# Analogy as renegotiation of meaning

**Abstract**

Analogy is analyzed as a process of implicit redefinition, which is based on the abstraction of a functional genus, i.e. a common generic property that is contextually essential for the purpose of the move. Based on the twofold genus-species relation and the corresponding *topoi*, the attributes of one of the terms of the analogy (the Analogue) are inherited by the generic concept and then transferred to the other subject (the Primary Subject). For this reason, this type of reasoning can be considered as a strategy for introducing new implicit or explicit criteria of classification, which can result in the redefinition of an existing concept or the introduction of a new one. In the first case, new criteria of classification expand the denotation of the analogue, thereby implicitly modifying its meaning. In the second case, a new definition is provided of a new implicit functional genus, under which the two different analogical concepts fall.

## Introduction

The word "analogy", in Greek "according to ratio", originally meant rational correspondence. In the *Posterior Analytics*, Aristotle pointed out that this type of reasoning could be used for identifying a fundamental characteristic common to various entities, and for which no name exists. As Aristotle put it (*Posterior Analytics*, 98a20-23):

> Again, another way is excerpting in virtue of analogy; for you cannot get one identical thing which pounce and spine and bone should be called; but there will be things that follow them too, as though there were some single nature of this sort.

Aristotle noticed that there is not a specific generic class (a *genus* in his system of predicables, or rather logic-semantic relations, see Macagno & Walton 2009a) that groups together the pounce (of a cuttlefish), the spine (of a fish), and the bone (of an animal). In this case there is not a name referring to this category, which, however, represents an essential feature (or a generic ontological aspect) common to the three entities. These three different concepts share some substantial characteristic that indicates what they are; however, this generic feature has no name. Analogy, in this sense, reveals a *genus* (a generic, common and essential feature) that can be considered as an ontological and semantic property that does not have a conventional name (see Glucksberg & Keysar 1990: 8).

The purpose of this paper is to investigate analogy from the point of view of its function as a mechanism for abstracting a new common property from different concepts and drawing inferences from it (Macagno & Walton 2009b). In this sense, the goal is to show how this process, which can be considered as semantic, can justify the ancient topic that Boethius expressed as "Regarding similar, the judgment is one and the same" (*De Topicis Differentiis* 1197B 27-28), and that in the modern theory of argumentation schemes is represented as follows (Walton, Reed & Macagno 2008: 315):

**Argumentation scheme 1: Argument from analogy**

| | |
|---|---|
| Major premise | Generally, case $C_1$ is similar to case $C_2$. |
| Minor premise | Proposition *A* is true (false) in case $C_1$. |
| Conclusion | Proposition *A* is true (false) in case $C_2$. |

The aim is to investigate how and why a common property, which represents the similarity between $C_1$ and $C_2$, can be abstracted from two distinct concepts, and how and why this new generic category can support the inferential passage. A possible answer can be found in developing the Aristotelian idea of analogy as a semantic process, and combining it with the logic-semantic concept of genus.

## 1. Analogy and functional genus

The argumentation scheme from analogy is grounded on two components: a comparison between two different entities or facts, and a predicate attributed to the primary subject. However, the crucial problem is to understand what comparison is, and what are the mechanisms underlying it. In particular, it is necessary to distinguish between two distinct reasoning processes: 1) the relation between the two terms of comparison and the property or the properties that they have in common, and 2) the relation between the generic common property and the entities that fall under it. The first crucial dimension of analogy that needs to be investigated is how comparison works, and how it can be used for classifying two different concepts under a common characteristic.

We can notice that the fundamental characteristic of comparison corresponds the relationship between the similarity and the difference between the two entities or facts compared, in this case the primary subject and the analogue. The two terms of the comparison can be compared not only because they are similar in some respects, but because they are also different in others, they are unlike (Glucksberg & Keysar 1990: 7). The point is to identify when and how they can be similar and at the same time different. Two varieties of apples (such as *Golden Delicious* and *Granny Smith*) cannot be compared from the point of view of their generic essential properties (they are fruit, they come from *Malus* trees…), but only from the perspective of some characteristics that do not constitute their commonly accepted meaning or classification. For instance, the two varieties of apples can be compared by taking into consideration their flavor, shape, or sweetness. Likely, a steamboat can be considered as similar to an inn because they are *not* both lodging houses. Similarly, a fetus can be compared to a violinist plugged into a person's circulatory system because the two terms of the comparison cannot fall within the same category of "unborn young (of a human being)." Analogy can be considered as grounded on a similarity that includes the two terms of the comparison under a common characteristic, which does not correspond to the definitional genus or a commonly accepted generic category. This common characteristic can be considered as the very purpose of the analogy or it is functional to the attribution of the predicate to the two entities or events. The common characteristic can be thought of as a "super-ordinate category" (Glucksberg & Keysar 1990: 8), in which the two terms of the primary subject and the analogue are included. This generic category does not correspond to the definitional or taxonomic genus of the analogue, but rather to a new property (Glucksberg & Keysar 1990: 9; Macagno & Walton 2009) that is functional to the attribution of the predicate or to a classification.

This new category can be considered as a pragmatic or functional *genus* from a logic-semantic perspective. Aristotle described the genus as "what is predicated in what a thing is of a number of things exhibiting differences in kind" (*Topics* 102a 31-32). According to the Aristotelian account, this predicable is an ontological and logical relation that is connected with the essence, or rather fundamental characteristics, of a concept, such as the relation between "animate being" and "man." The need of classifying the category according to the traditional system of the predicables is grounded on the need of justifying the reasoning process underlying the passage from the attribution of a property *A* to a specific concept ($C_1$) to the attribution of the same property to a more generic one (encompassing both $C_1$ and $C_2$). In the system of the predicables, this type of reasoning was justified by a fundamental principle expressed by Boethius in his *De Differentiis Topicis*. The attribution of the property *A* of the species *P* to the (functional) genus *G* is supported by the maxim connecting the species to the genus: "What is predicated of the parts (in this case essential part, the species) is predicated also of the whole (in this case essential whole, the genus)."[1]

In case of analogy the crucial problem is the requirement of the "essentiality" of the genus. The idea of *functional* (or pragmatic) genus is self-contradictory if we conceive "essence" as something immutable and pre-existing the utterance. However, from a pragmatic perspective, the "sentence or word meaning", or rather what the "word, expression or sentence actually means" (Searle 1981: 77), can be different speaker's meaning, i.e. what the speaker wants to communicate through his speech act (Stern 2008: 263; Carston 2002). The use of a sentence in a speech act can create meaning that is different from the semantic one. In case of analogy, the comparison is functional to a communicative goal, which can be explicit (the attribution of a predicate) or implicit (a new classification). In both cases, analogy redefines contingently the concepts used, in the sense that for the purpose of the comparison, the two terms are characterized by semantic features that are different from the definitional ones. The new property provides a new criterion that does not represent the most generic *fundamental* characteristic of the concept (constituting its "dictionary" meaning), but only a *functional* one. The abstract property in this sense has the function to make the equivalence between the two compared entities relevant for a communicative purpose. For this reason, the analogical genus does not refer to an characteristic of the terms of the comparison that describes "what a thing is absolutely", but simply "what a thing is contextually", for the specific communicative and pragmatic purpose of the analogy. On this perspective, the primary subject and the analogous are functionally and contingently redefined.

## 2. Abstraction and relevance

In order to describe the process of abstraction on which analogy is based, we need to analyze two district processes: the mechanism of abstraction of the functional genus, and the different ways this genus is triggered and supported.

### *2.1. Abstracting the functional genus*

The creation of a functional genus is an implicit mechanism in which an abstract and not pre-existing category is created ad hoc to support the reasonableness of the attribution of the predicate to both terms of comparison. For instance, we can consider a

[1] "Quod enim singulis partibus inest, id toti inesse necesse est" (Boethii *De Differentiis Topicis*, 1189A).

famous legal analogy between innkeepers and steamboat operators (*Adams v. New Jersey Steamboat Co.*, 151 N.Y. 163, 1896):

**Case 1**

> It was deemed to be a sound and necessary rule that this class of persons should be subjected to a high degree of responsibility in cases where an extraordinary confidence is necessarily reposed in them, and where great temptation to fraud and danger of plunder exists by reason of the peculiar relations of the parties. The relations that exist between a steamboat company and its passengers, who have procured staterooms for their comfort during the journey, differ in no essential respect from those that exist between the innkeeper and his guests. […] A steamer carrying passengers upon the water, and furnishing them with rooms and entertainment, is, for all practical purposes, a floating inn, and hence the duties which the proprietors owe to the passengers in their charge ought to be the same.

This analogy is used to attribute the same predicate "to be liable for the guests' losses" to a category of individuals that cannot be considered as innkeepers, i.e. steamboat operators. This analogy creates a new functional genus, i.e. a category characterized by a specific property (or bundle of properties) that constitute the reason to attribute the predicate to its hyponyms. In this case the reasoning is explicit and provides the characteristics defining this new genus: "providers of accommodation to guests reposing in them extraordinary confidence."

Sometimes, however, the creation of a new functional genus can be used as an instrument for generating an ambiguous category. The crucial dimension of analogy is the relationship between the predicate and the property that grounds its predication. However, when this relation is not made explicit, it can be reconstructed in different fashions, leading to the abstraction of different properties and therefore implicit categories. For instance we can consider the famous case used by Thomson in defense of abortion (Thomson 1971: 48-49):

**Case 2**

> You wake up in the morning and find yourself back to back in bed with an unconscious violinist. A famous unconscious violinist. He has been found to have a fatal kidney ailment, and the Society of Music Lovers has canvassed all the available medical records and found that you alone have the right blood type to help. They have therefore kidnapped you, and last night the violinist's circulatory system was plugged into yours, so that your kidneys can be used to extract poisons from his blood as well as your own. [If he is unplugged from you now, he will die; but] in nine months he will have recovered from his ailment, and can safely be unplugged from you

In this case, the problem is to identify the functional genus, and more specifically the relevant property thereof, warranting the attribution of the predicate "to have no right to be left to use the other's body." Both a fetus and the violinist are beings, both are human according to some views, but certainly they are not both persons from a legal perspective. Moreover, the two beings are using the other's body *without any consent* of the host? Or they are *not bound to the host by any responsibility* or *obligation* of the latter? The problem in this case is to identify the reason why the predicate can be attributed to the functional genus, which specifies the characteristics that the latter need to have.

### *2.2. Types of analogy and the functions of the abstracted genus*

Analogies can have different structures in the sense that the "identity of relations" can be shaped according distinct propositional forms and communicative purposes. We can consider the following cases:

1. I am to dancing what Roseanne is to singing and Donald Duck to motivational speeches. I am as graceful as a refrigerator falling down a flight of stairs. (Leonard Pitts, "Curse of Rhythm Impairment" Miami Herald, Sep. 28, 2009)
2. If you want my final opinion on the mystery of life and all that, I can give it to you in a nutshell. The universe is like a safe to which there is a combination. But the combination is locked up in the safe. (De Vries 1965: 307)
3. Thus (e.g.) inasmuch as the relation of a doctor towards the possession of ability to produce health is like that of a trainer towards the possession of ability to produce vigour, and it is a property of a trainer to possess the ability to produce vigour, it will be a property of a doctor to possess the ability to produce health. (Aristotle, *Topics* 137a4-8)
4. Public officials ought not to be selected by lot. That is like using the lot to select athletes, instead of choosing those who are fit for the contest; or using the lot to select a steersman from among a ship's crew, as if we ought to take the man on whom the lot falls, and not the man who knows most about it. (Aristotle, *Rhetoric* 1393b4-1393b8)

In (1) the dancing ability of the primary subject (the speaker) is compared with other cases of "complete inability" in performing specific activities. The analogues in this case illustrate a new genus that constitutes the very purpose of the analogy, namely classifying the primary subject under a new category. This new category contains in itself a value judgment, which is the very purpose of the move. In (2) the analogy consists in an illustration of a genus from a single case that is created specifically in order to exemplify this abstract genus (Goodman 1968: 52-66; Stern 2000: 153-156). This new category in this case can be represented by different predicates such as "to be a problem that makes no sense to try to solve". It constitutes the very purpose of the analogy, i.e. the classification of the primary subject under a specific functional genus, which contains the judgment that is the conclusion of the analogy. In both cases the analogy works as the construction of a genus through illustration and exemplification. In (3) and (4) the mechanism is noticeably different.

In (3) the doctor is compared to a trainer from the point of view of their common property, i.e. possessing the abilities of producing health and vigor. The doctor and the trainer are regarded from a specific perspective, namely the ability that characterizes them. The two entities are placed as species of the generic category of professions, and the attribution of the generic predicate to the category of the entities is grounded on the semantic relation of "property". In (4) the reasoning is different because only one functional category is abstracted from the comparison, the one under which the subject and the analogues fall. The different entities are regarded from the point of view of "being not selectable by lot." The characteristic that grounds this predication is "duties requiring a specific ability or knowledge", because chance cannot reveal ability. In these two latter cases of analogy there is an unbalance between the attribution of the predicate to the analogues and to the primary subject. Whereas the predication is uncontroversial for the analogue, it can be problematic when attributed to the primary subject. For this reason, the creation of a functional genus under which analogues and primary subject fall and the attribution of the predicate to it constitute the core of the argumentative move. The force of this mechanism lies in the relationship between the predicate and the

functional genus, which can based on a semantic property, or cause-effect, or values. For instance, while in (3) the relation is semantic (absence of the specific ability results in not being a specific professional, in (4) values or consequences combine with sign (lot does not reveal ability; one should choose the most able person in charge for an activity/unknowledgeable person cannot perform their activity properly). In this sense, the *relevance* of the functional genus to the property can be represented by a specific argumentative relation.

Different argumentative relations can establish the link of relevance between the predicate and the genus. Such relations constitute a fundamental dimension of the strength of an analogy. For instance, we consider the famous case quoted by Aristotle (Aristotle, *Prior Analytics*, II, 24; 68b38 -69a19):

**Case 3**

> If we want to show that the aggression of Athens against Thebes was evil, we must first know that aggressive war on neighbours is evil. Evidence of it is obtained from similar cases, e.g. the aggressive war of Thebes on Phocis. Assuming then that aggressive war on neighbours is evil, and that the attack of Athens on Thebes was aggressive war on neighbours, it follows that the attack of Athens on Thebes was evil.

Here the abstraction of the genus "aggressive war against neighbors" is functional to the attribution of "to be evil" because it can be supported by a possible implicit causal relation (wars against neighbors can be dangerous or lead to unfortunate aftermaths). The acceptability of this analogy depends on the degree of acceptability of this relation. For instance, the acceptability of this analogy would have been noticeably different if the genus were simply "wars between Greek cities", which would hardly be accepted as a cause of evil consequences.

The correlation between the strength of the relevance relation and the one of the analogical reasoning emerges clearly in cases in which the first one is based on values. For instance, we consider the following famous analogy (Aristotle, *Rhetoric* 1399b 1-5):

**Case 4**

> And Theodectes in his Law said, 'You make citizens of such mercenaries as Strabax and Charidemus, as a reward of their merits; will you not make exiles of such citizens as those who have done irreparable harm among the mercenaries?

This analogy is grounded on the relevance relation between "social behavior of a person" and "implementation of punishment or rewards connected to the status of citizenship." This relation is value-based, as the quality of a person's behavior is considered to be a principle for attributing rewards or punishments. Moreover, in this case the strength of the analogy is grounded on an implicit threat of inconsistent commitment, as failure to punish the citizens that misbehaved in war would contradict the value that the agent advocated in his first decision.

## 3. The logic of genus-species

Reasoning from analogy is characterized by two passages: the abstraction of a functional property to which a predicate is or can be attributed, and the classification of the primary subject according to the new category or the predicate attributed to the category. In the subsections above the first reasoning passage has been described as a process of abstraction grounded on exemplification or reasons supporting the attribution

of a predicate. The other passage, the one from the category to the primary subject, needs to be clarified. This relationship is clearly defeasible and for this reason it can be explained using the ancient system of *loci* (Rigotti 2006; Rigotti & Greco Morasso 2010; Kienpointner 1987) and in particular the maxims concerning the genus.

The abstraction of a new ad hoc category results from a logic-semantic point of view in the creating of a functional genus, i.e. in a relational predicate that is characterized by specific logical and semantic properties. The genus is semantically more generic than the species, in the sense that the genus can be predicated essentially of the species, but not vice-versa. For example, if "animate being" is the genus of "man", a man can be considered as an animal, but an animal is not a man based on the principle that "species partake of the genera, but not the genera of the species" (Aristotle, *Topics* 121a 12). Similarly, the functional genus abstracted from the analogous can be used for classifying the primary subject, as it is regarded as a species of the new superordinate category. For this reason, in case 1 above, the speaker is described as belonging to a species of individuals characterized by "complete inability in performing specific activities," as "of the objects of which the species is predicated, the genus ought to be predicated" (Aristotle, *Topics* 121a 26).

The other types of analogy, based on the attribution of a predicate to the functional genus, are governed by a different *locus*, described by Boethius as follows: "Whatever is present to the genus is present to the species" (*De Topicis Differentiis* 1188B 21-22), in the sense that "the essence of the genus and the accidents adhering to that essence are also part of the species" (*De Topicis Differentiis*, note 67). As the genus is functional to the predication of the predicate, namely it is warranted by the genus, it is predicated also of the specific concepts falling under it. For instance, in case 4 above, public officials are presented as a species of the generic category of "duties requiring a specific ability or knowledge", which justifies the attribution of the predicate "not being selectable by lot." For this reason, the following reasoning is triggered:

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|---|---|
| Maxim | Whatever is present to the genus is present to the species. |
| Assumption | Public officials are a species of "duties requiring a specific ability or knowledge", of which "to be not selectable by lot" is said. |
| Syllogism 1 | Whatever is present to the genus is present to the species.<br>"Duties requiring a specific ability or knowledge" is the genus of "public officials."<br>Therefore, whatever is present to "duties requiring a specific ability or knowledge" is also present to "public officials." |
| Syllogism 2 | Whatever is present to "duties requiring a specific ability or knowledge" is also present to "public officials."<br>Duties requiring a specific ability or knowledge are not selectable by lot.<br>Therefore public officials are not selectable by lot. |

**Table 1: Analogy as a genus-species relation.**

This mechanism can explain also the strategic role of analogy. The hearer can attack the aforementioned classification by either denying the belonging of the primary subject to the functional genus, or the attribution of the predicate to the genus. As mentioned above, the first passage is implicit, and the specific features of the genus can be ambiguous, making the defense of the functional genus easier for the speaker. Otherwise, the hearer can reject the relationship functional genus – predicate by denying

that the predicate applies to one of the species. However, by providing extreme and almost irrefutable cases, the speaker increases the burden of denial.

## 4. Analogical redefinitions and analogical definitions

As seen above, analogy is based on a semantic operation of abstracting a generic property that is contextually needed for the attribution of a predicate or a classification. This mechanism is contextual, as the process of abstraction does not involve the commonly shared (and defined) concepts, but rather the specific use thereof, their pragmatic and contextual function. The idea of analogy as a form of definition or redefinition can be analyzed by taking into account the distinct definitional processes based on analogical reasoning. The starting point is the analysis of the reasoning mechanisms underlying legal analogy. In law, analogical reasoning is a fundamental interpretative technique. For this reason, the contextual analogical abstraction becomes relevant from a semantic and legal perspective, as it provides a redefinition or a definition that constitutes a new interpretation, i.e. a new meaning of a concept.

In law, arguments from analogy extend the attribution of a legal predicate to entities that are different from the ones falling within the existing legal categories. As Tarello put it, if a rule attributes any normative qualification (such as a power, an obligation or a status) to an individual or a category of individuals, it can be concluded that there is a different rule in force (or a different rule exists, is valid) that attributes the same quality to another individual or category of individuals connected with the former class by a similarity or an analogy relation. Such a relation shall be relevant from the perspective of the applicable law, or the qualification to be attributed (Tarello 1980: 351). However, this pattern of reasoning can have two different variants. The cases compared can be instances of the same category governed by the legal qualification *A*, or two categories (*P* and *Q*) of which the second (*Q*) is not governed by *A*. In other words, there is a crucial difference between a similarity of two cases (*a* and *b*) that can belong to the same class *P*, and a similarity of two distinct categories (*P* and *Q*).

This difference of reasoning can be mirrored by the structure of two distinct schemes of legal analogy, the so-called *analogia legis*, or the application of a *written* law to a different, similar case (Colombo 2003: 96-97; Cendon 2011: 236), and *analogia iuris*, or the application of an abstract and unexpressed principle of law from which the stated law is drawn (Guastini 2011: 281). In the first case analogy is used to *apply* the law to borderline or controversial cases, not by abstracting a new generic concept but rather by specifying the conditions defining an already existing legal category. If we analyze the *analogia iuris*, or rather if we interpret the mechanism underlying this process of reasoning from a purely argumentative perspective, we can notice that this type of reasoning is used to construct an unwritten category (a principle of law). This reading of the two legal interpretative strategies is clearly not intended to explain what these two types of legal analogy are. On the contrary, such reasoning processes have been used only to draw a distinction that applies to ordinary reasoning, and for this reason they have been analyzed only focusing on their logical and semantic dimension, without considering their legal implications or foundations. However, this distinction points out a crucial difference between the use of analogy to redefine an already existing and defined concept, and it role in creating and defining new or implicit ones. In this sense, the *analogia legis* and *analogia iuris* can be considered from a logical perspective as two distinct analogical processes, consisting respectively in the renegotiation of an existing meaning and the creation of a new (or undefined) concept.

## 5. Analogical redefinitions and *analogia legis*

*Analogia legis* consists in the comparison between two cases, a clear case (governed by a legal provision) and a borderline case, to which it is not clear whether the legal predicate *A* applies or not. The analogy specifies, or rather redefines, the relevant category *P* under which the clear case falls, so that the borderline case can also be included in it. From a reasoning perspective, *analogia legis* can be conceived as a form of specification of the properties of the legal category *P*. Since the existing definition does not allow a classification of borderline cases, through analogy the relevant, unstated factors are pointed out. This type of reasoning can be represented as follows (Ashley 1991: 758):

**Argumentation scheme 2: Specific scheme from *analogia legis***

| | |
|---|---|
| **Premise 1 (rule)** | If *x* is *P*, then *x* has the right/is *A*. |
| **Premise 2 (borderline)** | It is not clear whether *a* (a borderline case) is *P*. |
| **Similarity premise** | *a* is similar to *b*. |
| **Premise 3 (principle of classification)** | *b* was classified as *P* because of the factors $f_1$, $f_2$, …, $f_n$. |
| **Redefinition premise** | If *x* has the factors $f_1$, $f_2$, …, $f_n$, then *x* is *P*. |
| **Premise 4 (factors)** | *a* has $f_1$, $f_2$, …, $f_n$. |
| **Conclusion** | Therefore, *a* is *P*. |

The predicate is specified (or rather redefined, Sorensen 1991) by highlighting the factors that are considered as essential for the legal qualification to apply. In this sense, it points out the characteristics that support the attribution of the legal predicate *A* to the category *P*, based on shared legal values.

The argument from *analogia legis* can be illustrated in the civil law by the following case from the Italian Corte Costituzionale (Judgment no. 0280 of 2010). The article no. 180, 4th paragraph of the Legislative Decree no. 285 of 1992[2] allows public transport (vehicles for the transportation of persons) and vehicles for rental (without driver) to keep on board only the photocopy of the registration document, authenticated by the owner. The problem arose when a police officer stopped the driver of a vehicle owned by a company of waste management. The driver showed him the driving license and the photocopy of the registration documents, authenticated by the company, instead of the original copies. However, the purpose of the vehicle was not the transportation of people, but of objects. For this reason, the case did not fall clearly within the category

[2] Art. 180, 4th paragraph, of the aforementioned Legislative Decree no. 285 of 1992, amended by art. 3, 17th paragraph of the Law Decree no. 151 of 27 June 2003 ("Integrations and amendments to the highway code"), converted into the law no. 214 of 1 August 2003, with amendments to the section in which it forbids its extension to all vehicles of public companies providing essential services, as defined by art. 1 of the law no. 146 of 12 June 1990 (Rules on the enforcement of the right to strike in the sector providing essential public services, and on the protection of the rights of individuals under the constitution. Institution of the Guarantee committed for the implementation of the law).

provided for by the aforementioned law, even though shared some similarities with it. The case was analyzed by the Italian Corte Costituzionale, which reasoned as follows[3]:

**Case 5**

> The law that allowed the drivers of vehicles for public transport of persons to carry the photocopy of the registration document instead of the original copy was based on the need of promptly and systematically retrieving the original documents for purpose of renewal, updating and periodical service, in order to avoid the risk of their loss and the consequent custody of the vehicle […]. These purposes concern also any other types of public services characterized by essentiality, – as specified in art. 1 of the law no. 146/1990 – and involving the management of a fleet of vehicles.

In this case, the category of "vehicles for public transport of persons" was redefined by means of analogy. The court set out the relevant features that could support the attribution of the right, i.e. "being an essential public service" and "managing a fleet of vehicles." These two features justified a permission based on the legal value of avoiding risks that can cause the failure to provide essential services, and thereby affect the public good. We can represent the reasoning as follows:

| | |
|---|---|
| **Premise 1 (rule)** | If *x* is a "*driver of vehicles for public transport of persons*" (*P*), then *x* has the right to "*carry the photocopy of the registration document instead of the original copy*" (*A*). |
| **Premise 2 (borderline)** | It is not clear whether a "*driver of a waste management vehicle"* is *P*. |
| **Similarity premise** | A "*driver of a waste management vehicle"* is similar to a "*driver of a vehicle for public transport of persons*". |
| **Premise 3 (principle of classification)** | A "*driver of a vehicle for public transport of persons*" was classified as *P* because of the "*essentiality of the service proivided*" ($f_1$) and the "*management of a fleet of vehicles*" ($f_2$). |
| **Redefinition premise** | If *x* has the factors $f_1$ and $f_2$, then *x* is *P*. |
| **Premise 4 (factors)** | A "*driver of a waste management vehicle"* has $f_1$ and $f_2$. |
| **Conclusion** | Therefore, a "*driver of a waste management vehicle"* is *P*. |

**Table 2: Reconstructing analogia legis**

*Analogia legis* can be considered as a type of reasoning used for extending a category governed by a legal provision, which can be set out in a statutory provision or in a previous decision (case law). *Analogia legis* can be used to interpret state or federal law, such as in the following case (*Dooley v. Parker-Hannifin Corp*., 817 F. Supp. 245, at 248 1993):

**Case 6**

> Under Rhode Island Law, the "sale" of a product may create a variety of warranties regarding that product. Thus, a warranty of merchantability is implied in a contract for

[3] See http://www.dircost.unito.it/SentNet1.01/srch/sn_showArgs.asp?id_sentenza=20100280#20100280_3 (accessed on 7 March 2012).

> the "sale" of goods if the "seller" is a merchant with respect to goods of that type. […] Breach of those warranties exposes the "seller" to liability for personal injury that proximately results from the breach. […] Responsibility for personal injury caused by a defective product also may be imposed on one who "sells" the product on the theory of strict liability in tort as set forth in Restatement (Second) of Torts § 402A (1965).

This provision of law covers the category of "sold products", but does not provide any indication for leasing agreements. A seller of a defective product is liable for it, but it is unclear whether lessors are exposed to the same liability. The court reasoned by analogy, pointing out characteristics common to both sale and lease, i.e. the placing of "[…] products in the stream of commerce by means of transactions very similar to sales." The fact that in both cases a product is put on the market by means of a transaction justifies liability based on the legal value of protecting the customer and the public. However, the characteristic of "placing products in the stream of commerce" redefines the concept of "sale" used in the law. In this specific context, this category is extended by redefinition, so that borderline cases are included.

In case law, the mechanism is more complex because there is not an explicit provision of law setting out a category and attributing a legal predicate to it. Instead, at common law the judge both applies and defines the legal rules based on previously decided cases (Friesen 1996: 12-13). In this system the mechanism of *analogia legis* works as the specification or extension of a category that is implicit or not explicitly defined by law. Analogy in this case is used to point out characteristics (or factors) that are essential or fundamental for the attribution of the relevant legal predicate, and in this fashion provide a definition of an otherwise undefined or insufficiently defined concept.

One of the most famous cases involving this use of analogy is *Popov v. Hayashi* (WL 31833731, Cal. Super. Ct. 2002). The plaintiff (*Popov*), a baseball fan, stopped with his glove the ball hit by a famous player, who set a new record with it. However, in order to reach for the ball, Popov lost his balance and was forced to the ground by the crowd, leaving the ball loose on the ground. The defendant (*Hayashi*) was involuntarily forced to the ground as well, and when he saw the loose ball, he picked it up, rose to his feet, and put it in his pocket. Popov, who intended to establish and maintain *possession* of the ball, could not prove that he *secured* it. The crucial concept in this case is the definition of "possession", which was fundamental for classifying Popov's act and, as a consequence, charging Hayashi with conversion. The problem in this case was the absence of a clear and univocal definition of "possession" in the California case law. Since a specific definition could not be found in both the written law and the case law, the parties supported their own redefinitions by means of analogy. For instance, the plaintiff used the following argument (*Popov v. Hayashi*, WL 31833731, at 8, Cal. Super. Ct. 2002):

**Case 7**

> The hunting and fishing cases recognize that a mortally wounded animal may run for a distance before falling. The hunter acquires possession upon the act of wounding the animal not the eventual capture. Similarly, whalers acquire possession by landing a harpoon, not by subduing the animal.

The plaintiff compared the possession of the ball with the possession of an animal or a whale in hunting and fishing. In such cases, the value supporting the classification is to protect the interests of the party that makes the biggest efforts to capture the animal, which lead causally to the capture or subduing thereof. For this reason, the criteria, or

rather factors, essential for the protection of such a value were stated as follows: "The actor to be actively and ably engaged in efforts to establish complete control" ($f_1$); "Such efforts must be significant and they must be reasonably calculated to result in unequivocal dominion and control at some point in the near future" ($f_2$). For this reason, the plaintiff claimed that the calculated efforts made to establish complete control on the ball could classify his partial possession as possession.

However, the court noticed that a ball is not an animal, and the efforts to secure a ball are not the same as the ones made to capture a whale or a fox. For this reason, the crucial problem was to determine whether partial possession of an object could be considered as full possession. To this purpose, the court used a different analogy to establish the factors that could lead to a more viable specification (or redefinition) of "possession." The analogy used by the court was the following (*Popov v. Hayashi*, WL 31833731, at 7, Cal. Super. Ct. 2002):

**Case 8**

> […] five boys were walking home along a railroad track in the city of Elizabeth New Jersey. The youngest of the boys came upon an old sock that was tied shut and contained something heavy. He picked it up and swung it. The oldest boy took it away from him and beat the others with it. The sock passes from boy to boy. Each controlled it for a short time. At some point in the course of play, the sock broke open and out spilled $775 as well as some rags, cloths and ribbons.
> The court noted that possession requires both physical control and the intent to reduce the property to one's possession. Control and intent must be concurrent. None of the boys intended to take possession until it became apparent that the sock contained money. Each boy had physical control of the sock at some point before that discovery was made.

The relevant properties supporting the determination of "possession" (and, as a consequence, of the rights associated thereto) were considered to be physical control and intent, which need to be concurrent. The value supporting the classification (and the attribution of the relevant legal predicates) was equality, i.e. the protection of the interest and rights of parties having the same claims on a piece of property. Since both parties had physical control and intent, they were found equally entitled to the ball.

## 6. Analogy as an instrument for introducing new generic categories

The analogical mechanism labeled above "*analogia legis*" is aimed at redefining an already existing concept, which is however not defined, or not sufficiently specified. Considering the idea of analogy described in the first sections, this type of reasoning encompasses another mechanism, which we can refer to as *analogia iuris*. This label is intended to only cover a specific logical dimension of analogy, which can be compared to the reasoning aspect of this instrument of legal interpretation (without any pretense to discuss the legal implications or characteristics thereof). From a purely argumentative perspective, we can describe *analogia iuris* as the application to a specific case of an implicit ratio or principle of a law governing a different case. For this reason, this analogical process consists in introducing a new category that includes both the primary subject and the target, which can be implicit or explicit. This argument can be represented as follows (Macagno & Walton 2009b: 173; Guastini 2011: 280-281):

**Argumentation scheme 3: Specific scheme from *analogia iuris***

| | |
|---|---|
| **Premise 1 (target)** | No law provides for the *x*'s that are *Q*. |
| **Premise 2 (property)** | If *x* is *P*, then *x* has the right/is *A*. |
| **Similarity premise** | *P* and *Q* belong to the same functional genus *G*. |
| **Species – Genus premise** | If *x* is *G*, then *x* has the right/is *A*. |
| **Conclusion** | If *x* is *Q*, then *x* has the right/is *A*. |

This pattern describes a reasoning structure that can be used for different purposes according to the legal system. In civil law, it can be considered as a reason provided for the use of a systematic interpretation. In lack of a source statement governing a specific case, the enforceable rule needs to be found within the legal system, by interpreting one of the provisions already in force. Analogy in this case provides the "surface reasoning structure" which actually draws its force from the authority of the completeness of the legal system. This mechanism represents the reasoning underlying the "construction of an unexpressed rule" (Guastini 2011: 278), which can be illustrated by the following case (Guastini 2011: 280):

**Case 9**

> According to art. 2038 of the Italian Civil code, anyone who has unduly received some goods and has transferred them in good faith, ignoring the obligation to return them, shall return the consideration thereof and not the very goods or their value. The ratio of the law is the principle of protecting good faith. On this view, the law provides only for the restitution of the consideration and not more burdensome obligations in order to protect the good faith of the individual. The undue receipt together with the transferal subsequent thereof is similar to the purchase and sale of stolen goods when their illicit provenience is unknown. Therefore, art. 2038, 1st paragraph, shall be interpreted as applicable also to the case of purchase in good faith of stolen goods.

In this case, an unexpressed principle is abstracted from a law and applied to a case not possibly falling thereunder, so that the scope of an existent provision is broadened. The new category "transferal of goods obtained in good faith" is introduced, encompassing both the goods that have been purchased and the ones that have been simply received.

The creation of a new abstract functional genus by means of analogy is clear in opinion rendered by the court the aforementioned case *Popov v. Hayashi*. Using the analogy mentioned at case 8 above, the Court provided the criteria for defining the concept of "possession", establishing that according to this (re)definition both parties had both possessed the ball. However, the problem was to determine the legal title to the ball, considering that both parties possessed it equally, and that no precedent existed in California. The court reached a conclusion by drawing an analogy from a case that was noticeably different, as it did not involve possession at all (*Popov v. Hayashi*, WL 31833731, at 7, Cal. Super. Ct. 2002):

**Case 10**

> Although there is no California case directly on point, *Arnold v. Producers Fruit Company* (1900) 128 Cal. 637 provides some insight. There, a number of different rune

> growers contracted with Producer's Fruit Company to dry and market their product. Producers did a bad job. They mixed fruit from many different growers together in a single bin and much of the fruit rotted because it was improperly treated. When one of the plaintiffs offered proof that the fruit in general was rotten, Producers objected on the theory that the plaintiff could not prove that the prunes he contributed to the mix were the same prunes that rotted. The court concluded that it did not matter. After the mixing was done, each grower had an undivided interest in the whole, in proportion to the amount of fruit each had originally contributed. The principle at work here is that where more than one party has a valid claim to a single piece of property, the court will recognize an undivided interest in the property in proportion to the strength of the claim.

In this case, the analogy is between two distinct categories, “to have partial possession in a ball” (primary subject) and “to contribute to the mix of fruit” (analogous), to the latter of which the legal predicate “to have an undivided interest in the whole”) is attributed. The two categories are placed under a common generic property, a genus that is functional to the attribution of the predicate, i.e. “to have a valid claim to a single piece of property.” As a result of this abstraction, all parties having a valid claim to a single piece of property have also an undivided interest in it and, therefore, also the parties that have partial possession in a part have an undivided interest in it. This argument can be reconstructed following the aforementioned more abstract pattern:

| | |
|---|---|
| **Premise 1 (target)** | No law provides for the *x*’s that “have partial possession in a ball” (*x* are *Q*). |
| **Premise 2 (property)** | If *x* “contributed to the mix of fruit” (*x* is *P*), then *x* “has an undivided interest in the whole” (*x* has the right/is *A*). |
| **Similarity premise** | *P* and *Q* belong to the same functional genus “to have a valid claim to a single piece of property” (*G*). |
| **Species – Genus premise** | If *x* is *G*, then *x* has the right/is *A*. |
| **Conclusion** | If *x* is *Q*, then *x* has the right/is *A*. |

**Table 3: Reconstructing *analogia iuris***

Unlike the process labeled “*analogia legis*”, this type of analogical reasoning is not used for redefining an already existing concept, but rather for introducing a new one. The new category of “having a valid claim to a single piece of property” was not an already existing legal category. On the contrary, it was introduced by means of the analogical reasoning.

## Conclusion

Analogy can be regarded as a reasoning process grounded on the abstraction of a generic property from two comparable entities or states of affairs. This generic property can be considered from a logic-semantic perspective as a functional genus, in the sense that it is a contextually essential characteristic of the two terms of the comparison, under which fall both of them. A pragmatic and contingent essence of a concept can be justified by considering the analogical process as a mechanism of redefinition grounded on relevance. This approach is based on two crucial dimensions, the analysis of relevance as an argumentative relation of justification, and the account of the process of selecting the relevant features of a concept as a mechanism of contextual redefinition.

The common generic property is a property that is fundamental (i.e. relevant) for the attribution of the relevant predicate or the achievement of the communicative intention. This relevance relation can be accounted for as an argument that justifies the predication of the property based on different principles, such as cause-effect, values, consequences, etc. On this perspective, the force of an analogy depends on the acceptability of this argumentative relation. The second crucial dimension of analogy pointed out in this paper is the role of analogy as a re-definitional process. The functional genus abstracted from the terms of the comparison is not simply a focus on some characteristics instead of others, a category in the sense of a collection of concepts or individuals. The genus implicitly and contextually redefines its species, i.e. the concepts that in that specific analogy are placed under it. For the purpose of the analogy (and the communicative move) the two concepts have a specific contextual meaning established by the new functional genus. For this reason, analogy can be considered as a strategy for contextually and contingently redefining a concept.

The mechanism of analogy can be used for distinct purposes. The analogical processes that have been referred to as "*analogia iuris*" and "*analogia legis*" mirror at a more conceptual level a difference between two different uses of reasoning from analogy. The first one is a form of (implicit or explicit) redefinition of a concept, while the second one consists in the introduction of a new generic property, under which the two compared terms fall.

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