



Análisis Filosófico

ISSN: 0326-1301

af@sadaf.org.ar

Sociedad Argentina de Análisis Filosófico
Argentina

LINDAHL, LARS

HOHFELD RELATIONS AND SPIELRAUM FOR ACTION

Análisis Filosófico, vol. XXVI, núm. 2, noviembre, 2006, pp. 325-355

Sociedad Argentina de Análisis Filosófico

Buenos Aires, Argentina

Available in: <http://www.redalyc.org/articulo.oa?id=340030293007>

- How to cite
- Complete issue
- More information about this article
- Journal's homepage in redalyc.org

redalyc.org

Scientific Information System

Network of Scientific Journals from Latin America, the Caribbean, Spain and Portugal

Non-profit academic project, developed under the open access initiative

HOHFELD RELATIONS AND *SPIELRAUM* FOR ACTION

LARS LINDAHL

Lund University (Sweden)

Abstract

The paper intends to show, (1) that W. N. Hohfeld's theory of fundamental jural relations is relevant to economic theory, and (2) that Hohfeld's system can be reconstructed by the concepts of 'liberty space' and 'ability space', understood as an agent's *Spielraum* for action. The first half of the paper is devoted to an exposition of Hohfeld's system and to the question of its relation to the economic analysis of property rights. The second half concerns *Spielraum* theory and the reformulation of Hohfeldian distinctions in terms of liberty spaces and ability spaces. It is argued that the reformulation is useful, *inter alia*, for describing exchange of property rights by contract.

KEY WORDS: jural relations - economic theory - property rights - liberty spaces - ability spaces.

Resumen

El artículo intenta mostrar: (1) que la teoría de las relaciones jurídicas fundamentales de W. N. Hohfeld es relevante para la teoría económica y (2) que el sistema de Hohfeld puede ser reconstruido mediante los conceptos de "espacio de libertad" y "espacio de capacidad", entendidos como el *Spielraum* para la acción del agente. La primera mitad del artículo está dedicada a la exposición del sistema de Hohfeld y al problema de su relación con el análisis económico de los derechos reales. La segunda mitad se refiere a la teoría del *Spielraum* y a la reformulación de las distinciones hohfeldianas en términos de espacio de libertad y espacio de capacidad. Se argumenta que esta reformulación es útil, *inter alia*, para describir el cambio de los derechos reales mediante contratos.

PALABRAS CLAVE: relaciones jurídicas - teoría económica - derechos reales - espacio de libertad - espacio de capacidad.

1. Introduction

Within institutional economics, in the tradition of Ronald Coase, it is often emphasised that economic transactions should be seen as a mutual change of rights, often called 'property rights' rather than as an exchange of 'goods' or 'commodities'.¹ When barter takes place, instead of saying that a horse

¹ Cf. Werin (2003), p. 9:

He [Coase]... suggested that the economic system, including its legal scaffolding, should basically be analyzed not in terms of goods, commodities and similar phenomena, but in terms of property rights, although he did not use that expression.

is exchanged for two cows, one says that the ownership of the horse is exchanged for the ownership of the cows. Similarly, the copyright to a literary work may be exchanged for a money claim, and a claim for the performance of a specific job may be exchanged for a claim for payment of a fee.

A close analysis of economic exchange as a change of legal rights or positions, presupposes a systematic account of fundamental legal relations. In the Anglo-American analytical school of jurisprudence, primary objects of analysis were the concepts of obligation or duty and various types of rights. Early pioneers were Bentham and his follower Austin; their work was continued by Salmond and others. In Germany, at the same time, jurists such as Bierling and Brinz made analyses of the same fundamental concepts.² A milestone was passed at the beginning of the previous century, when the American Hohfeld published his famous essays on jural relations.³

Hohfeld's theory is concerned with what he called 'fundamental jural relations', which, according to him, are 'the lowest common denominators of the law'. Hohfeld distinguished the relations right, privilege, power, immunity, and their 'correlatives' duty, no-right, liability, disability. One of Hohfeld's tenets was that each of these relations is a relation between two parties with regard to an action by one of them.

The Swedish logician and philosopher Stig Kanger suggested a reconstruction of Hohfeld's theory in terms of deontic logic and action logic. (See Kanger 1957, 1966.) Kanger realized that standard deontic logic, with only a deontic operator applied to sentences, is not adequate for expressing the Hohfeldian distinctions. The improvement he proposed was to combine a standard impersonal deontic operator 'It shall be the case that' with an action operator 'X sees to it that' and to exploit the possibilities of external and internal negation of sentences where these operators are combined. In Lindahl (1977) the notions of 'liberty space' and 'range of legal action' were introduced (for each of the three systems of types of legal positions constructed in the book).⁴ The constructions were based on combinations of the two operators 'It shall be the case that' and 'X sees to it that' used by Kanger.

² A noteworthy analysis of rights was made as well by the Italian priest Antonio Rosmini (1797-1855) in his work *The Essence of Right*, republished (Rosmini, 1993) as the first volume of Rosmini's *The Philosophy of Right*, first published in 1845.

³ Hohfeld's theory was first published in *Yale Law Journal* (Hohfeld, 1913 and 1917) and has been republished several times. Its latest publication to date is Hohfeld (2001).

⁴ Developments have recently been made by Andrew J.I. Jones and Marek Sergot (Jones & Sergot, 1993, 1996; Sergot, 1999, 2001). In Jones (2004) the theory is applied to problems concerning the flow of information.

The aim of the present paper is to emphasise the relevance of Hohfeld's system to economic analysis and develop Hohfeldian analysis. The development is made in terms of the notions of an agent's 'liberty space' and 'ability space', together making up the agent's *Spielraum*. The paper follows Hohfeld's analysis more closely than Lindahl (1977), insofar as the impersonal deontic notion 'It shall be the case that' is not used; rather, relationships are reconstructed on a Hohfeldian basis of genuine two-party relations.⁵ The two main groups, liberty space and ability space, are further divided into subgroups depending on whether 'factual' or 'legal' results are in view. It is shown how Hohfeld's distinctions can be expressed in terms of *Spielraum*; furthermore, how different species of *Spielraum* versus various other parties can be handled with simple tools from set theory. Complex legal positions, in particular those relating to property rights, are taken into account as well as changes of positions by contract.

Though the *Spielraum* framework is expressed in terms of elementary set theory, the presentation in the paper is largely informal and should be accessible to readers not conversant with formal logic.

2. Hohfeld

2.1. Hohfeld's System of Relations

Hohfeld ordered 'fundamental jural relations' in the following two groups:

1. Right, duty, no-right, privilege.
2. Power, liability, disability, immunity.

The difference between groups 1 and 2 marks a distinction on two dimensions I and II:

- I. The relation X versus Y indicates permissibility, or indicates ability;
- II. The action in view is 'factual', or is an 'act-in-the-law'.

Distinction II indicates the difference between two kinds of acts. Examples of 'acts-in-the law' are acts such as promising, accepting a contract offer, pronouncing a verdict, marrying, divorcing. The concept 'act-in-the-law' refers to acts the result of which is described as legally valid or not (a valid/invalid promise, offer, verdict, marriage, divorce, etc.). 'Factual'

⁵ For an analysis of the difference between standard deontic logic and the logic of Hohfeldian propositions, see Hansson (1970).

actions are those not characterized by valid/invalid result but merely as taking place or not. To this group belong such acts as using, consuming, destroying an object, giving information, writing a book, and so on.

Combining the two dimensions, we get the following four groups A-D:

	Factual actions	Acts-in-the-law
Permissibility	A	B
Ability	C	D

Hohfeld's essay deals explicitly mainly with groups A and D, where right, duty, no-right, privilege relates to group A, and power, liability, disability, immunity relates to group D.⁶ Hohfeld's framework, however, may be understood so that right, duty, no-right, privilege relates as well to group B. An example is:

X has/has not versus Y the privilege of making a contract for selling Y's car (group B);

This statement can be distinguished from:

X has/has not versus Y the power (ability) to make a contract for selling Y's car (group D).⁷

Group C regards causal ability with regard to a 'factual' action. For example, X has/has not versus Y ability to enter on Y's land, in the

⁶ According to Hohfeld, legal power means the ability to bring about "a change in a given legal relation" (Hohfeld, 2001, pp. 21 f.).

⁷ X's power in a certain respect can exceed X's privilege in this respect. For example, Y has given X a written power, without any price limit stated, to sell Y's car; however, Y has orally instructed X that he must not sell the car at a price lower than £10 000.

sense that, as a matter of fact, X can/cannot enter on Y's land (Y might have erected a fence around the land or not, etc.). Group C relations (and their interconnections with the other groups) are relevant from an economic or sociological perspective, though a C-relation is not a 'legal' relation.

An appropriate description of the relationship of right, privilege, power and immunity in a specific case involves a description of X, Y, A and T as follows:

- 1) the bearer X of the right, privilege, power or immunity;
- 2) the counterparty Y of the right, privilege, power or immunity;
- 4) the action A which is the object of the right, privilege, power or immunity;
- 3) the type T of relation among the types right, privilege, power or immunity.

For each of the rows,

1. Right, duty, no-right, privilege,
2. power, liability, disability, immunity.

Hohfeld introduced a scheme of 'opposites' and 'correlatives'. These schemes have some logical flaws.⁸ A reconstruction can be made to the effect that the concepts in each of the rows 1 and 2 are interdefinable. The result is that, in the lists below, the statements in each group of four are equivalent:

Counterparty obligative

X's right (claim) to have an act done

X has a right versus Y that Y performs action A,

Y has a duty versus X to perform action A,

Not: Y has a privilege versus X not to perform action A,

Not: X has a no-right versus Y that Y performs action A.

X's right (claim) to have an act not done

X has a right versus Y that Y does not perform action A,

Y has a duty versus X not to perform action A,

Not: Y has a privilege versus X to perform action A,

Not: X has a no-right versus Y that Y does not perform action A.

⁸ Hohfeld's own scheme of opposites and correlatives is not entirely in agreement with the sense of 'opposite' and 'correlative' that Hohfeld seems to have had in mind. See Kanger & Kanger (1966), pp. 102 f. and Lindahl (1977), p. 27.

*Bearer-permissive**X's privilege (liberty) to act*

X has a privilege versus Y to perform action A,

Y has a no-right versus X that X does not perform action A,

Not: Y has a right versus X that X does not perform action A,

Not: X has a duty versus Y not to perform action A.

X's privilege (liberty) not to act

X has a privilege versus Y not to perform action A,

Y has a no-right versus X that X performs action A,

Not: Y has a right versus X that X performs action A,

Not: X has a duty versus Y to perform action A.

*Bearer-ability**X's power to perform an 'act-in-the-law'*

X has a power versus Y to bring about legal position P,

Y has a liability versus X that X brings about legal position P,

Not: Y has immunity versus X that X does not bring about legal position P,

Not: X has a disability versus Y to bring about legal position P.

*Counterparty disability**X's immunity from having an 'act-in-the-law' done*

X has immunity versus Y with regard to Y's bringing about legal position P,

Y has a disability versus X with regard to Y's bringing about legal position P,

Not: X has a liability versus Y with regard to Y's bringing about legal position P,

Not: Y has a power versus X to bring about legal position P.

It appears that *right* (claim) concerns an action or an omission by the counterparty (counterparty obligative), *privilege* (liberty) concerns an action or an omission by the bearer (bearer permissive), *power* concerns the bearer's action to bring about a legal result (bearer ability), *immunity* concerns the counterparty's action to bring about a legal result (counterparty disability). Some examples are as follows:

Smith has:

a right versus Jones that Jones pays him back 100 Sw.Cr. that Smith has lent him,

a right versus the police that the police does not expose him to mistreatment,
 a privilege versus the Government to express his opinion about the Government,
 a privilege against the police not to tell which party he votes for,
 a power to bring about that Helen and John become married (Smith is a clergyman, Helen and John have applied),
 an immunity against Jones that Jones (the neighbour) by selling Smith's house deprives him of his property.

2.2. Hohfeldian Analysis and Property Rights

Hohfeld's use of the terms 'right' and 'privilege' as fundamental relations, subject to the schemes of correlatives and opposites, has been criticised on the ground that, in juristic language, these terms have other connotations, not intended by Hohfeld.⁹ A statement such as 'Smith has a right to £100 under the contract between Smith and Jones' is often to be understood as referring to a complex legal position called a 'property right'. Some of the components in this position might indeed involve the Hohfeldian relation right (claim), but other components involve Hohfeldian privileges and powers.

Hohfeld's own use of the terms 'right' and 'privilege' should not, however, be confused with what in his opinion is the correct analysis of various traditional legal statements in which these terms occur and where they refer to complex legal positions.¹⁰ The situation is analogous to the Hohfeldian analysis of property rights, for example, 'Smith is the owner of Blackacre'. The Hohfeldian analysis of this statement should be given in terms of a conjunction of statements involving the Hohfeldian relations of right, privilege, power, immunity, and, perhaps, duties and liabilities as well. Thus Hohfeld states that the owner's 'legal interest' consists of 'rights, powers, immunities, etc.'¹¹ Many of these Hohfeldian components of the complex position are 'multital' in that they refer to the bearer's relation to a number of other people, sometimes all people, the bearer excluded. Hohfeld's analysis on this point was anticipated by Bentham in his well-known passage on loaves of bread in a bakery:

⁹ See, for example, Honoré (1960, p. 456):

'What Hohfeld does not notice or does not mind is that these axioms render impossible many of the uses of a 'right' to which laymen and lawyers are accustomed.'

¹⁰ Cf. Lindahl (1977, pp. 34 ff).

¹¹ Hohfeld (2001, p. 75).

In a baker's shop let there be two loaves, one of which you have just bought of him, and one other which being as yet unsold remains the baker's. In a law which gives or secures to you the property of that loaf which is yours the parties bound are all mankind the baker himself included, you excepted: [...] the party favoured, you and you alone. In a law which gives or secures to the baker the property of the loaf which remains his, the parties bound are all mankind, you included, the baker excepted: [...] the party favoured the baker and he alone.¹²

In Hohfeld's terms, this situation would be expressed in terms of a 'privilege' for X (the purchaser and the baker, respectively) versus all others, and a 'right' (claim) for X against all others.

As regards the legal concept of property, historically there used to be a difference between, on one hand, the civil law countries, strongly influenced by Roman law, and the Anglo-Saxon countries with the tradition of common law and equity. The Roman law concept of *dominium* was restricted to tangible things (in German *Sachen*), and this idea strongly influenced the concept of *Eigentum* as *Sachenrecht* in German Law and similar legal systems. In the Anglo-Saxon countries, the concept of property was much wider, including as well 'choses in action' such as debts, patents, copyrights, shares in a company.¹³

In modern legal systems, the difference between 'property' in civil law systems and common law systems has largely disappeared. To exemplify, as regards Swedish law, the authoritative work is Henrik Hessler's *Allmän sakrätt*. Here the author states:

¹² The passage is from Bentham's *Of Laws in General*, (Bentham, 1970, p. 60).

¹³ From the point of view of historical legal sociology, an interesting emphasis on the old Romanistic tradition is found in Karl Renner's well-known work *Die Rechtsinstitute des Privatrechts und ihre soziale Funktion* (Renner, 1929). A peasant's plough is a tangible object and so is a share-holders share-certificate. Renner emphasises that the social function of owning the tangible object is very different in two cases like these. While, according to Renner, the legal concept of property and owning is the same in the two cases (*Eigentum* as *Sachenrecht*, based on the Roman law notion of *dominium*), the difference in social function is due to 'complementary institutions' annexed to ownership of different kinds of objects. Thus, to the ownership of the piece of paper constituting a share certificate, is annexed a number of rights indicated in the law of associations which creates institutions (companies of various kinds) that are 'complementary' to the institution of property as *Eigentum*. Since the Anglo-Saxon concept of property is quite different, Renner's exposition (as noted by Kahn-Freund in his introduction to the English translation, Renner, 1949, of Renner's work), becomes unintelligible to Anglo-Saxon jurists if they do not bear in mind that Renner starts from the Romanistic concept of *Eigentum* as *dominium*.

Thus ownership [*äganderätt*] is used here in an extensive sense and not only for referring to that type of rights which has tangible things as its objects. In those cases where there is special need to indicate the last-mentioned sense of the term, the expression ownership in restricted sense will be used, if this meaning is not otherwise clear from the context.¹⁴

...‘ownership’ is here understood in extensive sense so that it comprises as well intellectual rights and as well other rights of different kinds regarded as assets. Thus ownership to the car or to the real estate is included as well as ownership to a share or to a claim.¹⁵

It appears that in modern law ‘property’ and ‘ownership’ refer to very heterogeneous bundles of Hohfeldian relations, depending on which objects are in view. In other words, there is no single bundle of such component relations that is common to all varieties and that can be called the legal concept of property or ownership.¹⁶ This fact emphasises the need for breaking down various bundles of legal relations, called property rights or ownership, into more basic components. For this purpose, Hohfeldian analysis is a useful tool.

Economists dealing with ‘property rights’ have paid scant attention to Hohfeld. Hohfeld’s work is sometimes referred to with respect, but Hohfeld’s system is usually considered too fine-grained to be useful for economic analyses.¹⁷ On this point, however, a distinction may be made between two fields of research. The so-called ‘property rights school’, studies the role of property rights in promoting economic efficiency. Among the central characteristics of property rights for promoting efficiency are:

¹⁴ Hessler (1973), p. 36. My translation.

¹⁵ Hessler (1973), p. 113. My translation.

¹⁶ A. M. Honoré (Honoré, 1961) has made a list of the following criteria of ownership: 1. the right to exclude others; 2. the right to use for personal use and enjoyment; 3. the right to decide on use; 4. the right to income; 5. the right to capital, which includes the power to consume or destroy or exchange; 6. transmissibility, i.e. the power to alienate or bequeath the object; 7. immunity from expropriation by private actors; 8. immunity to changes in time duration; 9. the prohibition of harmful use; 10. liability to execution for repayment of a debt; 11. residuary character (e.g. rules for what to do when an ownership lapses). According to Honoré, no-one of these is a necessary requirement but at least one of the first five criteria must be fulfilled in any variety of ownership.

¹⁷ For example, see Werin (2003), p. 10:

[Hohfeld] ... has provided much general inspiration for the importance attached here to property rights as “elementary particles”, and “rights of transfer” as further basic elements. In itself, his scheme is somewhat too ambitious for our purposes here, and will not be followed.

- (i) Universality: all scarce resources should be owned by someone.
- (ii) Exclusivity: property rights should be exclusive rights.
- (iii) Transferability: this is necessary to ensure that resources will be transferred from low-valued uses to high-valued uses.¹⁸

As regards transferability, of great importance is the concept of transaction costs, introduced by Ronald Coase.¹⁹ In F. H. Stephen's words:

Transferability is a necessary condition for attaining efficiency but it is not a sufficient condition: it does not guarantee efficiency. First, transfer must be relatively easy. If the transaction costs are high relative to the value of the asset, transferability in principle may not be worth much in practice. Secondly, transferability would not be worth much if there were not also a right of exclusivity. The property right must guarantee the exclusive use of the land otherwise someone else might be able to gain the benefits of using the land without making the expenditures.²⁰

For the kind of study referred to now, economists will choose to disregard differences between various kinds of 'property rights', not considered essential for the main thrust of the efficiency tenet. Economists studying efficiency, however, often describe the legal concept of property rights in an over-simplified way. Thus, for example, as regards the legal notion, Cooter and Ulen say:

Two facts about the bundle of legal rights constituting ownership are fundamental to our later understanding of property. First, the owner is free to exercise the rights over his or her property, by which we mean that no law forbids or requires the owner to exercise those rights. ... Second, others are forbidden to interfere with the owner's exercise of his rights. ... This protection is needed against two types of interlopers - private persons and the government.

The legal conception of property is, then, that of a bundle of rights over resources that the owner is free to exercise and whose exercise is protected from interference by others. Thus, property creates a zone of privacy in which owners can exercise their will over things

¹⁸ Stephen (1988), p. 14.

¹⁹ Coase (1960).

²⁰ Stephen (1988), p. 14.

without being answerable to others, These facts are sometimes summarized by saying that property gives owners liberty over things.²¹

The components of what Cooter and Ulen describe as ‘the legal conception of property’ are not conceptually required for ‘ownership’ or ‘property’ in actual legal systems. The idealization performed is motivated with a view to emphasising the perspective of efficiency and synergetic effects. The value of a bundle of powers, claims, immunities and privileges depends in part on the synergetic effect of having them jointly.²² The idealized concept of property rights is not tied specifically to one or the other of national legal systems; the claim made by efficiency analysis is more universal. The idealized concept is relevant for the justification of rules in different national systems, i.e., for clarifying the “rationale” of different legal institutions.²³

An economic field of research, partly different from the efficiency analysis performed by the property rights school, is the detailed study of, (1) property rights in actual legal systems, and (2) economic exchange from the point of view of ‘menus’ and opportunity costs for potential contract parties. For this latter field of research, a fine-grained analysis of the details of property rights is highly relevant, and a conceptual scheme like Hohfeld’s seems to be a useful tool. Coase’s fundamental ideas can be developed along these lines as well, as a theory of choice and contracting in practice, not merely as a theory of efficient property rights in the sense of the property rights school.

3. *Spielraum*

3.1. *Introduction*

Lars Werin has suggested that the decision possibilities of individuals can be seen as ‘elementary particles’ of society:

²¹ Cooter & Ulen (1999), pp. 74 f.

²² To exemplify the idea of synergy: For the willingness of an owner to invest in and ameliorate his property, it is essential that his privilege to use it goes together with an immunity against being dispossessed without compensation. The value of having the pair ‘privilege to use, immunity against dispossession’ in this case exceeds the sum of the values of having each one of the components ‘privilege to use’ and ‘immunity against dispossession’. Cf. G. E. Moore’s idea, in *Principia Ethica*, of an ‘organic unity’ or ‘organic whole’. Characteristic of an organic unity, according to Moore, is ‘that the value of such a whole bears no regular proportion to the sum of the values of its parts.’ (Moore, 1971, p. 27. See as well Lindahl and Odelstad, 2004, pp. 98 ff.)

²³ Cf. Lindahl (2004), pp. 199 f.

We can in fact discern a kind of structural component of almost all interaction among people, regardless of its form. Whether it is a question of division of tasks or of protection against harmful interferences, what matters are the spheres of decision possibilities open to each single individual. The delineation of such spheres determines the division of tasks and activities among us, as well as the degree of our privacy and protection from injury and annoyance. The spheres may overlap: several individuals share decision power, and they change over time, not least because they are switched by exchange. Hence decision possibilities are a kind of structural units. They may be seen as elementary particles of society.²⁴

The expression 'spheres of decision possibilities' connects to the notion of 'decision space' (*Entscheidungsraum*), well-known in various formal theories of human interaction such as decision theory, game theory and bargaining theory.²⁵ It will be suggested that Hohfeld's system lends itself well to a reformulation in terms of 'decision possibilities' understood as (what will be called) *liberty spaces* and *ability spaces*. This reformulation is the theme of the present main section.²⁶

Hohfeldian privileges are bearer-permissives and Hohfeldian rights are counterparty obligatives. The more privileges X has versus Y, the greater is the space of X's legal liberties versus Y. Similarly, the more rights X has versus Y, the smaller is the space of Y's liberties versus X. Analogously, Hohfeldian powers and immunities can be reformulated in terms of ability spaces (with regard to achieving valid legal states of affairs). Thus, the more Hohfeldian powers X has versus Y, the greater is X's ability space versus Y (as regards legal states of affairs), and the more immunities X has versus Y the smaller is Y's ability space versus X (as regards legal states of affairs).

Thus it appears that Hohfeld's theory of fundamental jural relations without any loss can be reformulated in terms of the liberty and ability spaces. Such a reformulation has certain advantages. A 'space' (liberty space or ability space) can be regarded as a *set*, amenable to treatment in set-theoretical terms. As is well-known, set theory is a basic tool of log-

²⁴ Werin (2003), pp. 3f.

²⁵ For a suggestion concerning the exercise and waiving of rights as moves in a game, see Gärdenfors (1981), dealing with social choice.

²⁶ The notion of 'liberty space' was introduced in Lindahl (1977), pp. 107 ff. As suggested in the introduction of the present paper, however, the logical framework used now is not the same as the one used in that work.

ical regimentation. Treating ‘spaces’ as sets gives recourse to the operations of inclusion, intersection, union and complement between them.²⁷ This feature is important for analysing the options, i.e., the items on the ‘menu’ of various contractual arrangements. When X and Y make a contract, the result is a reshuffling of privileges, claims, powers and immunities between them; usually (if the contract is onerous), in some respects, X gets more of these advantages and Y less, while, in other respects, X gets less and Y more. This result can be described in terms of how the liberty spaces and ability spaces of X and Y, respectively, are enlarged in some respects and diminished in other respects.

When set theory is at hand, the idea of ‘enlarging’ and ‘diminishing’ can be described by set-theoretical inclusion between sets. If S is a state of affairs, to say that X’s liberty space with respect to S is enlarged means that X is moved from a liberty space A to a liberty space B, where B is ‘larger’ than A in the sense that A is a proper subset of B. Conversely, if X’s liberty space with respect to S is diminished this means that X is moved from a liberty space A to a liberty space B such that B is a proper subset of A. And, analogously, as regards ability spaces. An agent’s liberty space and ability space together constitute the agent’s *Spielraum*.

The present main section will be devoted to developing the idea of *Spielraum* understood as the collection of an agent’s liberty spaces and ability spaces. As will appear, such a development can be done in a way that is mainly informal. What is needed, apart from very elementary set theory, is only some logical regimentation of actions. To this purpose, an action concept will be introduced, namely the concept ‘X sees to it that S’. Using this concept, three basic kinds of action will now be introduced.

²⁷ To serve readers not familiar with set theory, here are a few elementary notions to be used in what follows:

Pointed brackets

{a,b,c,...} is the set having the members a,b,c,...

Intersection

The *intersection* of two sets A and B is the set of all objects that belong both to A and to B.

Subset (inclusion)

Set A is a *subset* of set B (A is *included* in B) if every member of A is also a member of B.

Proper subset

Set A is a *proper subset* of set B if A is a subset of B and $A \neq B$.

3.2. *Basic Kinds of Action*

The action concept 'sees to it that' is used in expressions like the following:

1. Jones sees to it that his nephew inherits his property,
2. Jones does not see to it that his nephew inherits his property,
3. Jones sees to it that his nephew does not inherit his property,
4. Jones does not see to it that his nephew does not inherit his property.²⁸

In these sentences, Jones is the agent and the clause that follows 'that' refers to a state of affairs. Their general form is:

- for 1: X sees to it that S,
 for 2: Not: X sees to it that S,
 for 3: X sees to it that not S,
 for 4: Not: X sees to it that not S.²⁹

Consider the following three kinds of behaviour, abbreviated 'Pro', 'Pass' and 'Counter' for an agent X with respect to a state of affairs S:³⁰

Pro-action

Pro: X sees to it that S;

Passivity

Pass: X neither sees to it that S nor sees to it that not S.

Counter-action

Counter: X sees to it that not S.

²⁸ As suggested in Kanger (1972), section 6, the notion of 'sees to it that' can provide a criterion for distinguishing genuine action, like 'X opens the window' from mere 'pseudo-action' like 'X sleeps'. 'X opens the window' is true if and only if X sees to it that X opens the window. On the other hand it does not hold that 'X sleeps' is true if and only if X sees to it that X sleeps.

²⁹ Other notions that, in the literature, have been used instead of 'sees to it that' are 'causes that' and 'brings about that'. Cf. Kanger (1957) for 'causes' and Pörn (1970) for 'brings about that'. The notion 'sees to it that' is used in Pörn (1970) along with 'brings it about that', as well as in Kanger's later writings, in Lindahl (1977), and in many later works by various authors. Though it has a causal component, 'sees to it that' nevertheless is more appropriate than 'causes' as a concept for action; in comparison with 'brings about that', the notion of 'sees to it that' has the advantage of covering not only a change (as in the production of S or of not S) but as well the 'non-change' case of maintaining the presence or the absence of S.

³⁰ See Lindahl (1977), pp. 85 f.

Pro-action can be either producing or maintaining S, counter-action either producing or maintaining the absence of S, passivity is doing neither.³¹

Each of Pro, Pass, and Counter implies the negation of each of the others, and the disjunction of all three is a tautology. Pro, Pass, and Counter therefore constitute a partition of logical alternatives into three mutually incompatible and jointly exhaustive alternatives. This means that, with respect to S, X cannot exhibit more than one of these kinds of behaviour and that, necessarily, X exhibits one of them.

3.3. *Permission and Liberty Space*

In the present section, the notion of liberty space as permitted behaviour is developed along Hohfeldian lines as a relation of permissibility for X versus Y with respect to a state of affairs. We introduce three basic types of legal liberty-relations for X versus Y with respect to S:³²

Pro-action liberty

X has pro-action liberty versus Y with respect to S if and only if:
X has versus Y permission to see to it that S (i.e. to behaviour Pro).

Passivity liberty

X has passivity liberty versus Y with respect to S if and only if:
X has versus Y permission versus Y to be passive about S (i.e. to behaviour Pass).

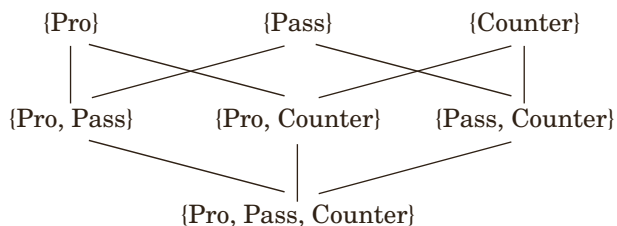
Counter-action liberty

X has versus Y counter-action liberty with respect to S if and only if:
X has versus Y permission to see to it that not S (i.e. to behaviour Counter).

There are seven types of liberty spaces for X versus Y with respect to S. These are depicted in the following tree where each set is a set of behaviour types potentially permitted to X versus Y with respect to S.

³¹ An agent's 'passivity' in the sense intended here means that the agent does not successfully see to it either that S or that not S. It does not, however, imply that the agent is passive in the strict sense of doing nothing at all with respect to S. Thus passivity is compatible with, for example, the agent's supporting or advocating S, provided that these actions are not successful. Technically, the feature now explained is expressed by 'passivity' being defined in terms of 'sees to it', and by 'sees to it' being understood as a success operator. Cf. Lindahl (1977), pp. 68 ff and 224 f.

³² In Lindahl (1977, p. 106), three basic types of one-agent liberties for an agent X with respect to a state of affairs S are defined in terms of the impersonal deontic operator May for 'it may be the case that' and Do for 'sees to it that'.



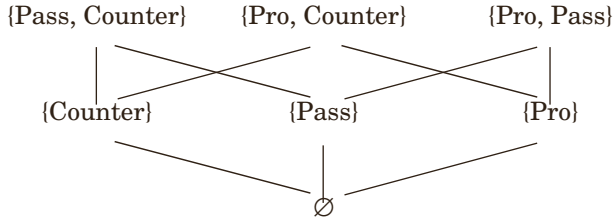
Liberty spaces for X versus Y with respect to S

We note that, since Pro, Pass and Counter jointly exhaust the alternatives for X's behaviour, there is no empty set at the top of the tree, i.e. there is no alternative where none of Pro, Pass Counter is permitted. In the scheme, S can be a 'factual' state of affairs, for example, S is 'O is destroyed', or S can be a legal state of affairs, for example, 'the ownership of O is transferred to Y'.

The liberty space of X versus Y with respect to S is the set of those behaviour types that are permitted to X versus Y with respect to S. If X versus Y has all the three liberties Pro, Pass, and Counter with respect to S, then X's liberty space is maximal versus Y with respect to S; X has versus Y the options of pro-action, of passivity, and of counter-action. On the other hand, if X versus Y has only one single of Pro, Pass, and Counter, then X's liberty space is minimal; X has (versus Y) only one option, i.e. that single option is obligatory. Thus if Pro is the only behaviour type permitted to X versus Y with respect to S, X has a duty versus Y to see to it that S; if Pass is the only permitted type, X has a duty to be passive about S; finally, if Counter is the only permitted type, X has a duty versus Y to see to it that not S.³³

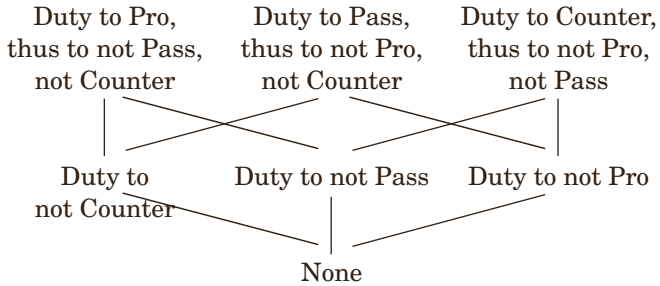
Corresponding to the liberty spaces for X versus Y shown in the preceding scheme are the potential 'impermissibility spaces' for X versus Y, in the following scheme:

³³ According to standard interpretations of permission and obligation, a course of action A is obligatory (for X versus Y) if and only if not-A is not permitted (for X versus Y).



Impermissibility spaces for X in the relation X versus Y with respect to S.

If behaviour B is impermissible for X, this means that X has a duty to not-A. Therefore the preceding scheme is equivalent to the following one, formulated in terms of X's duties versus Y with regard to S:³⁴



X's duties versus Y with respect to S, corresponding to impermissibility

Hohfeld's relations right, duty, no-right, privilege can obviously be expressed in terms of liberty spaces. If behaviour type A_1 (among Pro, Pass, Counter) belongs to the liberty space for X versus Y with respect to S, then, in Hohfeld's terms, X has a privilege to A_1 , and Y has a Hohfeldian no-right to the other two behaviour types A_2 and A_3 . And, if Y has

³⁴ For pedagogical reasons, the scheme is not constructed as showing set inclusion. It can, however, easily be converted to such a scheme.

a duty to A_i , then X has a Hohfeldian right (claim) to A_i , and if Y has a duty to not A_i , then X has a right (claim) to not A_i .

3.4. Ability Space

There are many things an agent has legal liberty to ('may') do while, in fact, he is unable to ('cannot') do it. Conversely, there are things an individual is able to ('can') do, even without great risk of incurring a sanction, while, legally, he has not the liberty to ('may not') do it.

In a restricted way, ability is included in Hohfeld's theory as a jur- al relation, i.e. by the concepts of power, disability, liability, and immu- nity. As indicated above, Hohfeld's notions however, only apply when the action involved concerns a legal result, such as a promise, a verdict, etc. Since ability to achieve a 'factual' result is not a legal relation, it has no place in Hohfeld's theory.

Economists often distinguish between the legal and the econom- ic concept of 'property rights' and emphasise that the economic concept of property rights is wider than the legal one.³⁵ Here this aspect will be taken into account by adding a general notion of ability to that of legal liberty. This general notion will include both ability to achieve a legal result and ability to achieve a 'factual' result.³⁶

If 'permission' is substituted by 'ability', we get the following three types of ability:

Pro-action ability

X has pro-action ability versus Y with respect to S if and only if:
X has versus Y ability to see to it that S.

³⁵See, for example, Stephen (1988), p. 11:

...over the last thirty years or so a number of economists have become concerned with what they have called property rights. Essentially these boil down to the rights of an individual, but the economist's notion of property is much broader than that of the lawyer. It includes both tort and contract law, common and statutory law, civil and criminal law, vested and non-vested rights and civil rights. It includes informal practices and traditions embedded in culture as well as formal legal institutions.

³⁶It might be objected that the concept 'legal power' or 'legal competence' is differ- ent from the concept 'factual ability' and that a differentiation only by distinguishing legal results from 'factual' results is insufficient. In what follows I will ignore the con- troversies existing regarding this matter. Cf. Lindahl (1977), pp. 193-211, on the spe- cific juristic sense of 'rechtliches Können', with reference to the early exposition in Brinz (1873). What will be said subsequently about ability is not dependent on any special assumptions about the meaning of 'ability'. It is presupposed only that some general principles hold for the concept.

Passivity ability

X has passivity ability versus Y with respect to S if and only if:
 X has versus Y ability to be passive about S.

Counter-action ability

X has versus Y counter-action ability with respect to S if and only if:
 X has versus Y ability to see to it that not S.

With respect to these types, once more a distinction can be made from the point of view of whether S is a 'factual' state of affairs or a 'legal' state of affairs. If S is factual, the types refer to factual influence, for example:

X has versus Y ability to see to it (bring about) that information is communicated to Y on the results of the test of the medicine.
 X has versus Y ability see to it (bring about) that Y does not intrude on the premises of the firm.

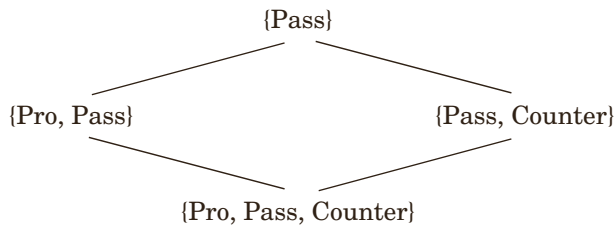
If S is a legal state of affairs the types refer to legal ability:

X has versus Y, his nephew, ability to see to it (bring about) that upon his death his property goes to his nephew.
 X has versus Y, his nephew, ability to see to it (bring about) that, upon his death, his property does not go to his nephew (but to the Association for protection of cats).

So, pro-action ability, passivity ability, counter-action ability can be interpreted either in terms of factual influence or ability to change (or maintain) legal positions.

It can be argued that there is a difference between the logical principles for the notion of pro-, pass-, counter- liberty, which is deontic, permissive, and, on the other hand, the principles for pro-, pass-, counter- ability, which is 'capacitive'. As regards permission (liberty) there are many important situations where passivity is no permitted option, in particular situations where X's liberty space is {Pro}, or {Counter}. For example, if X has made a contract that he shall pay 100 dollars to Y, passivity is no permitted option: X's liberty space is limited to pro-action. On the other hand, if ability with regard to S is in view, it can be argued that passivity is always among the options. If X is confronted with the robber's 'your money or your life', in one sense of ability ('can'), X has the option of being passive. Obviously, in this case, passivity is costly and irrational. Nevertheless, in a strict sense, passivity is among the options that X has.³⁷ For this concept, the ordering of ability spaces is reduced to the one shown in the following picture:

³⁷ This conception of what an agent 'can do' is advocated in Kanger (1977).



Ability spaces for X versus Y with respect to S

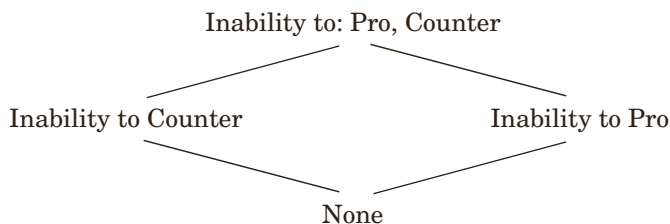
In this tree, there is no ability space with Pro as only member and no ability space with Counter as only member.

The notion of ability or ‘can’ now referred to might be contested. In colloquial language we often say that an agent ‘must’ do so-and-so, meaning that abstention would be costly. With this ‘non-strict’ interpretation, if not-Pro is costly to X, then Pro is a ‘must’ for X in a sense analogous to the deontic notion ‘obligatory’. To this view, an advocate of the ‘strict’ notion might reply that consideration of costs can be dealt with in other parts of a theory and that (except for rhetorical purposes) it is not suitable to include such considerations in the very notion of ability.

In the present paper, the controversy referred to will not be further dealt with. For the general notion of ‘ability space’ one might choose either the reduced tree shown above (the ‘strict’ interpretation of ability) or the full tree analogous to that for liberty spaces (the ‘non-strict’ interpretation).

We note that, in the scheme just presented, the ability space (uppermost in the middle) that has Pass as its only member indicates that X has (versus Y) no pro-action ability or counter-action ability. If S is a factual state of affairs, this means that Y has a correlative two-sided ‘security’; if S is a legal state of affairs, Y’s correlative position is a two-sided ‘immunity’.³⁸ This correlativity becomes conspicuous when the preceding scheme is converted into the following scheme of X’s inabilities:

³⁸ The term ‘security’ is introduced in Kanger (1977). ‘Two-sided’ above is intended to mean that Y’s security or immunity holds both as regards X’s pro-action and X’s counter-action. Y’s security/immunity is one-sided if X’s ability space is {Pro, Pass} or {Pass, Counter}.



X's inability versus Y with respect to S

The reason why ability to achieve a factual result is included in the presentation here is that ability to do something is relevant to the worth of having the legal liberty to do it, and conversely. Having the legal liberty to leave one's country is not much worth to an individual who lacks the means of doing so; or, to take another example, actually having information and thus having the ability to communicate it, considerably enhances the worth of the legal liberty of communicating the information. Conversely, having the legal liberty to do something usually much enhances the worth of having the ability to do it. This is so, since doing something without legal liberty mostly is associated with costs in terms of legal sanctions (damages and punishment). Therefore, in the economic or sociological analysis of an individual's position, for example, as an owner, or citizen, or human being, the account will be deficient if this ability aspect is not taken into account.

Obviously, however, the logical development of *Spielraum* theory will be much more complex if the analysis is to encompass both liberty spaces and ability spaces. Since the scope of the present essay is restricted, in the following subsections the account will be limited to liberty spaces.

3.5. *Combinations of Liberty Spaces*

3.5.1. *Two Kinds of Combinations*

As stated in the foregoing, a Hohfeldian fundamental jural relation can be reconstructed as a relation X versus Y with respect to a state of affairs S. This 'two-parties' construction obviously permits distinguishing, with respect to one and the same state of affair S, a number of dif-

ferent liberty spaces X versus Y, Y versus X, X versus Z, Z versus X, Z versus Y, and so on. For an accurate description of what holds for S (for example, where S relates to the use of a particular piece of land in Sweden), the combination of several such liberty spaces is relevant. Combinations of this kind, however, are often relevant as well for an accurate description of the legal position of a particular agent X, with respect to S. This is particularly conspicuous, if X is the owner of an object O, and S is a state of affairs (use, consumption, transfer, etc.) relating to O. In what follows, attention will be paid to two kinds of combinations. The first of these concerns combinations of an agent's liberty spaces, with respect to one and the same state of affairs S, versus different counterparties Y, Z, ... The second kind of combinations concerns combinations (once more with respect to one and the same state of affairs S) of the liberty spaces of different counterparties Y, Z, ... versus an agent X.

3.5.2. *An Agent's Liberty Spaces Versus Different Counterparties*

We should not assume that if something is prescribed by the law, then it is always the case that someone has a right versus someone as regards the fulfilment of what is prescribed. There are many prescriptions (administrative regulations, traffic prescriptions etc.) which do not imply rights for particular agents. In such cases, we can speak of the liberty space *simpliciter* of an agent X with regard to a state of affairs S, without indicating any counterparty.³⁹

For some fields of the law, in particular private law, however, it is important to distinguish the liberty space of an agent X versus different counterparties.⁴⁰ Since Hohfeld is mainly concerned with these fields, it is an essential feature of his theory that such distinctions can be made. In Hohfeld's theory, from the fact that X has a certain privilege versus Y with respect to an action, it is not possible to draw any conclusion about which privileges X has versus another party Z in the same matter. His 'salad example' is intended to illustrate this:

³⁹ Cf. Lindahl (1994) p. 909, (Lindahl, 2001, p. 168). The contrary assumption would lead to an inflation of rights where the group of right-holders is very diffuse. In these cases the impersonal deontic notions 'shall' and 'may' can appropriately be used. See, for example, the example concerning regulations of parking in a car park in Sergot (2001).

⁴⁰ This 'two-parties' relational aspect is not confined to private law. Thus, for example, in Chapter 2 of the Swedish Constitutional Code, there is an enumeration of rights and liberties versus 'the public authorities' (*det allmänna*). These rights and liberties do not necessarily hold versus all private parties (there can be a possibility of restricting some of them by private contract).

Suppose that X, being already the legal owner of the salad, contracts with Y that he (X) will never eat this particular food. With A, B, C, D and others no such contract has been made. One of the relations now existing between X and Y is, as a consequence, fundamentally different from the relation between X and A. As regards Y, X has no privilege of eating the salad; but as regards either A or any of the others, X has such a privilege.⁴¹

Expressed in terms of *Spielraum*, X's liberty space versus Y, as regards eating the salad, is {Counter}, whereas his liberty space versus each of A, B, C, D is {Pro, Pass, Counter}.

It is of interest to consider the cases where there is a 'conflict' between X's liberty space versus Y and his liberty space versus another agent Z. In the salad example there is no conflict since Counter is an element of all the liberty spaces; X violates no obligation if he sees to it that he does not eat the salad. In other words, Counter is an element of the intersection of X's liberty spaces versus each of Y, A, B, C, D.

The observation made can be generalized into a conceptual principle stating that, with respect to S, there is a conflict between X's liberty spaces versus other individuals if and only if the intersection of X's liberty spaces versus these individuals is empty.

Conflicts in the sense indicated often occur and there is nothing in Hohfeld's system or in the framework of liberty spaces that excludes them.⁴² If X sells the same object O first to Y and then to Z, and S is the state of affairs that O is delivered to Y, we get the result:

X's liberty space versus Y, with respect to S, due to the first contract, is {Pro},
 X's liberty space versus Z with respect to S, due to the second contract, is {Counter}.

The intersection between the two spaces is empty and there is a case of genuinely conflicting duties towards different people.

In a case like the exemplified, one of the duties will often be said to 'override' the other. This, however, does not mean that the overridden

⁴¹ Hohfeld (2001), p.16. Cf. Lindahl (1977), pp. 31 f.

⁴² This is an important difference in comparison with such frameworks where an impersonal deontic operator 'shall' or 'ought' is used in accordance with so-called standard deontic logic. (Cf. the Introduction.) In such systems 'it shall (ought to) be the case that S' and 'it shall (ought to) be the case that not S' are inconsistent.

duty is left without consideration. Usually, the party to whom X violates his contractual duty obtains a claim for compensation.⁴³

A special combination of an agent's liberty spaces versus different counterparties is related to a version of 'exclusivity' of an agent's claim (another version of exclusivity will be mentioned below). Suppose Y has liberty space {Pro} (or {Counter} or {Pass}) versus X with respect to S, whereas Y has {Pro, Pass, Counter} versus every other agent Z with respect to S. Then X is distinguished from the other of Y's counterparties by having, versus Y, a claim that is exclusive in the sense that none of the other counterparties has such a claim. This is the case, for example if Y has promised to deliver object O to X (and not promised similarly to anyone else). Then Y has liberty space {Pro} versus X with respect to S and {Pro, Pass, Counter} versus other parties. It is only X who has a claim versus Y with respect to S. Other parties have no such claim; Y's choice of behaviour is none of their business. Another example is that O is a house owned by X and S is the state of affairs that Y enters into X's house without permission. Versus X, the owner, the liberty space of Y with respect to S is restricted to {Counter}; in contrast, the liberty spaces of Y versus other agents Z, W,... are unrestricted: it is none of Z's business if Y enters X's house, and so on.

3.5.3. *The Liberty Spaces of Different Agents*

The preceding subsection briefly dealt with the liberty of one agent versus different other agents. This issue can be kept apart from the issue of different agents' liberty spaces versus one agent X. Two particular issues will be briefly considered: (i) Other agents' liberties to interfere with the liberties of an agent X; (ii) the notion of exclusivity of an agent's X's liberties.

(i) *Interference.* Hohfeld is cautious to point out that from X's privilege to perform an action nothing can be inferred concerning X's right not to be interfered with. The 'salad example' is used once more by Hohfeld to illustrate this:

A, B, C and D, being the owners of the salad, might say to X: 'Eat the salad, if you can; you have our license to do so, but we don't agree not to interfere with you.' In such a case the privileges exist, so that if X succeeds in eating the salad, he has violated no rights of any

⁴³ Cf. as well the example in Simmonds (1986), pp. 18 f.

of the parties. But it is equally clear that if A had succeeded in holding so fast to the dish that X couldn't eat the contents, no right of X would have been violated.⁴⁴

If S is the state of affairs that X eats the salad, then X has liberty space {Pro, Pass, Counter} versus each of A, B, C, D; each of A, B, C, D has liberty space {Pass, Counter} versus X with respect to S. The case is similar to well-known situations of competition in business life. If X and Y are competing firms and S is the state of affairs that X takes market shares from Y, then Pro is a member of X's liberty space {Pro, Pass, Counter} versus Y with respect to S and Counter is an element of Y's liberty space {Pro, Pass, Counter} versus X.

In the examples of interference now discussed, the various liberty spaces have elements in common (their intersection is not empty). Even in cases of empty intersection there need not, however, be conflict. A non-conflict example is:

Y's liberty space versus X with respect to S is {Pro},
Z's liberty space versus X with respect to S is {Pass}.

The two liberty spaces have no member in common. The combination, however, only indicates that Y's duty versus X is an issue that Z should not interfere in.⁴⁵

(ii) *Exclusivity*. Suppose that X is the owner of an object O and that S is the state of affairs that O is used for consumption. Then, usually, X has {Pro, Pass, Counter} versus every other agent Y with respect to S, and X's liberty space is exclusive in the sense that every other agent Y has liberty space {Pass} versus X with respect to S. This is the kind of exclusivity usually emphasised in connection with property rights, jointly with the analogous exclusive legal ability of the owner where S is a legal state of affairs (regarding transfer, mortgage, etc.).

⁴⁴ Hohfeld (2001), p. 16.

⁴⁵ Suppose that, for one and the same state of affairs S,
Y's liberty space versus X with respect to S is {Pro},
Z's liberty space versus W with respect to S is {Counter}.

Then we have a conflict situation since X and W have incompatible claims: Pro and Counter cannot both be realized. If X = W, the solution should be that X waives one of the claims.

3.5.4. *The Legal Status of an Object*

The discussion in preceding subsections has been ‘agent-centered’ in the sense that its focus has been on agents rather than on particular *objects* of liberties and claims. A different focus is to describe what liberty spaces various agents have with respect to states of affairs concerning a particular object, for example, a piece of land, literary work, invention, etc. Such description is obviously relevant to the question of what price can be obtained for the item in a bargain.

If *O* is the object in view, a first step in an object-centered description is to construct a list of relevant states of affairs S_1, S_2, S_3, \dots , concerning *O*. The next step is to construct a list X_1, X_2, X_3, \dots , of agents to be considered. The final step is to construct the liberty space of each X_i versus each X_j with respect to each S_k .

If *O* is a particular existing object, and the number of states of affairs S_1, S_2, S_3, \dots is kept down to essentials, and the agents are lumped together in groups having the same liberty space, the number of liberty spaces constructed need not be overwhelmingly great. This is even more so since, for different kinds of objects (land, literary works, inventions, etc) there are usually legal rules restraining what liberty spaces can occur.⁴⁶

The number of liberty spaces to indicate, however, greatly increases if the aim is not only to describe actual legal relations but potential ones as well. Such potential spaces need to be considered if two parties consider making a contract to change existing relations. In the next subsection, this matter will be briefly discussed.

3.6. *Liberty Spaces and Contract*

In commercial life, one party *X* cannot usually, by his own action, reduce the legal liberty spaces of potential contract partners versus himself. What *X* can do is in the first place to:

- (1) reduce his own liberty spaces and ability spaces versus other parties,

⁴⁶ In Part II of Kanger & Kanger (1966), dealing with government positions and parliamentarism, so-called ‘feasibility rules’ are used for eliminating possibilities which, though logically possible, need not be considered in practice. Using these rules, the astronomical number of logically possible government position structures is reduced to a reasonable number. The method of feasibility rules is used as well in Chapters 8 and 9 of Lindahl (1977).

- (2) enlarge the liberty spaces and ability spaces of other parties versus himself.

An enlargement consists in a movement downwards in the tree of liberty spaces shown above (section 3.3); conversely, a reduction consists in a movement upwards, ultimately to one of the three liberty spaces at the top of the tree.

Other formulations of (1) and (2), respectively are:

- (1*) the number of claims and immunities of other parties versus X,
 (2*) reducing the number of X's claims and immunities versus other parties.

A simple example of (1), (1*) is that by promising Y to see to it that a certain state of affairs S obtains, X reduces his own liberty space versus Y, with respect to S from {Pro, Pass, Counter} to {Pro}. Conversely, a simple example of (2), (2*) is X' waiving a claim. If Y's liberty space versus X is {Pro}, and X waives the claim, then Y's liberty space is enlarged, from {Pro} at least to {Pro, Pass}.

In cases concerning transfer of property rights, (1) and (2) can be supplemented by the transferor X's ability to:

- (3) reduce the liberty spaces and ability spaces of third parties Z, W,... versus the transferee Y,
 (4) enlarge the liberty spaces and ability spaces of the transferee Y versus third parties Z, W,...

In the other formulation:

- (3*) increasing the number of the transferee Y's claims and immunities versus third parties Z, W,...
 (4*) reducing the number of claims and immunities of third parties Z, W,... versus the transferee Y.

Thus if O is an object owned by X, by transferring the ownership of O to Y, X reduces the liberty spaces and ability spaces of himself and third parties versus Y with respect to states of affairs S_1, S_2, \dots relating to O; simultaneously, by the transfer, Y's liberty spaces and ability spaces relating to Y and O are enlarged versus X and third parties.

When two parties, X and Y, bargain to make a contract, the potential advantages to X and disadvantages to Y, as well as the potential advan-

tages to Y and disadvantages to X, can be described in terms of (1)-(4). The general formulation in (1)-(4), however, encompasses a multitude of different specific variations with regard to the liberty/ability spaces involved. Enlarging and reducing liberty/ability spaces is described by the subset relation shown in the trees illustrated above in sections 3.3 and 3.4. The variations concern possible combinations of movements in these trees, according to (1)-(4). Moreover, likewise in the description of the legal status of an object, a choice must be made of states of affairs S_1, S_2, S_3, \dots , relevant to the contract, and of agents to be considered. Finally, when a contract is in view, a menu of possible legal results should be constructed, namely those that X and Y together, by consensus, have the ability to achieve. Each of these legal results is a combination of liberty spaces for different agents with respect to the states of affairs chosen. There are many such combinations, and each combination is an item on the menu of options that X and Y have to choose from when making the contract.

The scope of this essay does not permit a discussion of ‘menus’ for contract in terms of combinations of liberty spaces. Merely to illustrate the general idea of such a menu, we consider the following, highly simplified, example of two options on a menu (where ‘L’ stands for Liberty space):

Option 1

S_1 :
 $L(X, Y, S_1) = \{\text{Pro, Pass, Counter}\}$,
 $L(Y, X, S_1) = \{\text{Pass}\}$.
 S_2 :
 $L(X, Y, S_2) = \{\text{Pass}\}$,
 $L(Y, X, S_2) = \{\text{Pro, Pass, Counter}\}$.

Option 2

S_1 :
 $L(X, Y, S_1) = \{\text{Pass}\}$,
 $L(Y, X, S_1) = \{\text{Pro, Pass, Counter}\}$.
 S_2 :
 $L(X, Y, S_2) = \{\text{Pro, Pass, Counter}\}$,
 $L(Y, X, S_2) = \{\text{Pass}\}$.

In the example, the liberty spaces of X and Y are mutually interchanged between option 1 and option 2. Such an interchange may be the case in barter. If option 1 represents *status quo*, a barter contract will be made if both X and Y prefer option 2 to option 1.

4. Conclusion

Hohfeld’s theory of fundamental jural relations belongs to the juristic tradition of analytical jurisprudence. The notion of ‘decision space’ forms part of the conceptual framework of decision theory, game theory and bargaining theory, i.e., to fields of research belonging to the formal branches of economics and philosophy. In the foregoing it has been shown how Hohfeld’s system can be reformulated by the notions of liberty space

and ability space, or *Spielraum*. Such reformulation aims at creating, in part, a conceptual framework for legal relations more akin to that of the other fields mentioned.

Within institutional economic theory, much of the work of the property rights school has been devoted to general empirical correlations between efficiency and appropriate institutional arrangements. A fine-grained analysis of legal relations may seem too detailed and unwieldy for the study of general correlations of this kind. Part of what can be learnt from Ronald Coase and his approach, however, is that a detailed study of varying institutional relations (including legal relations between private parties) is relevant for economic theory. Part of a general theory to support such studies is a conceptual framework with a firm logical basis. Such a framework provides an assortment of tools from which those items can be chosen, are relevant to a particular study of institutional or legal relations. The aim of the present essay has been to give a modest contribution to such an assortment.

References

- Bentham, J. (1970). *Of Laws in General*. (Ed. by H. L. A. Hart.) London: Athlone Press.
- Brinz, A. (1873). *Lehrbuch der Pandekten*. Erster Band. 2:e, veränderte Auflage. Erlangen: Deichert.
- Coase, R.H. (1960). The Problem of Social Cost. 3 *Journal of Law and Economics*, 1-44.
- Cooter, R. & Ulen, T. (1999). *Law & Economics*. Reading, Mass.: Addison-Wesley.
- Gärdenfors, P. (1981). Rights, Games and Social Choice. 15 *Noûs*, 341-356.
- Hansson, B. (1970). Deontic Logic and Different Levels of Generality, 36 *Theoria*, 241-248.
- Hessler, H., (1973). *Allmän sakrätt*. Stockholm: Norstedts.
- Hohfeld, W.N. (1913). Fundamental Legal Conceptions as Applied in Judicial Reasoning. 23 *Yale Law Journal*, 16-59.
- (1917). Fundamental Legal Conceptions as Applied in Judicial Reasoning. 26 *Yale Law Journal*, 710-766.
- (2001). *Fundamental Legal Conceptions as Applied in Judicial Reasoning*. (Ed. by D. Campbell and Ph. Thomas.) Dartmouth: Ashgate.
- Honoré, A.M. (1960). Rights of Exclusion and Immunities Against Divesting, 34 *Tulane Law Review*, 453-468.
- Honoré, A.M. (1961). Ownership. In: A. G. Guest (ed.), *Oxford Essays in Jurisprudence*. Oxford: Clarendon Press.

- Jones, A.J.I. (2004). On Normative-Informational Positions. In: Lomuscio and D. Nute (eds.): *DEON 2004*. Berlin: Springer.
- Jones, A.J.I. and Sergot, M. (1993). On the Characterization of Law and Computer Systems: The Normative Systems Perspective. In: Meyer, J.-J. Ch., & Wieringa, R..J. (eds): *Deontic Logic in Computer Science*. Chichester: Wiley.
- (1996). A Formal Characterization of Institutionalized Power. 4 *Journal of the IGPL*, 429-445.
- Kanger, S. (1957). *New Foundations for Ethical Theory*. Part. 1. Stockholm: Department of Philosophy. (Mimeographed. Reprinted, with minor changes, in Vol. 1 of Kanger, 2001.)
- (1972). Law and Logic. 38 *Theoria*, 105-129. (Reprinted in Vol. 1 of Kanger, 2001.)
- (1977). Några synpunkter på begreppet inflytande. In: *Filosofiska smulor tillägnade Konrad Marc-Wogau, 75*. Uppsala: Filosofiska föreningen och Filosofiska institutionen. (Reprinted in Vol. 1 of Kanger, 2001.)
- (2001). *Collected Papers of Stig Kanger With Essays on His Life and Work*. Vol. 1-2. (Ed. by G. Holmström-Hintikka et al.) Dordrecht: Kluwer.
- Kanger, S. & Kanger, H. (1966). 'Rights and Parliamentarism', 32 *Theoria*, 85-115. (Reprinted in Vol. 1 of Kanger, 2001.)
- Lindahl, L. (1977). *Position and Change: A Study in Law and Logic*. Dordrecht: Reidel.
- (1994). Stig Kanger's Theory of Rights. In D. Prawitz et al. (eds.): *Logic Methodology and Philosophy of Science IX*. Amsterdam: Elsevier. (Reprinted in Vol. 2 of Kanger, 2001.)
- (2004). Deduction and Justification in the Law. The Role of Legal Terms and Concepts. 17 *Ratio Juris*, 82-202.
- Lindahl, L. and Odelstad, J. (2004). Normative Systems and Their Revision: An Algebraic Approach. 11 *Artificial Intelligence and Law*, 81-104.
- Moore, G.E. (1971). *Principia Ethica*. Cambridge: Cambridge UP.
- Pörn, I. (1970). *The Logic of Power*. Oxford: Blackwell.
- Renner, K. (1929). *Die Rechtsinstitute des Privatrechts und ihre soziale Funktion*. Tübingen: Mohr.
- (1949). *The Institutions of Private Law and Their Social Functions*. London: Routledge. (English translation of Renner, 1929.)
- Rosmini, A. (1993). *The Philosophy of Right*. Vol 1. Durham: Rosmini House.
- Sergot, M.J. (1999). Normative Positions. In P. McNamara and H. Prakken (eds.): *Norms, Logics and Information Systems*. Amsterdam: IOS Press.

- Sergot, M.J. (2001). A Computational Theory of Normative Positions, 2 *ACM Transactions on Computational Logic (TOCL)*, 581-622.
- Simmonds, N.E. (1986). *Central Issues in Jurisprudence*. London: Sweet & Maxwell.
- Stephen, F. H. (1988). *The Economics of Property Law*. Worcester: Harvester.
- Werin, L. (2003). *Economic Behavior and Legal Institutions*. New Jersey: World Scientific.