An *isomorphic* relation between a linguistic expression and some articulate field in the world requires that there exists a relation of correspondence, or isomorphism, within the internal *categorial* structure and the external *configuration* structure of language and reality, respectively.

Though Wittgenstein said virtually nothing in *Tractatus Logico-Philosophicus* about the true character of the "things" or objects that constitute the elementary ontology, resulting in the array of possible states of affairs in the reality and the specific facts in the world,[27] in the present *legal* context such entities may be held as equal to the elements of individual legal *fact-situations* entailed in legal norms.

The subject matter of an articulate field may comprise, for instance, the members of a five-member family, the qualities of each family member in terms of intelligence, and the parent–child relations; or the soldiers of a military unit, the personal qualities of each soldier in terms of braveness, and the relations of military authority and commandship, in the sense of a superior rank officer's authorized power to give military orders to the soldiers of an inferior rank and the corresponding duty of the inferior-rank soldiers to obey the orders given by the higher-ranking officer, in the military unit concerned. Thus, Stenius makes use of two articulate fields, or fact-situations, each comprising five objects and two predicates, i.e. one quality and one binary relation. An isomorphic relation prevails between the two fact-complexes under the criteria specified above[28]:

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[25] Stenius, *Wittgenstein's* Tractatus, p. 90: "... I shall call a fact capable of being analysed in different ways a 'field'. A field so analysed that certain objects and predicates – which need not be atomic – appear as its elements I shall call an *articulate field*. To an articulate field, then, belongs (a) the fact analysed, (b) the system of elements in terms of which it is analysed. An 'articulate field' differs from an analysed 'world as a fact' only in (1) that it need not comprise more than a certain portion of the world as a fact and (2) that the elements need not be 'atomic'." Cf. also Stenius, *Wittgenstein's* Tractatus, p. 91 et seq.

[26] The term *scheme of interpretation* could also be used.

[27] Coffa, *The Semantic Tradition from Kant to Carnap*, p. 150.

[28] Stenius, *Wittgenstein's* Tractatus, pp. 70–71, 91–96.

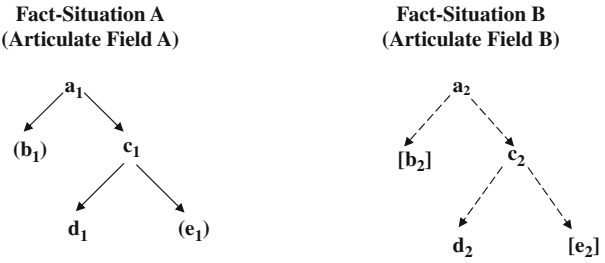

	Diagram A:	Diagram B:
Objects:	a_1: Alan	a_2: Adams
	b_1: Brian	b_2: Barratt
	c_1: Christopher	c_2: Colman
	d_1: David	d_2: Denison
	e_1: Eric	e_2: Ellis
Qualities:	intelligence (b_1 & e_1)	braveness (b_2 & e_2)
	(=brackets)	(=square brackets)
Binary relations:	father–son relation	relation of military authority
	(=arrow)	(=broken arrow)

Diagram 2.2 The objects and predicates of a family and a military unit as two articulate fields

The objects of the articulate field A comprise the members of a family, a_1–e_1. The quality under inspection is the (exceptional) intelligence of a person, as depicted by a bracketed letter, and the binary relation under observation is the father–son relation, as depicted by an ordinary arrow. In the diagram, a_1 is the father of b_1 and c_1, and c_1 is the father of d_1 and e_1. Of the family members, b_1 and e_1 are (exceptionally) intelligent.

The objects of the articulate field B comprise the soldiers that belong to a certain military unit, a_2 – e_2. The quality under inspection is the (exceptional) braveness of a soldier, as depicted by a square bracketed letter, and the binary relation under observation is the relation of military authority, in the sense of being authorized to give military orders to the soldiers who are lower in military rank, as depicted by a dashed arrow. In the diagram, a_2 is in the position to give military orders to b_2 and c_2, and c_1 is in the position to give military orders to d_2 and e_2. Of the soldiers, b_2 and e_2 are (exceptionally) brave.

Though the subject matters of the two articulate fields A and B are different, there exists an isomorphic relation between the two fact-situations both as to their *internal categorial structure* and their *external configuration structure*. First of all, there exists a relation of one-to-one isomorphism between the categorial objects, qualities, and binary relations concerned: object a_1 (Alan) corresponds to object a_2 (Adams), object b_1 (Brian) corresponds to object b_2 (Barratt), and so on, with respect to each of the individual objects concerned. In a similar manner, the qualities (exceptional intelligence/braveness) and binary relations (father–son relation/superior–inferior rank of military authority) match with each other in the internal categorial structure of the articulate fields studied.

The existence of internal categorial similarity between two fact-complexes cannot yet guarantee the existence of an isomorphic relation as concerns their external configuration structure. Isomorphism would be broken in Stenius' illustration, if, say, c_1 were not the child of a_1, or if b_1 were not (exceptionally) intelligent, or if d_2 were not placed under the military authority c_2, or if e_2 were not (exceptionally) brave. In the diagram above, even the external configuration structure of the two articulate fields A and B are yet similar, to the effect that the two qualities of (exceptional) *intelligence* and (exceptional) *braveness* and the two binary relations of a *father–son relation* and *military authority* have a total match with each other.

An *isomorphic* relation prevails between two (or more) fact-complexes, each with one or several facts or states of affairs, if and only if the internal *categorial structure* and external *configuration structure* of each are similar, to the effect that the sum total of objects (things, entities) and predicates (qualities, relations) attached to them have a one-to-one *structural similarity* to one another. The presence or absence of isomorphism concerns the internal and external structure of facts, or states of affairs, only. As to their substantive content, the two articulate fields compared may still be very different, as Stenius' illustration bears witness of.

According to Stenius, isomorphism can be defined with the following four criteria[29]:

(a) Isomorphism is a relation between two (or more) *facts* or *states of affairs*, not between *things* or *predicates* as such or in isolation.
(b) Only facts that have been analysed in terms of a fixed system of *categorial elements* involved into *articulate fields* can be isomorphic vis-à-vis one another.
(c) An isomorphic relation can only prevail between two articulate fields that have the same *internal categorial structure*, and the presence of isomorphism can be ascertained only with reference to a *key of isomorphism* by means of which the similarity of the *external configuration structure* of the states of affairs can be ascertained.
(d) Isomorphism is a *symmetrical* and *transitive* relation.

An isomorphic relation may prevail between two or more facts or feasible states of affairs that can be analysed as an articulate field, not between individual objects (entities, things) or predicates (qualities, relations) as such (= point a). That is because of the ontological commitments in Wittgenstein's *Tractatus*: individual "things" may enter the world only as part of a state of affairs, and not as freestanding entities as such.[30] The objects or predicates that make up a distinct fact or a state of affairs need to be cast into a fixed model or system that constitutes an articulate

[29] Stenius, *Wittgenstein's* Tractatus, pp. 93–94. Stenius' criteria have to some extent been modified and further elaborated here. For instance, the requirement of the affinity of the external configuration structure of the two states of affairs concerned, i.e. articulate fields, is supplemented by the present author. Stenius, however, speaks of a fixed correspondence between the elements of the states of affairs concerned in light of the key on isomorphism chosen. As I see it, that criterion amounts to the affinity of the external configuration structure of the facts concerned.

[30] "...that objects and predicates enter into the world only as elements of facts, and that objects and predicates in isolation are unthinkable." Stenius, *Wittgenstein's* Tractatus, p. 25, 68. Cf.

field, since without such a fixed reference the presence of a relation of isomorphism could not be affirmed (= point b). The structural affinity or similarity of the internal and external structure of two states of affairs compared is determined by the *key of isomorphism* adopted, by means of which the objects and predicates of some fact or state of affairs, i.e. an articulate field, are locked up for the analysis. They key of isomorphism, in other words, resolves the issue as to which individual facets of the states of affairs, facts, or articulate fields under observation are deemed to be significant for the analysis of isomorphism (= point c).

The choice of a particular key of isomorphism is closely tied up with the *logical construction of reality*, i.e. the constitution of the states of affairs or fact-situations concerned and of the linguistic entities involved. In Stenius' two examples concerning the members of a family, on the one hand, and the soldiers of a military unit, on the other, there are ten objects (a_1, b_1, c_1...e_2), the two qualities of (exceptional) intelligence and braveness, as depicted above by the bracketed and square bracketed letters, and the two binary relations of the father–son and of the military superior–inferior kind, as depicted above by the ordinary and double arrows. If the qualities attached to the five objects or the relations affirmed between the objects in the articulate fields in question differ from each other in some respect, no relation of isomorphism can be ascertained vis-à-vis the fact-constellations concerned.

> The internal categorial structure of a state of affairs or fact-situation can be constructed in more than just one manner, depending on how the prevailing "order of things" in the world and the corresponding linguistic categories are constituted. An alternative categorial outline of the above example could consist of, say, 24 distinct entities: ten objects, as signified by letters with a sub-index (a_1 ... e_2), two bracketed letters (= the quality of being intelligent), two square bracketed letters (= the quality of being brave), five arrows (= father–son relation), and five broken arrows (= relation of military authority and subordination).

In Stenius' example above, an isomorphic relation is thought to prevail between the two articulate fields compared as the structural similarity of the *objects* (five members of a family/five soldiers in a military unit), *qualities* (intelligence/braveness) and *binary relations* (father–son relation/military authority) in the logical space in question. If the analysis had been focused on some other pair of qualities or relations in an articulate field "inhabited" by the said five objects, like the quality of "having a red hair" among the members of a family, or the quality of "being left-handed" among the soldiers of a military unit, or the mutual relations of affection or disgust among the persons concerned, the key of isomorphism would not have yielded an isomorphic relation between the two articulate fields concerned, unless the said properties were distributed among the members of the family or the soldiers of the military unit concerned in an identical manner to the one considered above. The same outcome holds true for any combination of objects, qualities, and relations, if the internal *categorial structure* or the external *configuration structure* (or both) of the two articulate fields compared differ from each other in some significant respect. It is only with respect to a certain key of isomorphism that the structural match of the articulate fields compared can be ascertained.

Wittgenstein, *Tractatus Logico-Philosophicus*, § 1.1.: "Die Welt ist die Gesamtheit der Tatsachen, nicht der Dinge."

The essentially symmetrical and transitive character of an isomorphic relation guarantees that the results reached in such an analysis can be extended to any other fact-situations, too, so long as the criterion of structural similarity as to their internal categorial structure and external configuration structure are satisfied (= point d). As a consequence, Stenius' illustration of the qualities and relations among the members of a family or the soldiers of a military unit may be adopted in, say, the analysis of the person who is entitled to inherit, if the twin criteria as to the internal and external structure of the articulate fields are duly met with. The Finnish Act of Inheritance (5.2.1965/40) 2:1 § decrees on the order of inheritance of the direct heirs of the deceased person as follows[31]:

> The direct heirs of the deceased person are the first to inherit. Each of the children will obtain an even share of the property in the estate. If some of the children of the deceased person has died earlier, his or her offspring will come to his or her place in the order of inheritance, and each line will obtain an equal share of the estate.

The order of inheritance in two fact-situations A and B can be depicted with the following diagram, drawn in the image of Stenius' illustration of the qualities and relations among the members of a family or a military unit:

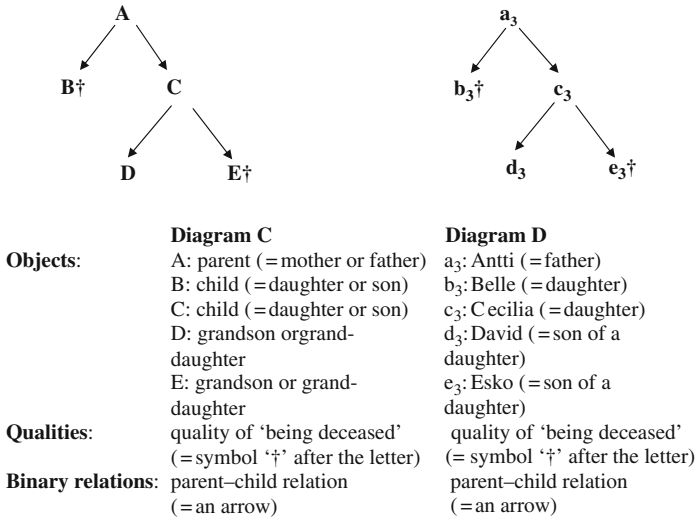

	Diagram C	Diagram D
Objects:	A: parent (=mother or father)	a_3: Antti (=father)
	B: child (=daughter or son)	b_3: Belle (=daughter)
	C: child (=daughter or son)	c_3: Cecilia (=daughter)
	D: grandson orgrand-daughter	d_3: David (=son of a daughter)
	E: grandson or grand-daughter	e_3: Esko (=son of a daughter)
Qualities:	quality of 'being deceased' (=symbol '†' after the letter)	quality of 'being deceased' (=symbol '†' after the letter)
Binary relations:	parent–child relation (=an arrow)	parent–child relation (=an arrow)

Diagram 2.3 The order of inheritance of the children of a deceased person according to the Finnish Act of inheritance and as then realized in the world, as analysed in terms of an isomorphic relation

[31] Translation from Finnish by the present author.

According to the Finnish Act of Inheritance, the two daughters of father Antti (= a_3), viz. Belle (= b_3) and Cecilia (= c_3), are both prima facie entitled to inherit an equal share of the property left by their deceased father. In the present case, however, Belle (= b_3) had died before her father, and so all of the property will go to Cecilia (= c_3). Also one of the two sons of Cecilia, i.e. Esko (= e_3), had died before Antti (= a_3), but that has no effect on the legal order of inheritance in the case under consideration. A similar, even if more complicated analysis of an isomorphic relation between a fact-description given in the legislation and the states of affairs in the world can naturally be extended to any other legal fact-constellations. For instance, it may cover the concept of *legal ownership*, as insightfully analysed by Wesley Newcomb Hohfeld as the *jural correlatives* and *jural opposites* of such categories.[32]

2.3 The Two Requirements Placed on Legal Isomorphism

There are two essential preconditions placed on the presence of an isomorphic relation between the two fact-constellations involved. The one has to do with the *legal adequacy* of the key of the isomorphism selected, and the other with the *rule/principle* characterization of the legal norm concerned.

For the first, the *key of isomorphism* has to be adequate from a legal point of view. The requirement of *legal adequacy* refers to the idea of anchoring the isomorphic, picture relation between the two fact-constellations in the norms of the legal system in question, and not in some considerations of social, ethical, political, or religious kind that cannot draw such support from the institutional and societal sources of law in the legal system concerned. It is only on the condition that there prevails an isomorphic relation between the *internal categorial structure* and *external configuration structure* of the fact-constellation of a legal norm and the corresponding fact-description of a state of affairs in the world that the effected relation of isomorphism may properly be qualified as *legal*.

The other requirement placed on legal isomorphism has to do with the internal structure of the legal norm involved. An *isomorphic* relation between the two states of affairs, the one as defined in the fact-description of a legal norm and the other as possibly prevalent in the world, can only take place under a legal *rule*. Because of the open-ended and contextual quality of legal principles and the like legal standards, they cannot provide a fixed ground for the kind of judgment that is required for the affirmation of an isomorphic relation between the two fact-constellations in question. An isomorphic relation would be possible only if the legal principle in question were first transformed into a legal rule with clear and distinct enough semantic boundaries of application.

Kaarle Makkonen wrote that an isomorphic situation might be present even in the case of legal principles.[33] His definition of a legal principle is yet different from

[32] Hohfeld, *Fundamental Legal Conceptions as Applied in Judicial Reasoning*.

[33] Makkonen, *Zur Problematik der juridischen Entscheidung*, pp. 175–181.

the one suggested by Ronald Dworkin and then widely acknowledged in the subsequent legal literature. Makkonen can hardly be blamed for not paying attention to Dworkin's theory of law, since Makkonen's treatise *Zur Problematik der juridischen Entscheidung* was published in 1965, 2 years before Dworkin's pathbreaking article, "The Model of Rules, I", came out. In it, Dworkin presented his seminal idea of legal "principles, policies, and other sorts of standards" that exert normative influence on a judge's legal discretion in the hard cases of legal adjudication where legal rules cannot provide for conclusive guidance.[34] It is therefore easy to see why Makkonen could not know the two criteria for the analysis of legal principles that were subsequently suggested by Dworkin, i.e. sufficient *institutional support* and a *sense of approval* in the legal community.

Makkonen opts for a nominalist and conventional definition of legal principles.[35] He situates legal principles against the classical natural law tradition where legal principles are taken as a set of non-positive values and norms, endowed with the authority to delimit the legal discretion of the legislator and the courts of justice when faced with iniquity. On the other hand, Makkonen sees legal principles as part of a strictly systemic idea of law under a formalist conception of law. Moreover, legal principles are said to form an essential part of the foundational ideological premises of the law.[36] As to their role in the court's legal decision-making, Makkonen sees legal principles mainly as norms that direct the court's choice of the legal rule to be applied in a concrete case at hand or of the specific legal consequences to be inflicted under the legal rule selected.[37]

Since the principles and standards of law are, by force of their definition, open-ended vis-à-vis certain social values and collective goals acknowledged in society, and since, moreover, their field and conditions of application cannot be fully determined in advance, in isolation from a specific fact-constellation, a necessary prerequisite of legal isomorphism is missing. As a consequence, legal principles cannot serve as a ground for legal isomorphism. Contrary to what Makkonen wrote

[34] Cf. Dworkin, *Taking Rights Seriously*, p. 22: "... in those in hard cases... [the lawyers] make use of standards that do not function as rules, but operate differently as principles, policies, and other sorts of standards."

[35] "In der vorliegenden Untersuchung interessiert uns – einerlei wie die Klassifizierung und ihre Kriterien sein mögen – nur das, dass wir bestimmte Grundsätze benennen können, die wir als allgemeine Rechtsprinzipien ansehen. Da genügt zur Untersuchung ihrer Entscheidungsfunktion." Makkonen, *Zur Problematik der juridischen Entscheidung*, p. 156.

[36] Makkonen, *Zur Problematik der juridischen Entscheidung*, p. 172. Cf. Makkonen, *Zur Problematik der juridischen Entscheidung*, p. 187: "Die im Obigen vorgenommene Betrachtung zeigt, dass man aus den Grundeinstellung, die hinter den verschiedenen Gesellschaftsordnungen stehen, sog. allgemeinen Rechtsprinzipien, ideologische Grunsanschauungen herausschälen kann, die teils explicite – in geschriebenen Gesetzen – in der Rechtsordnung enthalten sind, teils implicite. Ferner haben wir gesehen, dass derartige allgemeine Rechtsgrundsätze verschiedene Aufgaben haben können; teils sind sie weitere organisatorisch-systematische Prinzipien, die auf das Normsystem selbst beziehen, teils können sie eine Entscheidungsfunktion haben, die in der juridischen Entscheidungstätigkeit hervortritt."

[37] Makkonen, *Zur Problematik der juridischen Entscheidung*, p. 188.

in his *Zur Problematik der juridischen Entscheidung*, the seminal role held by some legal principle or principles for the affirmation or denial of certain legal consequences for the facts at hand has the inevitable side-effect of ruling out the possibility of legal isomorphism.

2.4 The Transition From an Isomorphic Situation to a Situation of Semantic Ambiguity

From a legal point of view, situations in which the outcome of legal discretion is unequivocally determined by an isomorphic relation that prevails between the two fact-descriptions compared, the one as entailed in a legal rule and the other as prevailing in the world, are equal to *clear cases* of legal decision-making.[38] The prevalence of such structural similarity between the two fact-constellations is taken as a sufficient reason for giving effect to the legal outcome specified in the legal norm in question. The issues of how to construct and read the law boil down to the presence or absence of an isomorphic, picture-like relation between the two fact-constellations compared by the judge or other official.

Frequently occurring, non-problematic *routine cases* of legal decision-making ought to be distinguished from the *hard cases* of legal decision-making where there is no legal rule in the legal system that could possibly determine the outcome of the case. Using H. L. A. Hart's terminology, we might say that the routine cases of legal decision-making are situated on the settled *core of meaning* of a legal norm and the concepts entailed in it, while the hard cases of legal decision-making are situated on the more or less uncertain *penumbra of doubt* of such norms or concepts where several interpretations are possible.[39] According to Ronald Dworkin, the judge then needs to *weigh and balance* the relative impact of each of the value-laden legal principles or standards that have some bearing on the issue at hand in a hard case of legal adjudication, with reference to the set of social values and goals at the back of such principles. If there is any doubt as to the prevalence of structural similarity between the two fact-situations compared, there is no an isomorphic relation, either.

The legal significance of the relation of isomorphism is highly restricted, though. Legal principles and the like value-laden standards of legal decision-making are endowed with the twin properties of, first, due institutional support drawn from the prevalent sources of law and, second, a sense of appropriateness enjoyed among the members of the legal community, and such features break the bond of legal isomorphism. Even the kind of legal rules that require some legal discretion from the judge or other official are now left out of consideration, unless they can be recast

[38]Neil MacCormick, with good reason, prefers the term a *routine case* to that of an *easy case*, since many fields of law where routine cases frequently occur, such as tax law, parts of property law, insurance law, and so forth, are highly complex and may be far from easy from the judge's or other official's point of view. MacCormick, *Rhetoric and the Rule of Law*, p. 51.

[39]Hart, *The Concept of Law* (1961), pp. 123–124.

so as to be brought under the relation of isomorphism, pure and simple. From the point of view of a judge or a legal scholar alike, however, it is yet the *hard* cases that are most often encountered in legal analysis and stand in need of significantly more erudition and analysis, and not the routine cases that may be conveniently analysed as legal isomorphism and the Wittgensteinian picture theory of language. Even then, the choice of a key of isomorphism vis-à-vis a pair of legal fact-situations is not possible without first having constructed the two states of affairs with the help of *some* conceivable key of interpretation. In that sense, the act of interpretation always precedes the affirmation of an isomorphic situation in legal decision-making.

The pertinence of the key of isomorphism chosen may be questioned in light of the altered institutional and societal preconditions of legal decision-making, i.e. the set of social values operative at the back of the legal sources. No conception of law may effectively claim immunity or a somehow privileged standing against the subsequent changes effected in the institutional and societal background premises of law. In the course of time, some constitutive elements of the legal order, such as the human and constitutional rights lately, may make a successful claim to greater weight than their competitors. If the institutional and societal premises of law are affected by some thorough enough changes, the hard cases/routine cases dichotomy becomes altered, too. In such a situation, what used to be a routine case of legal adjudication with an isomorphic picture relation between the two states of affairs may be transformed into a genuinely hard case with no traces of structural similarity left.

> The profound legal, social, and economic changes induced by the process of European integration and the global scene of the new forms of *international*, *multinational*, and *transnational* law have to a great extent broken down the traditional bonds of legal isomorphism, turning a host of former routine cases of law into genuinely hard cases that necessitate the weighing and balancing of the value-laden principles of law entailed. Even the notion of state sovereignty has been affected. Neil MacCormick suggested the notion of a *post-sovereign* state with reference thereto.[40]

In Wittgenstein's *Tractatus Logico-Philosophicus*, an isomorphic relation between two possible states of affairs, or fact-situations, is based on the existence of structural match, similarity, or affinity between them. An isomorphic relation between a linguistic expression and a state of affairs in the world may only concern the relation between a linguistic expression and the *external configuration structure* of the state of affairs in the world, since the *internal categorial structure* of the world cannot be presented by meaningful linguistic assertions according to Wittgenstein's philosophical stance. The truth-value of a linguistic sentence can be determined by having reference to the corresponding state of affairs in the world. No question as to the truth-value of an inherently self-referential linguistic assertion, or one concerning the truth-value of a sentence without such an external reference in the world, can possibly arise.

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[40]MacCormick, *Questioning Sovereignty*, pp. 123–136, i.e. chapter "On Sovereignty and Post-Sovereignty". Neil MacCormick's book, *Questioning Sovereignty. Law, State, and Nation in the European Commonwealth*, is a solid contribution to the changes affected in the traditional notion of a sovereign state in light of the recent European legal and social integration.

In fact, the existence of an isomorphic relation between two states of affairs or fact-situations, the one as depicted in the fact-description of a legal rule and the other as existing in the world, is conditional upon a prior act of interpretation in which the *key of isomorphism* is at least temporarily locked. Therefore, the choice of the key of isomorphism to be applied to the two sets of facts necessitates a judgment as to the external configuration structure of the two states of affairs concerned, inclusive of the *internal* categorial structure or the inherent "order of things" that is thought to prevail among the elementary objects (entities, things) and the predicates (qualities, relations) involved. The choice of the key of isomorphism to be adopted makes only one kind of isomorphic relation possible, ruling out all other types of isomorphic relations for the case at hand. The claimed existence of an isomorphic relation between the two states of affairs is thus relative to the specific key of isomorphism chosen for the task.

If the key of isomorphism is altered, the initial relation of isomorphism is broken and we may have: (a) an isomorphic situation of some other kind, if a relation of structural similarity prevails under the novel key of isomorphism, (b) no more than approximate or more-or-less inaccurate structural similarity between the two fact-situations, in the sense of a legal decision-making situation where recourse to the methodology of legal interpretation is needed in the proper sense of the term, as argued by Kaarle Makkonen, or (c) a total absence of structural similarity or even semantic match between the two fact-situations, with reference to Makkonen's idea of a unregulated situation of legal decision-making. That even the affirmation or denial of an isomorphic relation between two fact-constellations requires a prior act of interpretation seems to have gone unnoticed by Makkonen.[41]

2.5 Legal Isomorphism and Institutional Facts

An isomorphic relation between the two states of affairs, the one as given in the fact-description of a legal rule and the other as either actually or at least possibly existing in the world, is based on a *realistic* conception of language and reality. Realism in the scientific or philosophical sense is a plural notion, though. It may entail a commitment to at least seven different issues or topics: (a) *ontological* realism, (b) *semantic* realism, (c) *epistemological* realism, (d) *methodological* realism,

[41] "Bei der in der Rede stehenden Entscheidungssituation, in der zwischen den gegebenen Tatsachen und den in einer bestimmten Vorschrift geschilderten Tatsachen Isomorphie herrscht, konzentriert sich die eigentliche Entscheidungsproblematik auf die Festsetzung der Rechtsfolge. *Es ist wichtig zu beachten, dass es sich dann nicht um Auslegung der Bestimmung handelt, hinsichtlich deren Isomorphie herrscht*. Da Isomorphie gerade das bedeutet, dass die Bedeutung des Rechtsnormsatzes, der diese Bestimmung enthält, völlig klar ist, kann natürlich über diese Bedeutung keine Unklarheit entstehen. Makkonen, *Zur Problematik der juridischen Entscheidung*, p. 108. (Italics added.) The subtitle of the respective chapter in Makkonen's treatise is titled: "Die Argumentationstechnik in der Isomophiesituation", i.e. the argumentation technique in an isomorphic situation.

(e) *axiological* realism, (f) *ethical* realism, and (g) realism in *scientific concept formation* and *theory construction*.[42] It seems that the notion of isomorphism in law necessarily presupposes a commitment to at least ontological and semantic realism.

Ontological realism believes that the existence of objects, things, entities, phenomena, states of affairs, facts, or whatever are taken to "inhabit" the world is – at least, for the most part – independent from the human mind. Tables and chairs, oceans and mountains, planets and stars, or the *Eiffel* tower in Paris and the *Kheops* Pyramid in Ghiza would not cease to exist, even if they were not the object of the sense-observations of some human being or the subject of the inner reflections of some human mind at a given moment of time. The specific mode of "being in the world" of such "things", objects, facts, or entities the existence of which is dependent on a set of socio-cultural beliefs, expectations, or dispositions held by the members of the community, may yet prove problematic, when judged from the point of view of ontological realism. *Institutional facts* are prime examples of such phenomena.

The Austrian philosopher Karl Popper (1902–1994) made the distinction between the three kinds of "worlds", each with the different kinds of "things", objects, or entities entailed in it.[43] In Popper's classification, *world 1* comprises the totality of physical objects and processes of the world such as tables and chairs, stars and planets, or wombats and monotremes. Secondly, *world 2* comprises the contents of the human mind, like the sense data, observations, intentions, thoughts, dreams, and memories of an individual. Finally, *world 3* contains the totality of various kinds of societal and cultural objects, entities, or artefacts of human invention, on the condition that they have gained relative independence from the contents of any individual human mind and have thus become common property for all the human kind. Mathematical figures, scientific theories, the game of chess, the composition *Tabula Rasa* by Arvo Pärt, the European currency *euro*, and the rules and principles of some legal system all dwell in Popper's *world 3*. They also match well with the idea of socio-cultural *institutional facts* as distinguished from the "raw facts", as suggested by Elizabeth Anscombe, John L. Austin, and John R. Searle.[44]

Legal institutions, such as marriage, contract, mortgage, valid will and testament, a company with limited liability (*GmbH*), or the rule of recognition adopted in a legal system to the effect that "what the Queen in Parliament enacts is (valid) law in England", exemplify the world of such institutional facts. Both categories of facts, *raw facts* and *institutional facts*, are acknowledged by a realistic ontology, widely defined, since not even the existence of institutional facts is dependent on the contents of the mental state of any particular individual at a given moment of time. Rather, they have a relatively autonomous and, at least to some extent, established

[42] Niiniluoto, *Critical Scientific Realism*. Cf. Pihlström, *Tutkiiko tiede todellisuutta?* pp. 30–66, 72–73. The title of Pihlström's work could be translated as: *Does Science Examine the Reality?*

[43] Popper, *Objective Knowledge*, p. 106 et seq.

[44] On institutional ontology, cf. Anscombe, *Intention*; Austin, *How to Do Things with Words*; Searle, *The Construction of Social Reality*; Searle, *Speech Acts*; and on institutional legal positivism, MacCormick and Weinberger, *An Institutional Theory of Law*; MacCormick, *Institutions of Law*.

socio-cultural mode of existence, having gained independence from the mental state of any individual.[45]

Semantic realism defines the truth-value of a sentence or linguistic expression as its relation of correspondence vis-à-vis the phenomena, or states of affairs, in the world. The notion of a language – world correspondence refers to an *isomorphic* relation between the two, no matter what kind of reading is ascribed to the logical constitution of the world. Under the correspondence theory of truth, the ontology laid down in Ludwig Wittgenstein's *Tractatus Logico-Philosophicus* may serve as the ontological reference, as defined in terms of the internal *categorial structure* and the external *configuration structure* of a state of affairs in Erik Stenius' insightful analysis. In addition to ontological realism Wittgenstein's *Tractatus* is committed to a *semantic* conception of truth.

A linguistic assertion is accordingly true, if and only if it corresponds to the facts that prevail in the world external to language. In line with the basic commitments of ontological realism, the existence of a state of affairs in the world is taken as an issue that is independent from the particular contents of the sense data, flow of mental states, or specific intentions of an individual subject. As to the core issue of what it is that binds together the "words", or conceptual categories, of language and the "things", or phenomena, of the world,[46] the semantic conception of truth refers to an isomorphic relation of structural similarity between the two.

2.6 The Semantic Theory of Truth by Alfred Tarski

According to Alfred Tarski (1901–1983), the distinguished Polish logician, the truth of the assertion S may be defined as follows[47]:

> "S is true if and only if p",

where "S" is the name of a sentence and "p" is the propositional content of the sentence S. In consequence, the sentence "Snow is white" is true if and only if snow is white. Also, the sentences "Schee ist weiss" (in German), "La neige est blanche" (in French), and "Lumi on valkoista" (in Finnish) are true, if and only if snow is white. In other words, sentence is true if and only if the state of affairs depicted in its propositional content prevails in the world. Tarski's definition of truth is based on the distinction drawn between the *mention*, or name (= S), and the *use*, or propositional content (= p), of a sentence.

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[45] Niiniluoto, too, accepts the entities that belong to Popper's world 3 into his realistic ontology. Niiniluoto, *Critical Scientific Realism*, p. 23.

[46] Cf. Foucault, *Les Mots et les choses. Une Archéologie des sciences humaines*; Foucault, *LArchéologie du savoir*.

[47] Tarski, "The Concept of Truth in Formalized Languages", p. 155: "(1) *a true sentence is one which says that the state of affairs is so and so, and the state of affairs indeed is so and so.*" (. . .) "(2) *x is a true sentence if and only if p.*" (Italics in original.) – Cf. Anderson, "Alfred Tarski (1901–1983), Alonzo Church (1903–1995), and Kurt Gödel (1906–1978)", p. 125.

As a consequence, legal sentence L to the effect that "A is the owner of the thing R" is true, if and only if A is the owner of the thing R. Tarski's definition of truth amounts to a formal conception of truth and truthmakers with reference to the criteria that make a sentence true or untrue. The sentence S_1 to the effect that "A is the legal owner of the thing *x*" is true, if and only if A is the legal owner of the thing *x*. Tarski's semantic theory of truth of course says nothing of the *material criteria* of legal ownership, and they need to be specified in light of the norms of the legal order. To find out whether A really is the owner of *x*, one needs adequate knowledge of the institutional and societal sources of law, along with the prevalent models of legal reasoning that have been adopted in the legal system concerned.

When analysing the truth-value of a sentence Tarski introduced the distinction between the *object language* and the *metalanguage*.[48] The emergence of self-referential linguistic paradoxes and dilemmas, like the *Liar Paradox*, is thereby evaded.[49] The Liar Paradox is a *self-referential* assertion that has proven highly problematic, when judged from a traditional philosophical point of view. By means of the Tarskian object language *vs.* metalanguage distinction, and by placing any truth-theoretical analysis on the expressions of the object language on the level of the metalanguage, the threatening self-referentiality of the Liar Paradox is avoided.

It seems that Tarski's semantic conception of truth requires having recourse to an infinite set of ever higher-order metalanguages, if the judgment of the truth-value of a linguistic sentence is extended to sentences that make up the metalanguages of an ascending order. The metalanguage $L_{(n+1)}$ is linguistically richer than the respective object language L_n because it contains the truth-defining elements peculiar to the metalanguage plus the sum total of the expressions of the object language. Yet, the idea of having an endlessly ascending order of higher-order languages for the sole purpose of determining the truth-value of linguistic expression on a lower-level language is a less than fully satisfactory philosophical precondition to maintain.

2.7 A Critical Evaluation of the Isomorphic Theory of Law

Ludwig Wittgenstein's *Tractatus Logico-Philosophicus* and the notion of ontology and linguistic semantics entailed in it provide the "missing piece" in Kaarle Makkonen's notion of a judge's legal decision-making, as outlined in terms of legal isomorphism under the picture theory of language. A legal fact-description, as laid

[48] Tarski, "The Concept of Truth in Formalized Languages". – In *Logische Syntax der Sprache*, Rudolf Carnap to a great extent anticipated Tarski's distinction between the object language and the metalanguage. Carnap used the terms *object language* and *syntax language*. Carnap, *The Logical Syntax of Language*, p. 4. On a comparison between Carnap's and Tarski's conceptions of truth, Coffa, *The Semantic Tradition from Kant to Carnap*, pp. 300–305.

[49] The *Liar Paradox* was already considered above in the Introduction. Thus, a Cretan says: "all Cretans are liars". Is the assertion true or false? Is the speaker telling the truth or is he lying? If he is telling the truth, he is lying; and if he is lying, he is telling the truth. Therefore, the assertion is true, if it is false; and it is false, if it is true.

down in a legal rule, and a specific state of affairs that exists in the world may stand in a relation of *structural similarity* under the premises of legal isomorphism, if the key of isomorphism selected matches with the contents of the legal system in question. In such a case, both the internal *categorial structure* and the external *configuration structure* of the two states of affairs concerned are in match with each other, as insightfully analysed by the late Finnish philosopher Erik Stenius.

The internal categorial structure of reality consists of the elementary "things" or objects, the specific qualities attached to them, and the relations between them, resulting in the various "things + properties" combinations that constitute the totality of the possible states of affairs. The external configuration structure of the world consists of facts only, i.e. the states of affairs that actually prevail in the world. Such a notion of language and the world, defined as the states of affairs and their linguistic descriptions, may well be placed within the semantic context of legal fact-constellations, i.e. legal fact-descriptions.

The affirmation of the presence of an isomorphic relation between the two states of affairs, the one as depicted in the (legal or other) fact-description and the other as prevailing in the world, is itself a metaphysical postulate that cannot be empirically verified. Moreover, it is something one could not even legitimately speak of, if the austere philosophical stance of Ludwig Wittgenstein's *Tractatus Logico-Philosophicus* were strictly observed in a philosophical analysis.[50] The very idea of a relation of structural similarity between the *internal categorial* structure of reality and the logical syntax of language, and the structural similarity between the *external configuration* structure of the world and the effected empirical semantics and pragmatics of language, fall outside the realm of meaningful linguistic assertions under the *Tractarian* premises. The internal structure of language and the world, along with the relation that exists between the two, can only be *shown*, whereas it cannot be *said* or described by meaningful linguistic expressions, according to Wittgenstein's *Tractatus*.[51]

As a philosophical and semantic theory on the preconditions of truth, language and knowledge, the correspondence theory of truth is well reasoned for. The same goes for its offspring in the legal context, i.e. the judgment as to the presence or absence of structural affinity between two the states of affairs compared. As was argued above, the specific ontology of Wittgenstein's *Tractatus Logico-Philosophicus*, to the effect that states of affairs are the building blocks of reality and a picture relation prevails between any meaningful linguistic expressions and the world, provides a solid definition of an isomorphic relation for Kaarle Makkonen's theory of law and legal interpretation, as well. In addition, the correspondence theory of truth can be read in light of the Tarski's semantic theory of truth. As a consequence, the sentence S to the effect that "the table is white" is true, if and only if *p*, where *p* is equal to the propositional content that the table is white" The *epistemological* and *methodological* questions of how we can possibly know

[50] Wittgenstein, *Tractatus Logico-Philosophicus*, § 6.53 – 7 (pp. 186–189).

[51] Wittgenstein, *Tractatus Logico-Philosophicus*, § 4.12 – 4.1212 (p. 78/79).

whether the table is white or not cannot be reached by such a semantic inquiry, though.

The correspondence theory of truth, as applied to the issues of how to construct and read the law, may be critically evaluated from the point of view of the other conceptions of knowledge and truth. From the point of view of the *coherence* theory, the main fault of the correspondence theory lies in the fact that it totally ignores the inherently linguistic and community-related dimensions of all human knowledge, since they cannot be captured in an isomorphic relation between a linguistic assertion and the world. Still, all human knowledge is by necessity intertwined with language, since to have *intersubjective* knowledge, and not merely a subjective intuition that cannot be conveyed to others, is to *conceptualize* phenomena in giving them a linguistic expression. In the isomorphic theory of law, issues on how to construct and read the law boil down to the one issue of the choice of the key of isomorphism, and all other issues of legal interpretation are ignored. In addition, there is no room for the impact of textual support and mutual coherence of linguistic sentences, as derived e.g. from the institutional and societal sources of law, except for the alleged structural similarity between the two kinds of fact-descriptions compared.

Judged from the point of view of a *pragmatist* notion of truth and knowledge, the notion of an alleged correspondence between language and the world bypasses the consequences and external effects that any true item of knowledge will have on the life of humans. According to the pragmatists, any true belief must pass the test of empirical *corroboration* and the judgment as to "what concrete difference will its being true make in any one's actual life" in William James' phrasing of the issue. Moreover, the correspondence theory ignores the community-aligned dimensions of knowledge, as underscored by Thomas S. Kuhn in his account of the sociology of science and the dynamics of change in it, i.e. *The Structure of Scientific Revolutions*. In the last resort, it is invariably the scientific community that has the final say on what will qualify as scientific knowledge proper and what will fail in such a test.

Viewed from the point of view of philosophical ontology and semantics, the correspondence theory is able to present a highly consistent account of the relation that is thought to prevail between a linguistic assertion and the respective state of affairs in the world. In the legal context, such an isomorphic relation deals with the fact-description entailed in a legal rule and the corresponding state of affairs in the world. The sum total of such legal fact-descriptions, as laid down by the legislator and/or enforced by the courts of justice and other officials, may neatly be read in light of such a conception of reality. The definition of truth and knowledge as an *isomorphic* relation between a linguistic fact-description and the corresponding state of affairs in the world is intuitively easy to accept in line with Alfred Tarski's semantic theory of truth.

An isomorphic approach on how to construct and read the law leaves the judge rather empty-handed, though. From the judge's point of view, legal isomorphism ignores the very issues that the judge finds the most difficult: how to apply the law in a hard case of legal adjudication where there is no isomorphic relation between

the two fact-situations? In Makkonen's terminology, the situation of semantic ambiguity, where recourse to the methodology of legal interpretation is needed from the judge, and the normative gap situation where there is no legal norm that would match with the case, are both ruled out of scope of the isomorphic approach. As a consequence, the isomorphic theory of law cannot cover legal principles, since they necessitate a highly *contextual* reading of the legal precept for the case. Similarly, it fails to comprise any legal rules that are burdened with some semantic ambiguity.