ILMAR TAMMELO

A PERSONAL APPRECIATION

*JULIUS STONE** and *GABRIEL MOENS***

Ilmar Tammelo died on February 7, 1982, shortly after returning from Salzburg to the Australia he still called his home. His loss will be keenly felt, not merely by colleagues engaged in common scholarly endeavour, but also by hundreds of law graduates of the University of Sydney who sat in his tutorials and classes in the 1950's and 1960's.

At the University of Sydney he was Senior Lecturer in Jurisprudence and International Law from 1958 to 1964 and Reader from 1965 to 1973. In 1973 he accepted a call to the Chair in Legal Philosophy[1] at the University of Salzburg and to be Director of its prestigious Institute for Legal Philosophy. He found himself at Salzburg surrounded by able and eager young colleagues and assistants, as well as students. Some of these, like Gabriel Moens and Helmut Schreiner, have already added to the literature in the areas of Tammelo's concern. There, as in Sydney, he enriched the formal university activities with gatherings of academics, practising lawyers and students, analogous to the vigorous Society of Legal Philosophy in Sydney. There (as also in Sydney) he was a keen gardener; but he made his later years strenuous by choosing a charming country house at Lochen forty kilometres from Salzburg, involving much mountainous and often hazardous driving.

Ilmar Tammelo overcame great hazards and obstacles to pursue his dedications. He was born in Narva, Estonia on February 25, 1917. It was of ill-omen for him that the years of his undergraduate legal studies in the University of Tartu in Estonia were marked by the sweep of contending Nazi and Soviet armies back and forth across the Baltic arena. This misfortune for him was, however, of better omen for the world of scholarship. For these barbarous forces in the East forced him to the West, including finally a quarter-century of teaching and working in Australia.

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The former author has taken responsibility for the more general aspects of Ilmar Tammelo's life and work. The latter author is responsible for the sketch here incorporated of the Counter-Formula Method.

[1] He succeeded Professor René Marcic, who was a most distinguished and beloved visiting teacher in the Department of International Law and Jurisprudence at the University of Sydney in 1971, and who tragically died with his wife Blanca in an aeroplane accident on his journey home to Salzburg.

The title of that Chair initially embraced also "Constitutional Law", but Tammelo took early steps to limit its ambit to "Philosophy of Law and Legal Theory".

He found himself as a young Privatdozent sitting at the feet of Gustav Radbruch, through the critical years following Radbruch's return to Heidelberg in 1945 after his enforced retirement under the Nazis.

During his varied life he was honoured by invitations from universities as far apart as Keio University, Tokyo; St. Anthony's College, Oxford and the University of Saarland. He was also at various times a Visiting Scholar at Harvard and Columbia Universities. He was a distinguished executive or editorial officer for many years until his death, of leading international organisations and journals in legal philosophy including the *Archiv für Rechts- und Sozialphilosophie*. Many barristers and solicitors in New South Wales will remember gratefully his leadership in the Australian Society of Legal Philosophy. As recently as 1979 he was elected to be a Foreign Member of the Academy of Sciences of Finland and received the award of the Franz-Böhm Medal for outstanding scholarship of the University of Siegen (West Germany), as well as the honorary doctorate of laws of the University of Bologna. Shortly before Tammelo's untimely death the President of Austria had announced the impending conferment on him by the Austrian State of the *Ehrenzeichen für Wissenschaft und Kunst, Erste Klasse*. He had, in any case, always planned to return to Sydney on his retirement. At the time of his death discussions had already been initiated with the University of Sydney Department of Jurisprudence to enable him to continue his jurisprudential work at that University.

No colleague or student will ever altogether forget the tolerance and receptiveness of Ilmar Tammelo's mind towards almost any idea presented to him, or his power to furnish it with a history and genealogy leading back usually to Greek mythology or Scandinavian legend and forward to the mysteries and mystiques of twentieth century existentialism in its many varieties. I have often thought that in this and other respects Tammelo's years near Radbruch in the late 1940s left deep traces in all his later life and work. Those were the years when Radbruch sought valiantly to bring to terms the high intellectual sweep and erudition of his relativist philosophy of law, with his deep revulsion against the horrors committed by the Nazi leaders and their cadres — and a complacent German legal profession — in the name of "law". Tammelo showed throughout his work a vast openness to new perspectives on law and justice, spanning the whole stream of Hellenistic-Judaic thought. Yet his thought was always finally anchored, as Radbruch's was in the end, in a doctrine of natural law to which love and not mere intellect alone could give reality.

The formidable bibliography here attached contains titles of no less than fifteen books, and a hundred major articles in the leading journals of legal education and legal philosophy of Australia, the United States and Europe. Among the wide range of his concerns, Tammelo most often focused on two. One was the meaning and criteria of "justice" seen not only in terms of external social contexts, but also in introspective terms of the questings and aspirations of individual human beings. His *Theorie der Gerechtigkeit* appeared in 1977; and, in the English language, his book *Justice* was on the press at the date of his death. If the forthcoming text in

English follows the work in German of 1977, it will afford within brief compass a remarkably comprehensive and penetrating account of the growth of thought about justice as developed in the work both of philosophers and jurists, of the structure and criteria of justice, and of the bearing on the justice notion of the vast and tremulous fields of psychology and metaphysics. Tammelo's other most enduring concern joined him by contrast rather firmly to the modern age of computers. He was already deeply engrossed in problems of restating legal discourse in terms tractable to syllogistic testing, at the time when cybernetics provided the overture to the age of computers. While in his studies of justice Tammelo may be considered by many as a rather subjective and even introspective thinker, his work on the use of logic in law is primarily addressed to others, to legal practitioners and to those who are concerned to assess and criticise the work of legal practitioners. He was concerned to persuade all involved that rationality as an implicit ideal of legal thought required that legal practitioners be aware of the exact uses, and also the limits on the uses of formal (or syllogistic or stringent) logic for their work. Tammelo realised of course that legal practitioners are inclined to think that their daily experience with and exposure to the discourse of lawyers equip them sufficiently to handle legal arguments. He was always concerned to insist that when it comes to unravelling any but the more simple of legal arguments, a sound knowledge of the principles and procedures of syllogistic logic (supplemented by but distinguished from other modes of reasoning) was indispensable.

Like the rest of his generation, Tammelo was deeply impressed by the appearance of Chaim Perelman and L. Olbrechts Tyteca's *Traité de l'Argumentation*, and the parallel work of John Wisdom and Stephen Toulmin, on what has since become variously known as "rhetorical" or "dialectical" or, as he himself preferred to call it, "zetetic" reasoning. This is not the place to explore the rather complex contrast between syllogistic reasoning which warrants the validity of the formal argument from premises that are given, and "rhetorical" or "dialectical" or "zetetic" reasoning which concerns the material aptness of the premises for yielding a correct conclusion for the relevant subject-matter.[2] Tammelo certainly recognised that an adequate performance of "the law jobs" involved both these ways of reasoning and knowing when each was appropriate. Yet it is true that most of his work and energy were devoted to formal or syllogistic reasoning (logic) and to its uses rather than its limits, as it offered itself in "the service of the law". He devoted himself to exposing its theoretical foundations, and he was eager to display to lawyers how they could confront their value-choices more clearly by translating facts and arguments and the resulting problems into terms susceptible of logical operations. He finally favoured and used for this purpose an easily readable

[2] See for a short account, with citations, Julius Stone, *Legal System and Lawyers' Reasonings* (1964), 301-347, esp. 325-337. And see I. Tammelo, *Modern Logic in the Service of Law*, Vienna/New York, Springer-Varlag, 1978, 2-7.

(Polish) notation[3] as the language of formulae and introduced useful terms for avoiding ambiguities and misleading connotations of words conveying logical ideas.

On this side of formal logic, Tammelo's most ambitious design was to frame, as simply as possible, efficient logical-decision-procedures by which the formal arguments leading to a legal conclusion can be tested for validity. While ordinary deductive proofs, such as the direct, indirect and conditional proofs, require ingenuity on the part of a lawyer to prove the validity of a legal argument, his search was for logical-decision-procedures to serve as methods of proving the validity *or* invalidity of a legal argument. Among the decision-procedures discussed at length in Tammelo's work on formal legal logic are the full tabular method and the short-cut tabular method. These methods, which proceed from the ascription of the values "true" or "false" to indicative formulae into which the legal argument is translated, are convenient ways of determining the validity and invalidity of arguments where only a few variables are involved.

Tammelo was aware, however, that the more important legal problems usually involve many variables, in application to which tabular methods tend to become very cumbersome. His ambition was to develop a logical-decision-procedure which would be an efficient and expedient method of testing the formal soundness of legal arguments, whether these involved a few or very many variables. He was already engaged in this task in Sydney, before he was called to Salzburg. The work which he began with his disciple Ron Klinger at the University of Sydney was to be later completed at the University of Salzburg in Austria in consultation and co-operation with several leading continental logicians and legal theorists; and he named this decision-procedure the Counter-Formula Method (CFM) of legal logical procedures. It suffices for the purposes of this appreciation to indicate briefly the aim of this procedure.

The Counter-Formula Method naturally assumes that elements of the legal discourse whose meaning is irrelevant to the argument under discussion are to be eliminated. The remaining legal propositions are then translated into a form which is susceptible of logical examination, and the resulting formulae are transcribed into shorter formulae or (where seen to be redundant in the argument) eliminated altogether. A "counter-formula" is a formula which negates any formula appearing among either the original premises, or any subordinate or intermediate premises used to reach the conclusion under examination. The Counter-Formula Method claims to be a multi-faceted tool for the practising lawyer, since it can be used to identify contradictions in the premises of a legal argument by subjecting the conjunction of the premises to this Method. Tammelo thought that the Counter-Formula Method could also be used as a

[3] The notation used by Professor Tammelo to express the formulae of modern logic is based on a system devised by Jan Lukasiewicz. See his work cited in n.2, at 9-35. This system makes use of capital letters rather than special symbols to express the operators. The symbols most commonly in use hitherto have been those which were employed by Alfred North Whitehead and Bertrand Russell in their *Principia Mathematica* (vol. 1, 1910).

procedure for discovering redundancies remaining in the premises of legal arguments even after they had been transcribed; he thought it could always identify the premises not needed for the validity of an argument.

The comprehensiveness of the Counter-Formula Method has been endorsed by eminent German logicians such as Paul Lorenzen,[4] and has been used in computer programming by IBM-Vienna. Variants of the method have indeed been developed by other scholars, some of them under Tammelo's own guidance.[5] The method has been used successfully by legal practitioners in various European countries to test the formal soundness of particular legal decisions.[6]

A major difficulty that Tammelo was certainly aware of lies in the task of translation of actual discourse of legal thought into formulae which both reflect the original meaning, and can serve the procedures of symbolic logic. This translation requires (besides obvious skills of language) skills of judgment and interpretation of the gist of an argument. Conscious that deficient interpretation must undermine correct translation, Tammelo struggled in some of his work to show how particular legal arguments and expressions could be adequately interpreted so as to be amenable to the kind of logical analysis in which he placed such faith. No particular illustrations of the possibility of adequate interpretation, however, can assure us that this adequacy will always (or even usually) be attainable. Certainly, Tammelo had not solved this problem before his untimely death.

Moreover, as already observed, Tammelo's dedication to formal logic and its symbolic variants was qualified by the recognition of the vast range of human affairs intractable for various reasons to merely formal logical argument, of this or any other kind. The less stringent reasoning which in its modern revival was called "rhetorical" or "dialectical" reasoning, Tammelo styled "zetetic" reasoning, the term "zetetic" highlighting that the subject-matter was such that knowledge of it must be sought by persistent questioning and would remain in the end problematical. A central theme in his work on zetetic reasoning focused on the intellectual conditions which must be fulfilled if we are to enter into dispassionate dialogue about world problems. He argued, in particular, that it is necessary to question the material validity of value-judgments by subjecting them to rational argumentation. A rational attitude demands (he insisted) a radical

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[4] P. Lorenzen, "Die Vollständigkeit einer unverzweigten Variante des 'analytischen' Entscheidungsverfahrens der klassischen Logik", (1976) 18 *Archiv für mathematische Logik und Grundlagenforschung*, 19-22.

[5] See I. Tammelo and G. Moens, *Logische Verfahren der juristischen Begründung*, Springer-Verlag, Vienna/New York, 1976, 86-92 (contraconjunctive variant of the CFM); I. Tammelo and I. Tebaldeschi, *Studi di logica giuridica*, Dott. A. Giuffrè, Milano, 1976, 137-149 (iso-formula method); G. Moens, "Die Gestaltungsmethode und ihre rechtslogischen Anwendungen", in I. Tammelo and H. Schreiner (eds.), *Strukturierungen und Entscheidungen im Rechtsdenken*, Springer-Verlag, Vienna/New York, 1978, 83-94 (iso-formula method); H. Schreiner, "Die Eliminationsmethode als logisches Entscheidungsverfahren", in I. Tammelo and H. Schreiner (eds.), *Strukturierungen und Entscheidungen im Rechtsdenken*, Springer-Verlag, Vienna/New York, 1978, 65-81 (elimination method).

[6] H. J. M. Boukema, "A Logical Scrutiny of the Van Duyn Case", (1978/2) *Legal Issues of European Integration*, 83-100; R. Stranzinger, "Gegenformelmethode als Werkzeug juristischen Denkens", (1980) II *Rechtstheorie*, 496-506.

scepticism or at least relativism as a point of departure. Argumentation is only possible through effective human communication, which is disturbed by the unquestioned acceptance of value-judgments. If, for example, humans regard "survival" as a value then they "must free [themselves] from the anchorage of ... habitual convictions and from the spell of ... beguiling dreams wherever there is an occasion for giving reason a chance to assert itself in individual or social life."[7] "Paraductive reasoning" involving the rational weighing of the pros and cons of each argument must have its way: so that for Tammelo value-judgments based on trans-empirical ideas, for instance on religion, mystical optimism, or metaphysics, could not contribute to the solution of world problems. I sometimes thought, however, that there was no better example of mystical optimism than Tammelo's resolve to free people from their "habitual convictions" and "beguiling dreams".

On the side of legal reasoning Tammelo will certainly be best remembered for his efforts to devise and prove efficient decision-procedures for testing the validity or invalidity of legal arguments, as distinct from the material correctness of conclusions. The Counter-Formula Method is the high point of these efforts, and it is not surprising that his full exposition in his latest book, *Modern Logic in the Service of Law*[8] is already regarded as a "classic" in this area.[9] As the role of computers in law increases, it will be surprising if this side of Tammelo's work does not increase in importance.

It is understandable that a mind wholly trained in the civil law, and always rather uncomfortable with the seemingly unguided flow of common law through the cases, did not fully see the kinship of what he called "zetetic" reasoning with the intellectual processes of appellate judges in common law decision-making. My own study since 1946 of common law appellate judicial decision-making has shown that while formal (stringent or syllogistic) logical analysis is "an indispensable ingredient both in legal training and in legal processes generally", it is never *in itself* a *decisive* means either of creating law, or of deciding what is the correct rule when the law is disputed. I have shown that when the law is disputed logical deductions from existing legal propositions cannot be treated as law, without assessing all aspects of the given situation, including its ethical and sociological aspects. To do so is "essentially an abuse of logic, leading to legal anomalies and distortions". It is, I have submitted, the constantly arising leeways produced by categories of illusory reference endemic in the legal materials which *appear* to lead judges by compelling logic to their decisions, and yet *in fact* leave them free to choose between different available outcomes. I have indeed suggested that this may partly explain how our judges were able to achieve so much in adapting the common law amid drastic changes stretching from feudal agricultural England to the

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[7] I. Tammelo, *Survival and Surpassing*, Melbourne, The Hawthorn Press, 1971, 130.
[8] Vienna/New York, Springer-Verlag, 1978.
[9] T. R. Haggard, "A Selective Bibliography on the Use of Logic in Law", (1979) 20 *Jurimetrics Journal*, 102.

modern complex, industrialised and urbanised democracy. The fact that syllogistic logic has not controlled this adaptation should not lead us to the obviously absurd notion that the judicial choices leading to it have been simply arbitrary or random. It is much more sensible to recognise that the limits of such logical reasoning in appellate decision-making have not been, nor should they be, the limits of *all* reasoning here.

The hankering demand, escalated by modern science, that all human problems be handled by formal reasoning operating with premises empirically established, has come to little, despite the occasional querulous (or even arrogant) natural scientist who still earnestly presses it as the only path to human salvation. With legal as with other moral, social and political problems, we have no choice but to give renewed consideration and cultivation to whatever other kinds of reasoning may give promise of guidance in social action. For if men cannot reason in some orderly fashion beyond the limits where formal logic can take them, many of the most vital issues must lie virtually abandoned to an anarchy either of arbitrary personal preferences, or of force, fraud or related forms of manipulation, practised by some of us on others.

Common lawyers should certainly re-explore the "rhetorical reasoning" of the ancient world, and its elaboration in "the new rhetorics", as a conduit for more orderly transmission of ideas of justice and of the facts of social life into the mobile and shifting body of discourse of which the common law consists. They should be encouraged in this by recognising that some main features of the appellate judicial process which resist understanding in terms of deduction from pre-existing legal propositions, fall rather easily into place in terms of the notions with which rhetorics works.

First, one main obstacle to characterising the appellate judicial process in terms of formal logic has lain in the fact that the data from which judges begin to reason (the main premise of their purported syllogism, as it were) often do not consist of legal propositions, but of some sort of composite of such propositions with notions of justice or policy. Such a composite stands uneasily in the role of premise for a formal logical argument proceeding from *existing legal propositions.* Yet we can think of such a composite easily and fruitfully as a "seat of argument", "place of argument" or "*tópos*" for the more open argument and testing characteristic of rhetorics. When Lord Radcliffe invoked the modern growth of "insurance" in the context of *Lister v. Romford,*[10] he was not taking any *legal proposition* as a premise for formal reasoning. He was rather drawing assenting attention to a set of commercial and legal techniques and the surrounding social thoughtways and relations, as the context within which the instant case had to be decided, as the apt "seat of argument" in a modern English industrial community.

Second, if we think of legal reasoning exclusively as formal logic, we have to think of the legal order as an aggregate of legal propositions; for

[10] [1957] A.C. 555.

formal "logic" can work only with propositions. But received ideals and techniques of lawyers have a ready and orderly place as *tópoi* or places of legal argument, to which long acceptance by the wise and learned has given a strong, built-in appeal.

Third, such insights may help common lawyers to bridge not merely the chasms between legal and non-legal data, and between legal propositions and the vaguer ideals and techniques of law, but also the chasm still sometimes found between common law attitudes in relation to statute and judge-made law. For in the sense of rhetorical reasoning, "*tópoi*" are seats of argument for legislative as well as judicial activity. When we praise a common law judge's use of statutory analogies to help him fix the meaning of "child", we assume this is finally a way of saying that since "right-minded members of the community" have come to think of "child" in terms of natural relation, affection and duty, rather than legal legitimacy, this way of thinking has become a "seat of argument" of which the statutory usage is but obvious evidence.

Fourth, the notion of *tópoi* might perhaps help us to bridge the gap between the theory and practice, the profession and actuality, of *stare decisis* and its related mystery of "the *ratio decidendi* of a case". This last notion, as I have shown,[11] cannot be given a precise meaning that will allow us by formal logic to identify it indubitably for any single case. Yet it may still constitute a "seat of argument" from which every trained common lawyer automatically begins his search for the meaning of the case. Its perpetuation may also be assured by the related seats of argument establishing the value of certainty and stability in the legal order. Complementary to this we may better understand that what we mean by a "leading case" is that it has become common ground among lawyers that over a certain (even though ill-defined) range of legal relations the meaning of that case is the apt "seat of argument". A leading case is a *tópos* of legal argument. In the dialectical process parts of its meaning will be given precision; and it is also quite consistent with this that for long, sometimes for centuries, doubts as to its meaning and ambit may remain or even newly appear, sometimes to push the case altogether into limbo. The fact, as I have elsewhere pointed out,[12] that philosophers are complimentary enough to explain the nature and value of this rhetorical or nonstringent reasoning by telling their colleagues to watch how common lawyers and judges argue and decide disputed questions of law, does not in itself assist the common law judges in their agonisings. Yet in other respects, as I have suggested, the blind may still lead the blind with a degree of helpfulness.

In his studies of justice and legal reasoning, as indeed also in his many other concerns, such as the value of a universal language (even if it needs must be an artificial one), echoings of the adventurous intellectual pattern of his mentor Radbruch are to be heard throughout Tammelo's concerns.

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[11] First in J. Stone, *The Province and Function of Law* (1946), 186-190; J. Stone, "The *Ratio* of the *Ratio Decidendi*", (1959) 22 *Modern Law Review*, 597-620; and *id., Legal System and Lawyers' Reasonings* (1964), 267-274, 333-335.

[12] Work last cited, 327ff., esp. 335-336.

He brought to the workaday law school routines a rich equipment in Greek and Roman history, drama, literature and philosophy. Even if few of his Sydney students had the background to benefit fully from this, there were also few whose outlook in later life was quite untouched by it. Indeed, it was striking to see, at the class dinners which we often held in the 'fifties to close the academic year, the demonstrations of affection towards him. I remember on at least one occasion seeing him carried shoulder-high by the class to his place at the table. He gave endless time to anyone, student or colleague, who shared his concern for wider understanding. He acted out in his own life Gustav Radbruch's moving tribute to patience.

> Patience gains the value of permanence for the transitory. It holds firm the fleeting instant; it means victory over Time, because it has no fear of losing time. At every point of its road it is at its destination and enjoys the product of work already when the work is being done. It means balance, faith, and trust. It has created the Persian carpet and the Gothic cathedral. It is the gentle mother of culture.

Ilmar Tammelo shared fourteen years of struggle and achievement in Sydney with his first wife, Hilda Tammelo, who was also of Estonian origin. Both were highly esteemed by the Estonian community, in which they played an active role. After that marriage was dissolved his second wife, Lyndall Lorna Tammelo (née Cureton), a Sydney law graduate, shared the productiveness of his later years, including those at Salzburg. He left no children, but a multitude of men and women who will remember him as a caring teacher, friend or colleague.

PRINCIPAL PUBLICATIONS OF ILMAR TAMMELO

Books*

1 *Untersuchungen zum Wesen der Rechtsnorm* (1948), Scherer Verlag, Heidelberg.
2 *Drei rechtsphilosophische Aufsätze* (1948), Scherer Verlag, Heidelberg.
3 *Treaty Interpretation and Practical Reason* (1967), The Law Book Company, Sydney.
4 *Outlines of Modern Legal Logic* (1969), Franz Steiner Verlag, Wiesbaden.
5 *Principles and Methods of Legal Logic* (in Japanese, 1971), Hogaku-Kenkyu-Kai Publication, Keio University, Tokyo.
6 *Survival and Surpassing* (1971), The Hawthorn Press, Melbourne.
7 *Rechtslogik und materiale Gerechtigkeit* (1971), Athenäum Verlag, Frankfurt am Main.
8 *Gründzuge und Grundverfahren der Rechtslogik*, vol. I (1974), vol. II (1977), Verlag Dokumentation, München (together with Helmut Schreiner).
9 *Zur Philosophie des Überlebens* (1975), Verlag Karl Alber, Freiburg/München.
10 *Logische Verfahren der juristischen Begründung* (1976), Springer Verlag, Wien/New York (together with Gabriël Moens).
11 *Studi di logica giuridica* (1976), Dott. A. Giuffré Editore, Milano (together with Ivanhoe Tebaldeschi).
12 *Theorie der Gerechtigkeit* (1977), Verlag Karl Alber, Freiburg/München.
13 *Modern Logic in the Service of Law* (1978), Springer Verlag, Wien/New York.
14 *Theorie der gerechtigheid* (in Dutch, 1979), Standaard Wetenschappelijke Uitgeverij, Antwerpen/Amsterdam.
15 *Justice* (forthcoming).

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Articles

1 "Artur-Töeleid Kliimanns Rechtstheorie" (1950), 39 *Archiv für Rechts- und Sozialphilosophie* 90.101.
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3 "Sketch for a Symbolic Juristic Logic" (1955) 8 *Journal of Legal Education* 277-307.
4 "Tests of Inconsistency between Commonwealth and State Laws" (1957) 30 *Australian Law Journal* 469-501.
5 "Law, Justice, and Social Reality" (1957) 8 *Österreichische Zeitschrift fur öffentliches Recht* 373-384.

6 "On the Space and Limits of Legal Experience" (1958) 11 *Journal of Legal Education* 171-195.
7 "The Antinomy of Parliamentary Sovereignty" (1958) 44 *Archiv für Rechts- und Sozialphilosophie* 495-513.
8 "La relatività di giustizia ed il principio della 'sollecitudine'" (1958) 35 *Rivista Internazionale di Filosofia del Diritto* 350-369.
9 "On the Logical Openness of Legal Orders" (1959) 8 *American Journal of Comparative Law* 187-203.
10 "On the Logical Structure of the Law Field" (1959) 45 *Archiv für Rechts- und Sozialphilosophie* 95-101.
11 "Justice and Doubt" (1959) 9 *Österreichische Zeitschrift für öffentliches Recht* 308-417.
12 "On the Lawyer's Search for Contact with the Philosopher" (1961) 13 *Journal of Legal Education* 187-203.
13 "La ricerca del giurista per un incontro col filosofo" (1961) 38 *Rivista Internazionale di Filosofia del Diritto* 573-599.
14 "Ideas of Justice and *Caritas Sapientis*" (1962) 2 *Jaipur Law Journal* 51-77.
15 "Syntactic Ambiguity, Conceptual Vagueness, and the Lawyer's Hard Thinking" (1962) 15 *Journal of Legal Education* 56-59.
16 "The Nature of Facts as a Juristic *Topos*" (1963) Beiheft 39 *Archiv für Rechts- und Sozialphilosophie* 235-261.
17 "Contemporary Developments of the Imperative Theory of Law" (1963) 49 *Archiv für Rechts- und Sozialphilosophie* 255-261.
18 "The Rule of Law and the Rule of Reason in International Legal Relations" (1963) 6 *Logique et Analyse* 335-368.
19 "La natura dei fatti come *topos* giuridico" (1963) 40 *Rivista Internazionale di Filosofia del Diritto* 655-683.
20 "The Meaning of Meaninglessness" (1963) 5 *Malaya Law Review* 1-39 (together with Anthony R. Blackshield).
21 "Tensions and Tenebrae in Treaty Interpretation" (1964) 18 *Dialectica* 337-350.
22 "Legal Formalism and Formalistic Devices of Juristic Thinking" in S. Hook (ed.), *Law and Philosophy* (1964) 316-328.
23 "The Law of Nations and the Rhetorical Tradition of Legal Reasoning" in *Indian Year Book of International Affairs* (Supplement, 1964) 227-258.
24 "Law, Logic, and Human Communication" (1964) 50 *Archiv für Rechts- und Sozialphilosophie* 331-366.
25 "Coexistence and Communication" (1965) 5 *Sydney Law Review* 29-58.
26 "Legal and Extra-legal Justification" (1965) 17 *Journal of Legal Education* 412-422 (together with Lyndel V. Prott).
27 "Giustificazione giuridica ed extragiuridica" (1965) 42 *Rivista Internazionale di Filosofia del Diritto* 221-235 (together with Lyndel V. Prott).
28 "La interpretacion de los tratados y la razón práctica" (1965) 11 *Diánoia* 225-257.

29 "Theoretische Aspekte der Definition der Aggression" (1965) 5 *Moderne Welt* 315-330.
30 "Some Aspects of Recent Contributions to Logic in the Service of Law" (1966) 5 *Sydney Law Review* 261-266.
31 "Analysis of Human Communication" (1966) 52 *Archiv für Rechts- und Sozialphilosophie* 503-543.
32 "World Order and the 'Enclaves of Justice'" (1966) 1 *Ottawa Law Review* 1-35.
33 "Aspetti trans-nazionali della comunicazione umana" (1968) 45 *Rivista Internazionale di Filosofia del Diritto* 27-77.
34 "Treaty Interpretation and Considerations of Justice" (1968) 5 *Revue Belge de Droit International* 80-86.
35 "Interpretazione dei trattati e considerazioni intorno alla giustizia" (1968) 19 *Jus* 38-45.
36 "The Perennial Role of Legal Philosophy" in A. Kaufmann (ed.), *Gedächtnisschrift für Gustav Radbruch* 121-128.
37 "The Postulate of Methodological Purity in Hans Kelsen's Pure Theory of Law" (1968) 7 *Duquesne University Law Review* 177-185.
38 "Logical Structure of the Legal Norm and of Legal States of Affairs" in A. Kaufmann (ed.), *Festschrift für Karl Engisch* (1969) 143-149.
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