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Alchemistic Metaphors in Comparative Law: Mixed Legal Systems, Reception of Laws and Legal Transplants

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**ALCHEMISTIC METAPHORS IN COMPARATIVE LAW:
MIXED LEGAL SYSTEMS, RECEPTION OF LAWS AND
LEGAL TRANSPLANTS**

Andreas Rahmatian*

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ABSTRACT

The terms “mixed legal systems” and “legal transplants” are used frequently in comparative law. What they denote exactly, is difficult to ascertain: what does the mixité consist of, what are its ingredients or building blocks; which types of mixité exist, how are legal transplants transformed in the receiving legal system? Comparative lawyers often resort to metaphors when they try to describe and explain these complex phenomena: metaphors from cooking, music, horticulture or biology. Whenever there are mixtures, transformations, or transmutations, metaphors from the philosophical concepts of alchemy are at least equally illuminating.

This article discusses the different problems of conceptualising and describing mixed systems and legal transplants by using alche-

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mistic ideas and metaphors. It also gives an introduction to the philosophical concepts of alchemy in outline, and, in the appendix, in more detail, because lawyers are usually unfamiliar with alchemy. Yet, alchemy was central to the historical development of philosophy and the natural sciences, as well as to theology, from antiquity well into the late seventeenth century. However, anyone in search of the mystical and the occult will be disappointed: many serious alchemists in the Renaissance period were predecessors of modern chemists. They were early researchers and scientists, and so were the concepts they developed and believed in.

Keywords: philosophical concepts of alchemy, mixed legal systems, legal transplants, comparative private law

I. INTRODUCTION

The concepts and terms “mixed legal systems” and “legal transplants” are well-known and used regularly in comparative law scholarship. What they exactly denote and what they try to refer to is highly contentious; in fact there does not seem to be much agreement among comparative lawyers about their meaning at all. This article wants to show that these problems of comparative law are philosophical ones. They are strikingly similar to ideas and concepts of natural philosophy from Aristotle onwards. Perhaps the most influential practical application of the speculations and observations of natural philosophy was alchemy. It was alchemy, from neoplatonic times in antiquity until the early eighteenth century with the gradual beginning of modern chemistry, which gave the theoretical speculations about transformation, metamorphosis, change of animate and inanimate matter—whether physical or spiritual-conceptual—the practical aspect and the experimental outlet. Within their practical discipline of law, comparative lawyers often wrestle with theoretical concepts when trying to explain complex legal phenomena they may not be able to understand fully. Their methods, frequently speculative and imaginary, share a number of similarities with the old alchemists’ approach.

The following discussion will start with an outline of the concepts of alchemy (section II). It will then deal with the differences between alchemy and modern chemistry and the relevance of notions of alchemy, rather than chemistry, to an analysis of academic debates in comparative law (section III). The last two sections will discuss the interesting parallels between comparative law scholarship and alchemistic thinking in relation to the concepts of mixed legal systems (section IV) and legal transplants (section V). In an Appendix to this article, an outline of the development of philosophical notions of alchemy until the beginning of modern scientific thinking will be provided: although not strictly speaking necessary for the understanding of alchemistic metaphors in comparative law, this section gives further background information on a form of philosophical thought that is unfamiliar nowadays but shaped philosophical and theological concepts until the start of the eighteenth century.

II. CONCEPTS OF ALCHEMY

Alchemy is normally understood as being the art of making gold from base metals (*chrysopoeia*), but in a broader sense, it is the art, craft, and most importantly, the philosophy, which enables the transformation of one metal, or more generally one form of matter, into another: the transmutation. Thus, alchemy consists of two branches: the artisanal practical one in which recipes are developed and applied in a laboratory, and the philosophical one in which alchemist activities give effect to philosophical theories.¹ From the time of antiquity and until the eighteenth century, only seven metals were recognised, the five base metals—mercury, tin, iron, copper, lead—and the two noble metals, silver and gold.² The change from one metal

1. LAWRENCE PRINCIPE, *THE SECRETS OF ALCHEMY* 13 (U. of Chicago Press 2013).

2. Alchemists made a macrocosmic connection to the universe: gold corresponded to the sun, silver to the moon, copper to Venus, iron to Mars, mercury or quicksilver to Mercury, lead to Saturn, and tin to Jupiter. See ERIC JOHN

to the other was not considered a change of metals, that is, from one to a different kind of matter, but a change of form of the same matter as an underlying principle.³ The transmutation was understood not to occur automatically, but with the assistance of an agent, usually mercury, sulphur⁴ or other inorganic or organic matter and artisanal practices, such as heating, distillation, condensation and various other activities. The prepared substance, mixture or agent was often referred to as the philosophers' stone, the tincture or the elixir.⁵

A fundamental idea of alchemy was that the alchemist does not create new substances, but assists in completing the course of nature: the "new" substance is already contained in the original (base) substance, and through the transmutation, initiated by the alchemist, nature is only perfected. A book highly regarded by alchemists, and unusually lucidly written for a work on alchemy, the *New Pearl of Great Price (Pretiosa Margarita Novella)* by Petrus Bonus of Ferrara, written around 1330,⁶ made that principle quite clear⁷:

The fact is that, in producing gold, the Art of Alchemy does not pretend to imitate the whole work of Nature. It does not create metals, or even develop them out of the metallic first-substance; it only takes up the unfinished handiwork of Nature (i.e., the imperfect metals), and completes it (transmutes metals into gold). It is not then necessary that Nature's mode of operation . . . should be so very accurately known to the Artist. For Nature has only left a comparatively small thing for him to do—the completion of that which she has already begun Nature herself is set upon changing these metals

HOLMYARD, *ALCHEMY* 153 (Penguin Books 1968), for the usual alchemical/astronomical-astrological symbols.

3. F. SHERWOOD TAYLOR, *THE ALCHEMISTS* 16 (Paladin 1976); HOLMYARD, *supra* note 2, at 21.

4. The terms "mercury" and "sulphur" should not be understood only in the narrow meaning of modern chemistry, *see* PRINCIPE, *supra* note 1, at 36.

5. PRINCIPE, *supra* note 1, at 123 (on the making of the philosophers' stone); *see also* ATHANASIVS KIRCHER, *BOOK 11 MUNDUS SUBTERRANEUS* 268 (3d ed., Apud Joannem Janssonium 1678) for a seventeenth-century explanation of the philosophers' stone.

6. HOLMYARD, *supra* note 2, at 141.

7. PETRUS BONUS OF FERRARA, *THE NEW PEARL OF GREAT PRICE* 152-153 (A.E. Waite trans., J. Elliot 1894).

into gold; the Artist has only to remove the cause which hinders this change (i.e., the corrupting sulphur), and then he can depend upon Nature for the rest.

Today we know that a change from a base metal to gold by transmutation is impossible, but well into the late seventeenth century even sceptics and representatives of the Scientific Revolution, such as Robert Boyle, reported to have witnessed a successful transmutation.⁸ However, we can change base metals into gold today, by way of changing the atomic structure of the original element; although it can be an issue how stable the new element is. Indeed, in 1980 scientists in the U.S. used a particle accelerator to change a small amount of bismuth into gold. The problem was that it cost \$10,000 to produce a tiny amount of gold worth one billionth of a cent,⁹ so digging for gold will remain the only economically efficient option.

III. THE DIFFERENCES BETWEEN ALCHEMY AND MODERN SCIENCE AND CHEMISTRY, AND THE RELEVANCE FOR COMPARATIVE LAW

What distinguishes the modern natural sciences from alchemy is that the modern sciences make structured and methodical observations, report these clearly to communicate them to fellow scientists for testing and verification, and deduce general natural laws from the findings through experiments. Anything that cannot be observed in experiments or otherwise is not accepted, and a comprehensive interpretation of the world, partly based on speculation, is avoided. The modern natural scientist usually stays away from natural philosophy, very much in contrast to the early modern scientists of the seventeenth century. Modern science does not seek to integrate its specific findings in a holistic philosophical interpretation of the

8. PRINCIPE, *supra* note 1, at 168-170.

9. MARK MORRISON, *MODERN ALCHEMY: OCCULTISM AND THE EMERGENCY OF ATOMIC THEORY* 135 (Oxford U. Press 2007).

world, but adds to the body of knowledge in small, limited, objectively verifiable portions, through experimentation and observation.¹⁰

Alchemists share with the modern chemist the need for practical laboratory work, but for a different purpose: their knowledge derived from speculation and tradition, and their work was the attempted implementation of theory, not experiment that may yield an underlying natural law.¹¹ The “work,” in the specific alchemic sense, was primarily the elaboration of the philosophers’ stone (for the transmutation). Only after that “work” knowledge in general could be obtained, such as general principles of transmutation or change in natural processes—concepts that ultimately derive from Aristotelian thinking. The alchemist’s “work” only completes the unfinished handiwork of nature, and the knowledge the alchemist seeks to obtain from it is to be universal and all encompassing.¹²

With the exception of striving for universal and holistic knowledge of the world, the scientific approach of lawyers is more similar to the alchemists than to the modern natural scientists. There are no natural laws in law, human laws are indeed man-made; the rules derive from tradition (particularly visible in the principle of *stare decisis* of common law systems, but also any kind of customary law and civilian *ius commune*) and speculation (legal concepts which are human intellectual constructs), and interpretation of authoritative texts, similar to the way in which alchemists obtain their theories.

The lawyer operates through textual interpretation. Thus, law is not a natural science (and strictly speaking not a social science) but a historical-hermeneutic science—Hermes as the mythical father of alchemy and the *spiritus rector* of the science of understanding and interpretation of communication, hermeneutics, is an obvious connection. Whether law is also a hermetic science is for non-lawyers

10. TAYLOR, *supra* note 3, at 177-178.

11. *Id.* at 178-179.

12. PETRUS BONUS, *supra* note 7, at 153, 169-170, 186-187.

to decide; in any case, it should not be in a democracy founded on transparency and public accountability. Law is based on authority, not on natural laws elicited by observation and experimentation, and it is normative, not factual. The parallel is especially visible in Christian alchemy that is also underpinned by moral (and legal, normative) tenets, which the alchemic “work” illustrates or completes. For instance, the religious (moral/normative) concept of transubstantiation is mirrored by the alchemic transmutation.¹³

Like the alchemist’s practical work in his laboratory, the lawyer’s work is also practical, as any legal practitioner who drafts a contract would readily confirm, but this work is not designed to gain any scientific knowledge from it. Yet, historically, a lawyer would have considered the application of the laws, down to his “work” of drafting a contract according to the law, as ultimately giving effect to laws of Nature or immutable religious laws from God, similar to the alchemists. The idea of the origin of law in God appears clearly in the institutional writings of jurists as late as in the seventeenth century when they discuss the sources of law.¹⁴

Why is the history of the ideas of alchemy relevant to comparative law in particular? It is true that legal concepts, such as that of specification, have alchemistic features, or are based on the same philosophical concepts that would also contribute to the making of alchemy.¹⁵ More importantly, however, comparative lawyers, especially those discussing mixed legal systems, inadvertently use some forms of alchemistic thinking.

13. PIERRE MUSSO, *LA RELIGION INDUSTRIELLE* 293 (Fayard 2017).

14. See, e.g., the Scottish institutional writer JAMES STAIR, *THE INSTITUTIONS OF THE LAW OF SCOTLAND* 76-77 (David M. Walker ed., U. Presses of Edinburgh & Glasgow 1681); see also the French institutional writer JEAN DOMAT, *1 THE CIVIL LAW IN ITS NATURAL ORDER: TOGETHER WITH THE PUBLIC LAW* iii-iv (William Strahan trans., J. Bettenham ed. 1722).

15. The Sabinian School, influenced by the Stoa, was of the opinion that *mater*, even if manufactured and processed, remains essentially the same (therefore, the original owner retains ownership), while the Proculians, in line with Aristotelian thinking, thought that processing changes matter because the *form* changes and a new thing arises (thus, the manufacturer acquires ownership). See DIG. 41.1.7.7 (Gaius, *Common Matters or Golden Things* 2); see also MAX KASER,

Isaiah Berlin, not without a certain distancing irony, has famously divided thinkers into hedgehogs and foxes. The hedgehog relates everything to a single central vision, one system, and one universal organising principle. Everything the hedgehog understands, feels, and says, has significance only within and in the light of that principle. In contrast, the fox pursues many ends, often unrelated and even contradictory, connected, if at all, only in some factual psychological or physiological way, with no underlying moral or aesthetic principle. Plato, Dante, Pascal, Hegel, Dostoevsky, Nietzsche, Ibsen, Proust are hedgehogs, Berlin says. While Herodotus, Aristotle, Montaigne, Erasmus, Molière, Goethe, Pushkin, Balzac, Joyce are foxes.¹⁶ Berlin also considers Tolstoy to be a fox, although Tolstoy would have believed to be a hedgehog.¹⁷ One could add Voltaire, Hume and Alexander von Humboldt to the list of foxes (who may also have believed to be hedgehogs), and, particularly important for comparative law, Herder, although Herder himself said almost nothing about law specifically.¹⁸

It is self-evident that the sciences and the bureaucracy of scientific pursuit and of universities strongly favour hedgehogs who strive for discovering or developing a consistent, all-encompassing system or theory, a set of axiomatic principal rules as the foundation of everything, without contradictions, and based on some unquestioned notion of reason. Lawyers and legal theorists are no different. Although the old science of law in particular mirrors the intellectual history of mankind since antiquity, so that it blatantly shows the contradictions, irreconcilabilities and irrationalities of rules throughout the centuries, lawyers flee into the specialisation of some

DAS RÖMISCHE PRIVATRECHT: ABSCHNITT. DAS ALTRÖMISCHE, DAS VORKLASSISCHE UND KLASSISCHE RECHT 429 (2d ed., C. H. Beck ed. 1971).

16. Isaiah Berlin, *The Hedgehog and the Fox*, in *THE PROPER STUDY OF MANKIND: AN ANTHOLOGY OF ESSAYS* 436-437 (Henry Hardy & Roger Hausheer eds., Pimlico 1998).

17. *Id.* at 438.

18. Andreas Rahmatian, *European Copyright Inside or Outside the European Union: Pluralism of Copyright Laws and the "Herderian Paradox,"* 47 INT'L REV. INTELL. PROP. & COMPETITION L. 918 (2016).

areas of doctrinal law to pursue undisturbed the ideals of a kind of oneness and of universal consistent rules. Anyone who realises irreconcilable contradictions, who is not afraid of noticing irrationalities and inexplicable evolutions, reconsiderations and reinterpretations of ideas and rules divorced from originally different contexts, and who can live with value pluralism (not to be confused with value relativism)¹⁹ and even with the inherent paradox that the single, universal organising principle consists in being a conglomerate of incomparable and irreconcilable fundamental values and laws, that person is a fox. This may be depressing for some, but for an intellectual historian or polymath (one often entails the other) this is inevitable, and for a comparative lawyer it is advisable.

Where ideas and notions influence each other, often in unexpected ways, and transmute to different concepts, so that causalities can only be presumed but not ascertained, and where there is no clear answer as to origin, characteristics or reason, then this situation has alchemistic features. Thinkers who do allow these features into their research and their thought could, beside the categories of hedgehogs and foxes, perhaps be named alchemistic thinkers as opposed to Cartesian, mechanistic or causal thinkers.

Mixed legal systems obviously have elements of ideas of alchemy, but scholars of mixed legal systems think of themselves certainly not as alchemistic thinkers and often consider themselves as hedgehogs, although they really are foxes (or should be). However, their understanding of their object of study improves if they are open to the idea of alchemist thought, independent of any endeavor of turning base metals into gold, because a philosophical comprehension of alchemistic concepts has nothing to do with irrationality, mysticism or unscientific study and experimentation.

19. See Isaiah Berlin, *Alleged Relativism in Eighteenth-Century European Thought*, in *THE CROOKED TIMBER OF HUMANITY: CHAPTERS IN THE HISTORY OF IDEAS* 76-82 (Henry Hardy ed., Fontana Press 1991) (on the value pluralism—not value relativism—of Vico and Herder).

IV. METAPHORICAL PARALLELS OF ALCHEMISTIC IDEAS IN LAW:
MIXED LEGAL SYSTEMS

One has to make a few cautionary preliminarily comments about the category of “mixed legal systems.” The phenomenon of mixed legal systems or mixed jurisdictions²⁰ certainly exists, but usually scholarly endeavours in this field are prompted by political aims as much as by an increase of scientific knowledge. This starts with a narrow demarcation of the field of study among orthodox scholarship: a mixed system is supposedly only a combination of Roman law-inspired civil law and English law-inspired common law; the representative legal systems being Scotland, South Africa, Quebec and Louisiana. Based on these models, the “mixed system” concept is sometimes even further limited: civil law and common law must be the basic building blocks in the system; a mere mixture of laws does not suffice. Furthermore, this mixture is supposed to be exclusively western, rooted in the Romano-Germanic and Anglo-American systems.²¹

This restriction in the mixed system definition also chimes nicely with the segregationist overtone of the whole conception. First, it leaves out the whole area of indigenous customary laws of the “western” mixed jurisdiction of South Africa in the spirit of the Apartheid era—with which orthodox mixed systems scholars incidentally never really had a serious difficulty.²² Secondly, it is conceived as a bastion for the pure and superior civil law besieged by

20. A distinction between these two terms, as suggested in Esin Örüçü, *The Boundaries of Unity: Mixed Systems in Action*, 3(1) J. COMP. L. 1, 2 (2008), appears to me not fruitful.

21. Daniel Visser, *Cultural Forces in the Making of Mixed Legal Systems*, 78 TUL. L. REV. 47 (2003); VERNON PALMER, *MIXED JURISDICTION WORLDWIDE: THE THIRD LEGAL FAMILY* 8-9 (Cambridge U. Press 2001).

22. Compare Visser, *supra* note 21, at 74 (who at least discusses this problem briefly), with PALMER, *supra* note 21, at 8, 24 (who does not discuss this problem at all); see also Kenneth Reid, *The Idea of Mixed Legal Systems*, 78 TUL. L. REV. 18 (2003), who mentions positively the political changes in South Africa, but gives the wrong impression that there was almost no interaction of scholars and scholarship possible and happening before the fall of the Apartheid regime. For a more accurate picture of the appreciation (or not) of the customary laws in South Africa, see Caroline Nicholson, *Globalisation v Glocalisation: No Contest; Legal*

the surrounding common law that tries to water down or even eradicate the indigenous national civil law roots of the system in question.²³ The distinction between “purists” (civil lawyers), “pollutionists” (common lawyers²⁴) and “pragmatists,” which has sometimes been used to denote different types of scholars in their approach to their mixed system and the civil law component in it,²⁵ only underlines this segregationist attitude. The supremacist spirit in race, law and religion is palpable. The curious quest for purity in the law (in particular) means that the “mixed system” apostles do not actually want a mixture, but see themselves as valiant warriors against the “pollutionists.”²⁶

It has been said, however, that in the 1950s the orthodox mixed system movement was “born of fear for the future of the civil law tradition,” while now the current interest is “founded more on national self-discovery and self-confidence.”²⁷ Perhaps, but the boundary to an inward-looking narcissistic legal nationalism still seems blurred. Codification of the mixed private law, with implicitly turning to a civil law system by giving up the feature of the seemingly cherished civil law/common law mix, remains a popular project in any case.²⁸ Furthermore, in a strange contradiction to the identitarian nationalism that this *mixité* purports to represent and

Comparison, Mixed Systems and Legal Pluralism, 45 COMP. INT’L. L. J. S. AFR. 258, 263 (2012).

23. This description is of course pointed, but one may only look at the language deployed, *see e.g.*, Reid, *supra* note 22, at 21: “the civil law jewel in the common law setting;” *id.* at 18, n. 61: “the assimilators are well armed” (citing T. B. Smith).

24. That term “pollutionist” denotes “usually . . . Anglo-Americans (or English-speaking nationals) who, at least in the extreme cases, may only speak the English language and have only common-law legal training.” PALMER, *supra* note 21, at 32. This mirrors T. B. Smith’s extreme view that a mixed system is a civilian system that had been under pressure from the Anglo-American common law and has in part been overlaid by that rival system of jurisprudence, *see id.* at 7.

25. PALMER, *supra* note 21, at 32.

26. *See id.* at 33 and n. 46, Palmer concedes that “acrimonious and affective language has marred much of [mixed system] scholarship” and refers to critics pointing out that especially South African scholarship has been spoiled by emotional jingoism and chauvinism.

27. Reid, *supra* note 22, at 18.

28. *Id.* at 36.

maintain, particularly in Scotland, the mixed system is considered as a blueprint for harmonisation or unification of private laws across Europe.²⁹

What the actual mixed nature in each jurisdiction consists in, and how it is to be ascertained and understood, seems to be far more difficult to describe, and scholars start (and often finish) with an academic and general discussion about what mixedness means and implies.³⁰ In fact, an analytical study of the way in which that *mixité* manifests itself can prove rather complicated, may show contradictions in the mixed system conception and depends much on personal interpretation. As if seeking to avoid any doctrinal analytical study of their law, orthodox scholars of the mixed system idea often resort to lengthy discussions of the history and lore of famous academics who have studied here and there, have influenced this and that other great scholar, or have written this and that profound study within their legal system.³¹ Sometimes they also give an outline of past or present syllabuses of law degrees that apparently safeguard the law from descending into the abyss of the unsystematic and chaotic common law.³²

29. See, e.g., Hein Kötz, *The Value of Mixed Legal Systems*, 78 TUL. L. REV. 435, 436, 439 (2003); even scholars from outside mixed systems jurisdictions see the mixed systems as being in a good position to make an important contribution to the harmonisation of European law. That was in the early 2000s. After the financial crisis of 2009 and many other problems which the EU is preoccupied with, the project of a European Civil Code is presumably dead, and that should be welcomed; see Andreas Rahmatian, *Codification of Private Law in Scotland: Observations by a Civil Lawyer*, 8 ED. L. REV. 31, 54-55 (2004).

30. E.g., Reid, *supra* note 22, at 19-20; see also PALMER, *supra* note 21, at 7: "There has never been an accepted definition of a mixed jurisdiction and it would be premature to try to offer one here."

31. For Scotland, see Reid, *supra* note 22, at 8-17; including the usual lengthy description of T. B. Smith's academic career and the comment about T. B. Smith's mixed system activities and research, that "the impression lingers of a one-man band," *id.* at 15. For South Africa, see Visser *supra* note 21, at 54-56, 61-62; "the Dutch government and universities made it increasingly difficult for South Africans to study or do research in the Netherlands, perhaps because they felt that they particularly wanted to distance themselves from the sins of apartheid perpetrated by their kinsmen." *Id.* at 62.

32. Visser, *supra* note 21, at 59.

Civil law trained lawyers will notice that orthodox mixed system aficionados are much better versed in the workings of the unloved common law³³ than of the loved civil law, and they do not let their romantic love of codified private law in civil law systems being disturbed by actual civil lawyers' knowledge.³⁴ Unsurprisingly, a Roman law specialist would not want to have Celsus or Ulpian walking into his class either and tell him that they have a different recollection of their legal deliberations at the time and that the Digest is really an unreliable patchwork. The private and commercial law of Scotland at least is clearly bent towards the common law with considerable influence of civil law concepts and rules in certain areas. However, such a finding would be unwelcome, and so one carries on dreaming of some mystical civil law ideal, not irritated by reality, which confers comforting nationalistic identity and inward-looking difference, something lawyers are generally favourable to anyway, even without the crutch of a "mixed system" idea. This caricaturing portrayal of the orthodox and prevalent mixed system discussion only shows the difficulties one encounters when one seeks to determine the essence and purpose of that "mixed system" idea.

The defensive and chauvinistic tone of the mixed system debate may prompt a researcher to discard *this* kind of mixed system conception. Although it is the orthodox and prevalent conception, one may start questioning whether it has any scientific value at all. Leaving aside the unpleasant political overtones, the arbitrary definition of a legal system as a mix between common law and civil law potentially starts with a false premise, because before codification, the civil law was also a "common law." It was customary law, and, apart from the more formal court structure and decisions that could oper-

33. Reid also acknowledges this; see Reid, *supra* note 22, at 36.

34. See, *i.e.*, Rahmatian, *supra* note 29, at 31, demonstrating how one would have to go about the codification of private law for the purpose of a Scots Civil Code (generally a popular project among Scots mixed-system academics for preserving Scots law), although this article had no effect whatsoever in Scotland.

ate as precedents, it was a phenomenon not too dissimilar from African customary laws.³⁵ Nevertheless, it is telling that such a connection has been ignored: that only shows again a certain segregationist attitude in the scholarly approach. After the reception,³⁶ the *ius commune* was influenced by Roman law to a varying degree. This *ius commune*, especially the later *usus modernus pandectarum*,³⁷ was by no means uniform across the European continent (neither in space nor in time), although some adherents to the European legal unification project seem to assume this.³⁸ Taking one prototype of orthodox “mixed system” scholarship, Scots private law, one has to state that this is uncodified common law, in both senses of this term.

However, one need not give up on mixed system conceptions altogether. In case of a properly understood *mixité* the conceptual characteristics of the mix and its discussion can resemble alchemical features. The problem is that a rejection of the orthodox mixed system conception does not help determining what a mixed system is. Some say that mixed systems do not actually exist as a separate legal family, they are hybrid systems of existing legal families.³⁹ Others, however, regard all legal systems as mixed, covertly or overtly, a realistic starting point and therefore appealing.⁴⁰ There are variants of this view, for example, mixed systems have been defined as those with substantive attributes and methods derived from two

35. Andreas Rahmatian, *Termination of Marriage in Nigerian Family Laws: The Need for Reform and the Relevance of the Tanzanian Experience*, 10(3) INT'L J. L. POL'Y FAM. 281, 284, 309 n.11 (1996).

36. FRANZ WIEACKER, *A HISTORY OF PRIVATE LAW IN EUROPE* 71 (Tony Weir trans., Clarendon Press 1995).

37. *Id.* at 160.

38. Zimmermann Reinhard, *Savigny's Legacy: Legal History, Comparative Law, and the Emergence of a European Legal Science*, 112 L. Q. REV. 576, 576, 579-582 (1996).

39. KONRAD ZWEIGERT & HEIN KOTZ, *AN INTRODUCTION TO COMPARATIVE LAW* 72, 204 (3d ed., Tony Weir trans., Oxford U. Press 1998).

40. Esin Öricü, *What is a Mixed Legal System? Exclusion or Expansion?*, 3 J. COMP. L. 34, 35 (2008); H. PATRICK GLENN, *LEGAL TRADITIONS OF THE WORLD: SUSTAINABLE DIVERSITY IN LAW* 37 (3d ed., Oxford U. Press 2007).

or more systems generally recognised as independent of others.⁴¹ A broader approach finds the idea of the mixed system as a third legal family too constraining because that only adds another monolithic legal “family” to the civil law and common law families. It is also Eurocentric and does not take account of all sorts of other variants across the world.⁴² More open approaches to an interpretation of the mixed system phenomenon try to overcome a certain ethnocentricity (western, European), which can obviously be encountered in all debates within comparative law, not only in relation to mixed systems.⁴³

Legal systems are all combinations and overlaps of different influences; there are no purely “home-grown” legal systems. A classification of forms of mixes along a spectrum has been suggested, from a simple mix (or hybrids with civil and common law as their ingredient), to complex mixes (hybrids with civil law, common law, religious law and customary law in different combinations) and legal pluralisms (dualist systems with layers of law co-existing and applicable to different members of the population).⁴⁴ Legal pluralisms are a very important category for the African laws for example, with the academic distinction between indigenous customary laws, received/transplanted Western laws (common law if under the influence of the former British Empire), and where applicable, Islamic law (mostly according to the Maliki or Shafi’i Sunni schools). However, these seemingly clear layers of laws are also in a constant flux because of the socioeconomic interactions and changes in modern African societies. Therefore, customary laws are not neatly separated from other laws and not necessarily observed by indigenous peoples only.⁴⁵

41. Nicholson, *supra* note 22, at 265.

42. Örüciü, *supra* note 40, at 34-35.

43. PIERRE LEGRAND, *COMPARATIVE LEGAL STUDIES: TRADITIONS AND TRANSITIONS* 240, 260 (P. Legrand & R. Munday eds., Cambridge U. Press 2003).

44. Örüciü, *supra* note 40, at 38, 46, 51.

45. Anthony C. Diala, *The Concept of Living Customary Law: A Critique*, 49(2) J. LEGAL PLURALISM & UNOFFICIAL L. 1, 9-12, 15-16 (2017).

The discussion often employs interesting culinary or biological and horticultural metaphors. For example, the “Italian salad bowl” where the salad dressing covers the ingredients, but the (socio-culturally and legal-culturally different) ingredients are still clearly detectable (example: Algerian law); or: “When legal systems are considered as overlaps, combinations, marriages and offspring, terminology such as fertilisation, pollination, grafting, intertwining, osmosis and pruning can illuminate the processes of the birth of mixed systems.”⁴⁶

Culinary, horticultural or not, such metaphors are not too distant from alchemistic ideas. The mixed system idea (especially in its less Eurocentric form) presupposes a certain notion of oneness of a kind of philosophical matter called “law.” Neither the alchemists, indebted to platonic and neoplatonic (and subsequently Arab) thought, nor comparative lawyers, perhaps also, but inadvertently, influenced by (Neo)Platonism, are really clear about the nature of their metaphysical all-encompassing substance. However, comparative lawyers assume that every form of law can be combined with every other form of law in principle, regardless of socio-cultural and legal-cultural similarities and differences because they are varieties of the same oneness. This is similar to what the *Emerald Tablet* (or *Emerald Table*)⁴⁷ says that was highly influential in the development of alchemy, although the connection with the sun, the moon, and the planets is not something that lawyers would agree with.⁴⁸

46. Örüci, *supra* note 40, at 39, 47.

47. Eric John Holmyard, *The Emerald Table*, 112 *NATURE* 525, 526 (1923); *see also* PRINCIPE, *supra* note 1, at 32.

48. At any rate, modern lawyers would not agree. In the Middle Ages, the Renaissance, and until the beginning of the eighteenth century, it was commonly assumed that all laws ultimately derive from God and man-made laws could not contradict these (Christian natural law theory), and that God created the world with everything being propelled according to (God’s) natural laws (that is, the laws of nature, like the celestial mechanics). At that time, Christian alchemists and lawyers were not far apart. There were of course alchemists who were lawyers, and some colorful figures and rogues, like the English alchemist Edward Kelley (1555-1597), who was John Dee’s assistant. *See* HOLMYARD, *supra* note 2, at 206-208; but it would be necessary to determine whether their legal writings (if any) were noticeably influenced by alchemist conceptions.

This ubiquitous substance is a notion of the *pneuma*,⁴⁹ and law imbued with *pneuma* is living law, changing under cultural and legal influences—influences which may create a *mixité*. The shortcomings of the orthodox scholarship on mixed systems become apparent again: the orthodox approach is static in that it seeks to preserve defensively a perceived *status quo* of a certain accepted mixedness to maintain legal (and political) identity or even to reverse the mixedness to return to the purportedly purer and superior original system, usually a civil law system. A modern understanding of mixed systems will always emphasise the continual fluidity and change: law is living, imbued with *pneuma* or “spirit.” That “spirit” constitutes the socio-cultural force that shapes and changes laws and influences the type and level of mixedness over time.⁵⁰ Where the mixedness is close, the ingredient laws either “react” and become a new chemical compound, or, if it is less close, form an alloy or a chemical mixture or solution. The mixture of different laws is least advanced in case of a heterogeneous mixture, where the components remain discernible, like water and oil: many versions of legal pluralism would be examples of this phenomenon. In comparative law, one also finds notional compounds that are mixed with components and form together a heterogeneous mixture. There are many other varieties. Nonetheless, different from the modern chemist, the comparative lawyer will find it difficult to break down all the components to elements out of which all matter is made. Theoretically one reduces, for example, the aspects of a formation of contract, a kind of legal molecule, to certain forming atoms (offer, declaration of will) and sees how these elements appear in different legal systems. There are such endeavours, especially in view of harmonisation projects of private law across Europe, and not necessarily convincing ones.⁵¹ It

49. TAYLOR, *supra* note 3, at 16.

50. *E.g.*, Öricü, *supra* note 40, at 47.

51. *E.g.*, Anon., *The Common Core of European Private Law*, 4(4) UNIF. L. REV. 937, 937 (1999); *see also* THE COMMON CORE OF EUROPEAN PRIVATE LAW, <https://perma.cc/BB49-GVFE>.

is also easier to find such “atoms” if the variations of laws are limited, because the study confines itself to Europe only, for example.

Comparative lawyers, especially if they want to avoid the trap of Eurocentrism or ethnocentrism, are normally compelled to take a more holistic view and find themselves on the side of the alchemists by assuming philosophical-comprehensive substances or “legal systems,” like the Aristotelian four elements⁵² or the seven metals, such as Patrick Glenn’s seven principal legal traditions of the world.⁵³ Sometimes the seven metals are reduced to two in the narrow traditional interpretation of mixed systems as a mix between civil and common law systems only (are these the noble metals gold and silver?). However, the number does not matter, important is the idea of an ultimately metaphysical substance, the legal system, the legal tradition, the legal culture, even “legal science,”⁵⁴ a concept that defies clear definition, particularly as natural science would understand it, like “philosophical mercury”: alchemists often used the terms “philosophical mercury” or “philosophical sulphur” where the ingredients were not mercury or sulphur, but were supposed to act like these, because these two elements (in a modern chemical sense) were commonly used as agents for changes (chemical reactions).⁵⁵

In relation to changes, what about the philosophers’ stone and transmutation? Here the mixed system conceptions also show certain similarities. As discussed, the philosophers’ stone is as much a metaphysical concept as a chemical reality. The stone was often

52. ARISTOTLE, ON THE HEAVENS [304a]. Obviously, Aristotle did not invent this idea of the four elements, but referred to earlier Greek philosophers.

53. GLENN, *supra* note 40, at 344.

54. The reason why “legal science” is mentioned here is that the description of the law always has a prescriptive or normative effect and, therefore, shapes the object of description through the description, as one would expect from law as a hermeneutic-historical normative science; on the hermeneutical method in comparative law, *see, e.g.*, GEOFFREY SAMUEL, AN INTRODUCTION TO COMPARATIVE LAW THEORY AND METHOD 108 (Hart Publ’g 2014). The natural scientist, particularly the astronomer, can only describe the existing laws of the planetary movements: whether he describes these laws or not or describes them wrongly, has no influence whatsoever on the revolutions of the planets.

55. PRINCIPE, *supra* note 1, at 122.

seen as acting as a purging fire that burned out the impurities from base metals that prevented them from becoming pure gold. Other authors, more in the Aristotelian line of thinking,⁵⁶ considered the stone as containing the (Aristotelian) form of gold already which, when projected onto a base metal, replaced the original form with that of gold.⁵⁷ As Petrus Bonus describes⁵⁸:

But we only just melt the imperfect metals over the fire, and then add to them the philosophers' stone, which, in a moment of time, imparts to them the form of gold, thus changing and ennobling their nature, and conserving their own proper metallic humour.

That procedure is always a completion and perfection of nature, not a change to nature's course.⁵⁹ There were many possible ingredients of the philosophers' stone—mercury and sulphur being the most common⁶⁰—but the method of making the stone was rather similar: heating the mixture, for a long time with equal temperature, in a glass vessel with a long neck being “hermetically sealed,” and if that did not explode (a rather common accident), then various other treatments, especially reheating of the black, later white, finally red mixture (“red elixir”) followed.⁶¹

It may come as a surprise, or may even create slight irritation, that “mixed system” scholarship effectively operates along similar lines. There is this indefinite and ambiguous change between form and substance, between ingredient and “elixir” or “philosophers' stone.” When two legal cultures are mixed, does that create a new legal system with a new legal culture? What is the legal culture: an

56. ARISTOTLE, METAPHYSICS [1039a-1039b].

57. PRINCIPE, *supra* note 1, at 126.

58. PETRUS BONUS, *supra* note 7, at 154.

59. *Id.* at 153.

60. Also as a philosophical concept, *see e.g.*, PETRUS BONUS, *supra* note 7, at 312: “there is but one Philosophers' Stone . . . Its external sulphur of vulgar quicksilver is foreign to it; its inward sulphur belongs to its own nature, and into this it must be converted by our magistry.”

61. Description by PRINCIPE, *supra* note 1, at 123-124.

ingredient? Or, is the elixir like “philosophical mercury and sulphur”? Mixes are obviously also processes, as chemical processes are, only that the lawyers cannot really ascertain them, and nor could the alchemists. Some mixes explode (dysfunctional hybrids where a transplant of laws does not work⁶²), some lead to phenomena that are open to different interpretation (e.g., in Scotland: mix of civil law and common law or encroachment of historical civil law by common law), similar to the speculative and equivocal recipes of alchemists, which can be extremely difficult to interpret and recreate, even where they were real recipes.⁶³

Sometimes legal mixes are considered as transmutations, as incorrectly as in alchemy. Sometimes transmutations are not seen as the important issue. In alchemy, many alchemists regarded making gold through transmutation (*chrysopoeia*) as the highest and ultimate goal,⁶⁴ while Paracelsus, for example, showed little interest in transmutational gold making.⁶⁵ In comparative law, the representatives of a comparative legal science who compare legal systems and their mixes for the purpose of transnational legal unification seek to exercise some transmutational work out of the ingredients, and the thick commentaries of European law projects of various kinds may serve as a kind of philosophers’ stone, and are as inefficient as the real one in alchemy.⁶⁶ In contrast, the particularists⁶⁷ who strongly oppose legal unification, often start out from a mystical oneness in their diversity, that there is the substance, in many differences, but

62. Burkina Faso and Micronesia are examples given by Öricü, *supra* note 40, at 47.

63. For a description of testing alchemists’ recipes by modern chemists, see PRINCIPE, *supra* note 1, at 140-143.

64. PRINCIPE, *supra* note 1, at 13.

65. HOLMYARD, *supra* note 2, at 170.

66. E.g., *Study Group on a European Civil Code*, HWP-EuP 2009, <https://perma.cc/SM8R-RWAZ>; see also, e.g., CHRISTIAN VON BAR & STEPHEN SWANN, *PRINCIPLES OF EUROPEAN LAW: UNJUSTIFIED ENRICHMENT* vii-ix (Oxford U. Press 2010); see also Ole Lando, *Have the PECL Been a Success or a Failure?*, 17(3) EUR. REV. PRIV. L. 367, 367 (2009).

67. See Pierre Legrand, *Against a European Civil Code*, 60(1) MOD. L. REV. 44, 44 (1997).

still discernable, of a *Volksgeist*, a national character which shapes the national laws, a legal *mentalité*. Transmutation to a new, higher substance (unified law) is not desired, but the existence of this mystical substance is postulated: a distinct (immutable?) culture, a law imbued with this culture, which in this way adopts a distinct legal *mentalité*, so that supposedly not even legal transplants are possible.⁶⁸ The form is contained in the existing culture, a form that can only be found in other phenomena, but never changed, only perfected through the scholar's "great work," except through violence in form of cultural imperialism, as (transmutational) legal unification would be. When reading about the same and the different and its relationship to the "oneness" in comparative law, perhaps obscured by impurities of postmodernism,⁶⁹ one cannot help thinking of the scholarly occult and esoteric, which always accompanied alchemy as well, and one feels reaching out for the *Emerald Tablet*: "That which is above is from that which is below, and that which is below is from that which is above, working the miracles of one. As all things were from one."⁷⁰

There is a further quite uncomfortable parallel: the search for the philosophers' stone in alchemy as well as in comparative law is futile. Alchemy discovered many useful substances and reactions on its way, but metallic transmutation is chemically impossible. Equally, one can make shadowy, ethereal comparisons of legal systems, but a transmutational legal unification is impossible, as much as it is impossible to ascertain an irreducible difference distilled as a quintessential mystical substance called legal culture, legal tradition, legal *mentalité* or national character—another version of the "*pneuma*." It appears that this substance is somehow unalterably engrained in "nature," and the lawyer with his art can only bring out and complete the work of nature, but cannot create anything anew.

68. See Pierre Legrand, *The Impossibility of "Legal Transplants,"* 4 MAASTRICHT J. EUR. & COMP. L. 111, 111 (1997).

69. See, e.g., LEGRAND, *supra* note 43, at 256-260.

70. Holmyard, *supra* note 47, at 526.

In actual fact, the legal *mentalité* or national character becomes dissolved in the *aqua regia* of intellectual history, like gold.

As a particularist myself who does not see anything beneficial in the necessarily crude unification of legal systems, for example in the form of codified European private law, I nevertheless maintain that there is no “natural” immutable legal *mentalité* or culture or (legal) tradition or national character. These phenomena do exist, but they are entirely man-made; they do not derive from a mystical source, an alchemistic brew of culture, tradition, language, education, art and so forth.⁷¹ Education and art already indicate a man-made origin. Any kind of culture, including legal culture can be created in a deliberate or directed way, through education, political activity, propaganda, forces of modern society, which shape and are shaped by politics, historical accidents, wars, the media and other political and social factors. There is no *deus ex machina* and no *pneuma* or spiritual force emanating from, and transcending, “the people.” This also has to be taken into account when one relies on Herder’s ideas of “national character” or distinct culture, which are otherwise fruitful for comparative law.⁷² Traditions are “invented” and arbitrary, often accidental, and there is nothing deterministic or immutable about it, neither from a biological nor from a cultural perspective. This is particularly true of legal traditions, because the most principal sources of law, statutes and court decisions, are indeed rules deliberately created by human will. The forms and methods of solutions adopted by these legal rules are culturally shaped, but not culturally determined, and each law can deliberately and arbitrarily break from, and contradict, a tradition at any time: there is no ascertainably “true” tradition in law. David Hume rightly observed that “it may safely be affirmed that jurisprudence is . . . different from all the sciences; and that in many of its nicer questions,

71. Rahmatian, *supra* note 18, at 918.

72. See Rahmatian *supra* note 18, at 918-919; see also LEGRAND, *supra* note 43, at 265-268. Legrand does not take these differentiating factors into account when invoking Herder.

there cannot properly be said to be truth or falsehood on either side.”⁷³

As a result, legal traditions, their *mentalité* and their *mixité* change, and necessarily so, either through deliberate acts or through the more or less uncoordinated doings of a great number of humans shaping the law through its making and application over the course of history. Therefore, legal transplants can exist and they do exist very often. However, the interpretation as to what legal transplants really are also contains some alchemistic thinking.

V. ALCHEMISTIC PROCESSES: RECEPTION OF LAWS AND LEGAL TRANSPLANTS

The discussion about the possibility of legal transplants is well-known⁷⁴ and need not be restated at length. Some say that transplants and massive and continuing borrowing of rules and institutions were the prevalent features in the development of legal systems. Legal transplanting and legal borrowing (an equivalent term) help explain reasons for legal change, and different types of transplants can be discerned.⁷⁵ The other extreme view is the complete rejection of the possibility of legal transplants. If legal transplants are said to exist and to account for change in the law, this argument must “unavoidably reduce law to rules and rules to bare-propositional-statements,” and rules are then wrongly considered as solitary and detached from power and the divergent interests in society.⁷⁶ Both views ignore the variability of these “abstract” legal rules in

73. DAVID HUME, ENQUIRIES CONCERNING THE HUMAN UNDERSTANDING AND CONCERNING THE PRINCIPLES OF MORALS 308 (2d ed., Sir Lewis Amherst Selby-Bigge ed., Clarendon Press 1963).

74. For discussion, see MATTHIAS SIEMS, COMPARATIVE LAW 195-200 (Cambridge U. Press 2014); see also the brief helpful summary by Esin Öricü, *Law as Transposition*, 51 INT'L & COMP. L. Q. 205, 206 (2002).

75. ALAN WATSON, LEGAL TRANSPLANTS. AN APPROACH TO COMPARATIVE LAW 29, 107 (U. of Georgia Press 1993); see also Alan Watson, *Legal Transplants and European Private Law*, 4 ELEC. J. COMP. L. § VI (2000).

76. Legrand, *supra* note 68, at 120.

different cultural environments too much. In which way the distillation of legal cultures and a legal *mentalité* appears in a specific legal rule or legal institution cannot be determined clearly in the first place, and how it manifests itself in the new cultural and legal environment depends on all sorts of social, political and generally cultural factors, as one can see in the reception of English common law in Anglo-Muslim law in Pakistan or in legal systems in Commonwealth Africa, for example. The comparative lawyers of both sides have no real idea of the constituent elements, as a modern chemist would however have, but rather have a vague and philosophical-speculative, not primarily empirical, understanding of the chemical compounds as a means for perfecting the “great work” in philosophical-religious-cultural terms (or they claim that this is impossible), like the old alchemists.⁷⁷ They do not appreciate the chemical reactions the transplanted matter has with the new cultural substances.

A more practical and realistic solution between these two extremes has been proposed, the “legal transposition.” This metaphor from music stresses that “[e]ach legal institution or rule introduced is used in the system of the recipient, as it was in the system of the model, the transposition occurring to suit the particular socio-legal culture and needs of the recipient.”⁷⁸ Nevertheless, this metaphor from music also has its shortcomings. In a transposition, neither the intervals between the notes, nor the harmony, melody and the rhythm are changed in any way. If one transposes a piece in a-minor to e-minor, it is the same piece, a fifth higher (or a fourth lower), nothing else. Far more happens if there are legal transplants or receptions of laws, and if one pursues that musical metaphor, then one would have to compare these situations of legal receptions (a better term anyway) to a set of different variations over an invariant ground bass, for example, like a chaconne. What that legal equivalent to the constant ground bass really is—the constituent invariable essence or

77. TAYLOR, *supra* note 3, at 178-179.

78. Örüciü, *supra* note 74, at 207.

element—can be described more accurately with an alchemistic metaphor.

The alchemists were never clear about what exactly made a philosophers' stone—mercury and sulphur seemed to have played a central role—but they knew, for example, that mercury and sulphur can react with each other, which can produce cinnabar (mercury sulphide, HgS) known since antiquity as a red ore for making a red pigment (vermillion) and for obtaining pure mercury. The alchemists did not know that mercury and sulphur were “elements” in the modern chemical sense, but they knew of the chemical reaction and they knew how to extract liquid mercury (through roasting crushed cinnabar in kilns). In a similar way, the transplant or transposition of a legal rule or institution leads to certain changes or “reactions” in the receiving legal system, and although one may not know what the legal “elements” of these legal rules are, one can use these rules for legal change or “reaction.” The principal difference is that the alchemist or chemist is bound by natural laws, which he only makes use of; he has no influence over them and the chemical reaction happens necessarily according to these laws. The lawyers, however, have all possible influences over the “reaction” the imported legal rules are supposed to effect, for law making through borrowing is as man-made as indigenous law-making. A practical problem is that lawyers do not necessarily appreciate the (presumed) meaning of the borrowed laws and may therefore not foresee unintended consequences, but the fact that effects of human endeavours are not fully understood by humans themselves does not mean that they are subjected to natural laws. Every sociologist can attest to that.

Another reason why comparative lawyers also think more like alchemists rather than like modern chemists is that lawyers (especially in the common law world) have a clear aversion against the idea of a legal science and analysis which would elicit, distil or crystallise legal elements or legal “bricks” that can operate in different

legal and cultural settings, though frequently with different effects.⁷⁹ It is an overstatement, and often plainly wrong, to consider legal rules and institutions in their entirety as completely and inseparably connected to their original cultural, political, social and linguistic context. There is nevertheless the frequent claim that law is tied to a particular legal system, and apparently there cannot be any possibility for abstraction that transcends the concrete example of a specific jurisdiction.⁸⁰ If humans had always thought like that, we would not be able to learn foreign languages and mathematics would never have come into existence. In fact, subconsciously and unacknowledged, all lawyers effectively abstract when they adapt foreign legal rules and institutions to their own legal system.⁸¹

The result of these distorting interpretations of legal transplants is that those who do not cope with difference drive forward legal unification, those who adore difference deny any abstraction that may detach the concept from its (Western) cultural background (remember: the abstraction of the so-called Arabic numerals and the number zero were invented in non-Western India), and even the common-core seekers tend to be wrong-headed despite their potentially acceptable starting point: their endeavours are also designed to achieve seemingly effective large-scale unification, which makes individual receptions and transplants superfluous in the future, as if that were possible or desirable. What all these lawyers have in common is that they work, quite scientifically and practically, in their legal laboratories to give effect to a non-empirical speculative phil-

79. A rare early example that sought to distill such general legal concepts, principles or elements, though with no practical effect, can be found in LORD KAMES, HENRY HOME, *ELUCIDATIONS RESPECTING THE COMMON AND STATUTE LAW OF SCOTLAND* (W. Creech ed. 1777).

80. The real reason for this common attitude among lawyers is not the supposed purely indigenous cultural uniqueness of their legal system, but the attempt at retaining a monopoly in the local legal profession that keeps out the competition of lawyers trained in a different legal system.

81. For a discussion on transplantations and their problems and effects, see Otto Kahn-Freund, *On Uses and Misuses of Comparative Law*, 37 *MOD. L. REV.* 1, 7-8, 12, 17-18 (1974).

osophical or religious all-encompassing concept that defies scientific proof, as it was with the old alchemists. Nevertheless, the alchemists were aware of that, while the modern lawyers are not.

VI. CONCLUSION

This article is an example of the history of ideas; it does not suggest that comparative lawyers must become hobby alchemists to understand their own discipline better. However, the discussion has shown that the ways of thinking and argumentation by comparative lawyers in relation to mixed legal systems and legal transplants have much in common with the concepts of natural philosophy and their practical application by the alchemists until the early eighteenth century. Law is an eminently practical discipline, like alchemy, and has at the same time a philosophical-speculative underpinning, like alchemy with its underlying natural philosophy that is largely absent in the modern natural sciences. This speculative quality makes law part of the arts and humanities, and where we have interactions between different “matter” in a philosophical sense, such as different legal institutions or whole legal systems in comparative law, we reach the terrain of metaphorical alchemistic reactions and processes.

Comparative lawyers fear to be foxes and want to be hedgehogs: they want *one* all-embracing theory of unification or *one* theory of total immutable difference throughout history. They do not want to realise that difference itself is changing like an unstable chemical compound. Sometimes there is more convergence and sometimes more divergence, a divergence that cannot be solidified as an unchangeable fact or, in contrast, denied altogether. The mixedness of mixed systems is equally unstable. The laws and their mixes are always changing, like the living and breathing bodies of the humans who make them, and they do appear as metaphorical examples of

alchemistic metamorphosis. As was said in an important book of alchemy from the thirteenth century, with the title *Book of Hermes* foreshadowing Francis Bacon⁸²:

Human works are variously the same as natural ones, as we shall show in fire, air, water, earth, minerals, trees, and animals. For the fire of natural lightning and the fire thrown forth by a stone is the same fire But the artificial are even better than the natural The natural wild tree and the artificially grafted one are both trees Nor does art do all these things; rather it helps nature to do them. Therefore the assistance of this art does not alter the natures of things. Hence the works of man can be both natural with regard to essence and artificial with regard to mode of production.

We cannot create life, as particularly the Paracelsian alchemists believed, but we can recognise that the artificial products of human thought, such as law, may be as mutable as the living creatures of nature.

APPENDIX

AN OUTLINE OF THE DEVELOPMENT OF NOTIONS OF ALCHEMY UNTIL THE BEGINNING OF MODERN SCIENTIFIC THINKING

Alchemy did not start with Aristotle, but some of Aristotle's texts on the constitution of matter contained central concepts alchemy would take up,⁸³ especially passages of *On the Heavens* and of *On Generation and Corruption*, stating that there are four elements with connected properties (fire—hot and dry, air—hot and moist, water—cold and moist, earth—cold and dry),⁸⁴ and there can be mutual transformation of the elements.⁸⁵ Particularly important

82. WILLIAM NEWMAN, *NATURAL PARTICULARS: NATURE AND THE DISCIPLINES IN RENAISSANCE EUROPE* 321, 324-325 (A. Grafton & N. Siraisi eds., MIT Press 1999).

83. HOLMYARD, *supra* note 2, at 21.

84. ARISTOTLE, *ON GENERATION AND CORRUPTION* [330a-330b].

85. ARISTOTLE, *supra* note 52, at [304b-305b].

was the fourth book of Aristotle's *Meteorologica*,⁸⁶ a largely unknown text today because it is contradicted by modern science in practically every point. This is partly also the result of the fact that the Greek philosophers observed and speculated upon observation, but they did not experiment. The fourth book is important for alchemy, because it discusses processes of change in the four elements ("generation" and "destruction"/"decay," whereby the properties of the elements, hot and cold are "active," moist and dry are "passive"); these concepts shall also explain the processes living creatures undergo (growth, decay/rot).⁸⁷ The effect of heat is concoction (an idea of maturity, produced by heat, it comprises the forms of ripening, boiling and roasting), while cold leads to inconcoction (comprising rawness, scalding and scorching).⁸⁸ Aristotle discusses further the outside effects on various combinations of properties of the four elements, for example boiling⁸⁹:

Boiling, as a general term, is concoction by moist heat of the undetermined material present in the moisture of a thing, but the term is properly applicable only to things cooked by boiling. This material . . . is either of an airy or watery nature. The concoction arises from the fire in the moisture . . . Bodies which contain no moisture, like stones, cannot [be boiled], nor can bodies which contain moisture but which are too solid for it to be mastered, like wood.

This conceptual, metaphorical, and symbolic classification of matter and its transformations was profoundly influential on what was later to become alchemy and its notions, imagery, symbolism and mysticism.⁹⁰ The important idea is that matter can transform: in the Middle Ages and the Renaissance, the Aristotelian concept of transformation and change by nature or by force (through an agent

86. WILLIAM NEWMAN, *ATOMS AND ALCHEMY: CHYMISTRY AND THE EXPERIMENTAL ORIGINS OF THE SCIENTIFIC REVOLUTION* 67 (U. of Chicago Press 2006).

87. ARISTOTLE, *METEOROLOGICA* [378b-379b].

88. *Id.* at [379b-380a].

89. *Id.* at [380b] (Translation of this passage by H. D. P. Lee).

90. For typical images, see ALEXANDER ROOB, *THE HERMETIC MUSEUM: ALCHEMY & MYSTICISM* 405-406 (Taschen 2016).

outside the body itself) did not only concern matter, but also mathematics and music.⁹¹ In every case, the idea of change or metamorphosis contains the kernel of alchemist transmutation. Another passage, from Book III of the *Meteorologica*, makes this even more apparent⁹²:

[E]ffects produced by exhalation . . . when enclosed in the parts of the earth . . . [are] two different kinds of body, being itself twofold For there are, we maintain, two exhalations, one vaporous and one smoky; and there are two corresponding kinds of body produced within the earth, 'fossils' [here: minerals or stones] and metals. The dry exhalation by the action of its heat produces all the 'fossils' Metals are the product of vaporous exhalation.

This exhalation or vapour comes from the spirit (*pneuma*) that also encompasses matter and is the active principle of all things.⁹³ These vapours pass through stone and, when they condense, they can form metals. Later, the alchemists based the idea of transmutation on this thought; they then also considered "dry vapour" as meaning sulphur and "moist vapour" denoting mercury; from that the alchemist theory derives that all metals are made of mercury and sulphur.⁹⁴ However, these two substances were not necessarily the true chemical elements, but also other material, therefore the term "philosophical mercury/sulphur" was often used.⁹⁵ As many alchemists operated in secrecy they frequently used cover-names, by naming substances with (confusingly) different names or by using allegorical expressions, which makes it very difficult to decipher old

91. PETER PESIC, *MUSIC AND THE MAKING OF MODERN SCIENCE* 44-45, at 74 (MIT Press 2014).

92. ARISTOTLE, *supra* note 87, at [378a].

93. See Theophrastus Paracelsus, Archidoxis, Book 4, in *DER HIMMEL DER PHILOSOPHEN* 27 (Greno 1988): "The quinta essentia is namely the life spirit of the thing" (and can therefore not be extracted from living creatures, only from matter).

94. TAYLOR, *supra* note 3, at 20-21; see, e.g., PETRUS BONUS, *supra* note 7, at 187.

95. PRINCIPE, *supra* note 1, at 122.

alchemist instructions today.⁹⁶ There were several variants to the principle of these two fundamental substances; Paracelsus, for example, said that all metals derive from mercury, sulphur and salt.⁹⁷

The all-embracing *pneuma* or breath⁹⁸ (for living creatures the “breath of life”) emphasised the idea of oneness, an idea which also appears in the concept of there being one underlying substance beneath the constantly changing appearance of things: most Greek philosophers adopted this idea of monism.⁹⁹ The substance or changing things were not the *pneuma* itself, but matter imbued with *pneuma*. That aspect of oneness is central to one of the earliest texts of alchemy, the *Emerald Tablet* attributed to *Hermes Trismegistus* (The thrice-blessed Hermes), a neoplatonic text probably from the second or third century CE, in Arabic, but of Greek-Egyptian origin.¹⁰⁰ A passage of the Table reads¹⁰¹:

As all things were from one. Its father is the Sun and its mother the Moon Feed the Earth from that which is subtle, with the greatest power. It ascends from the Earth to the heaven and becomes ruler over that which is above and that which is below.

This legendary “Hermes” was also understood to be the Egyptian god Thoth, corresponding to the Greek god Hermes, the messenger between the gods and mortals. The obscure text is a central

96. See PRINCIPE, *supra* note 1, at 146-152, who has tried (successfully) in a laboratory some of alchemistic allegorical descriptions which are, and are to be understood as, chemical processes.

97. Paracelsus, *Über die Natur der Dinge*, Book 1, in DER HIMMEL DER PHILOSOPHEN, *supra* note 93, at 101.

98. On that notion in Greek philosophy in the context of alchemy, see PRINCIPE, *supra* note 1, at 16.

99. PRINCIPE, *supra* note 1, at 14.

100. PRINCIPE, *supra* note 1, at 30; HOLMYARD, *supra* note 2, at 97; see FRANCES YATES, *GIORDANO BRUNO AND THE HERMETIC TRADITION* 2-6, 13, 18 (Routledge 2002), on the various hermetic writings (especially the “*Poemandres*” or *Pimander*, in Greek, being the “*Corpus Hermeticum*”) under the name of *Hermes Trismegistus*, which were translated in the Renaissance by the philosopher Marsilio Ficino in 1463. The *Pimander* was very influential on the Renaissance humanists. The *Emerald Tablet* is not contained in the *Pimander*, and it only exists in Arabic, although an original Greek version is likely.

101. Holmyard, *supra* note 47, at 526 (translated from the Arabic). There were several variants, see, e.g., HOLMYARD, *supra* note 2, at 98.

source for alchemic ideas and the well-known imagery of many alchemistic pictures in later periods. The text and other hermetic writings under the name of *Hermes Trismegistus* were particularly influential on Renaissance alchemy. It contains elements of the macrocosm or celestial world, of the microcosm or terrestrial world, the connection of the substances with the stars and planets, and emphasises the monist idea (“all things were from one”).¹⁰² That idea of oneness is also the basis for the alchemistic thought that the precious metal is already contained in the base metal; the alchemist does not create new substances, but only completes nature.¹⁰³ This completion would be effected particularly by the philosophers’ stone, which was the “it” (“Its father is the sun . . .”) for the alchemists.¹⁰⁴ There were numerous interpretations of the *Emerald Tablet* in alchemistic texts over the centuries.¹⁰⁵

However, this is not to say that alchemists were necessarily speculative mystics; many were not. They were early experimenters and virtually the only laboratory workers, contrary to the ubiquitous Aristotelian speculative natural philosophy in the Middle Ages and the Renaissance, and in this regard preceding Francis Bacon’s appeal for research experiments and his emphasis on the inductive syllogism.¹⁰⁶ As early as in the 1330s, Petrus Bonus said in his *New*

102. PRINCIPE, *supra* note 1, at 32; *see also* ROOB, *supra* note 90, at 9-10, 44, 171.

103. *See* PETRUS BONUS, *supra* note 7.

104. PRINCIPE, *supra* note 1, at 32.

105. *See*, for example, the commentary on the *Emerald Tablet* (*Schmaragd Tafel*) of the seventeenth-century German alchemistic text *Von den verborgenen Philosophischen Geheimnissen der heimlichen Goldblumen und Lapidis Philosophorum* [On the hidden philosophical secrets of the cryptic flowers of gold and the philosophers’ stone], together with a characteristic alchemistic image, ANON., OCCULTA PHILOSOPHIA: VON DEN VERBORGENEN PHILOSOPHISCHEN GEHEIMNISSEN DER HEIMLICHEN GOLDBLUMEN UND LAPIS PHILOSOPHORUM 50 (Johann Bringern ed. 1613); and the image of “the complete work of the philosophers” (*Das gantz Werck der Philosophen*), *id.* at 70.

106. FRANCIS BACON, THE PHYSICAL AND METAPHYSICAL WORKS OF LORD BACON, INCLUDING THE ADVANCEMENT OF LEARNING AND NOVUM ORGANUM 8-14, 384-386 (Joseph Devey ed., George Bell & Sons 1886).

Pearl of Great Price that¹⁰⁷:

[T]he vulgar herd are of necessity led to regard the Alchemist as a kind of sorcerer or magician I stoutly maintain that the Art of Alchemy is clear and true, and founded upon Nature; that its products are as truly silver and gold as the precious metals which are produced in the bowels of the earth

Early “proper” chemistry, at any rate from the Renaissance period, was not a mystical secret, but the mastery of rules about chemical procedures and the organisation of this knowledge and a standardised terminology, so by no means “unscientific.” Perhaps the first examples of that systematic approach were Andreas Libavius’s (c. 1555-1616) influential publications, especially his letters on chemistry.¹⁰⁸ Where the alchemists conducted practical experiments and developed laboratory equipment (with distilling, separating¹⁰⁹ as a central method¹¹⁰ or the sealing of flasks or crucibles¹¹¹ for burning metals or boiling substances, hence the expression “hermetically sealed”¹¹²), they were indeed the direct predecessors of modern chemists.¹¹³ The experimental artisanal (and dirty) side of alchemy (or chemistry) was a main reason why alchemy did not obtain the university status of mathematics, physics and astronomy in the Middle Ages.¹¹⁴ Lavoisier, who is considered to be the founder of modern chemistry, unsurprisingly described in his *Traité élémentaire de*

107. PETRUS BONUS, *supra* note 7, at 102-103. *See also* PETRUS BONUS, *supra* note 7, at 51-52: “Alchemy resembles other arts in the following respect, that its practice must be preceded by theory and investigation; for before we can know how to do a thing, we must understand all the conditions and circumstances under which it is produced.”

108. BRUCE MORAN, *DISTILLING KNOWLEDGE: ALCHEMY, CHEMISTRY AND THE SCIENTIFIC REVOLUTION* 8-9, 100-102 (Harv. U. Press 2005).

109. Chemical separation (*Abscheiden, Scheidung*) is a central concept for Paracelsus, *see id.*, at 72; *see also* PRINCIPE, *supra* note 1, at 141.

110. MORAN, *supra* note 108, at 11-15; *see also* TAYLOR, *supra* note 3, at 40.

111. The name of such vessels has a theological origin: the melting, burning, grinding, vaporizing were seen as “tortures” of the metals, like the tortures and crucifixion of Jesus (crucible has the Latin root of *cruciare*), *see* PRINCIPE, *supra* note 1, at 69.

112. PRINCIPE, *supra* note 1, at 123.

113. TAYLOR, *supra* note 3, at 146.

114. PRINCIPE, *supra* note 1, at 85-86.

chimie (1789) experimental practices that derived from alchemy, such as weighing, pulverisation, filtration, decantation, evaporation, crystallisation, distillation, sublimation, and so on.¹¹⁵ The theoretical side of modern chemistry started especially with Robert Boyle¹¹⁶ who was influenced by the atomism of the earlier German physician and alchemist Daniel Sennert.¹¹⁷

Influences of Alchemistic ideas, not only the practical-mechanical side, but also the philosophical side, were strong in the Early Modern period, but they can be traced to the present day. The importance of Hermetic thinking (which shaped Alchemistic thought) for Giordano Bruno, Marsilio Ficino¹¹⁸ and Giovanni Pico della Mirandola, to name some important philosophers of the Renaissance, is well known.¹¹⁹ Galileo was not much interested in the alchemistic idea of the oneness of the microcosm and the macrocosm, for he devoted his studies to the movement of the heavenly bodies. However, his demonstration that the heavenly bodies appeared to be of terrestrial material¹²⁰ was in some way returning to the alchemistic thought of oneness, and at the same time departing from it, because the argument of heavenly bodies being of terrestrial material stands

115. ANTOINE-LAURENT LAVOISIER, *ELEMENTS OF CHEMISTRY IN A NEW SYSTEMATIC ORDER, CONTAINING ALL THE MODERN DISCOVERIES*, Part III 291, 295, 357, 363, 365, 375, 379, 384, 388 (William Creech ed., Robert Kerr trans. 1790) (description of the instruments and operations of chemistry).

116. Robert Boyle, *The Sceptical Chymist*, in 2 *THE WORKS OF ROBERT BOYLE: THE SCEPTICAL CHYMIST AND OTHER PUBLICATIONS OF 1661* 205, 218-223, 229-233 (Michael Hunter & Edward B. Davis eds., Pickering & Chatto 1999); see also ARTHUR L. DONOVAN, *PHILOSOPHICAL CHEMISTRY IN THE SCOTTISH ENLIGHTENMENT: THE DOCTRINES AND DISCOVERIES OF WILLIAM CULLEN AND JOSEPH BLACK* 102-106 (Edinburgh U. Press 1976).

117. NEWMAN, *supra* note 86, at 160.

118. Marsilio Ficino translated fourteen treatises of the *Corpus Hermeticum* (which he named the "*Pimander*"), see YATES, *supra* note 100, at 21. Some of the passages relevant to the development of alchemistic thinking are treatises I.14-16, X.11-19, and XI.2-17, see HERMES TRISMEGISTUS, *THE THEOLOGICAL AND PHILOSOPHICAL WORKS OF HERMES TRISMEGISTUS, CHRISTIAN NEOPLATONIST* 7-9, 60-63, 68-74 (John D. Chambers trans., T. & T. Clark 1882).

119. YATES, *supra* note 100, at 66, 91, 130, 137, 210; see also TAYLOR, *supra* note 3, at 156.

120. Galileo Galilei, *Dialogue on the Two Chief World Systems* (1632), in GALILEO GALILEI, *THE ESSENTIAL GALILEO* 193-194 (Maurice A. Finocchiaro ed. & trans., Hackett Publ'g 2008).

against the idea of heavenly matter, which much of alchemical theory postulates.¹²¹

Paracelsus, usually regarded as the father of medicinal chemistry, considered the giving of a drug to patients for healing and the prolongation of life as a version of the process of the transmutation of the five base metals (“incomplete metals”) into the noble metals silver and gold with the means of a “tincture,” originally a variant or even synonym of the philosopher’s stone.¹²² Giving the medicine (the alchemistic idea of a tincture) to the patient is for Paracelsus an act of the purification of the human body that frees it from diseases, like the purification or transmutation of the base metals that makes them to the noble metals, silver and gold.¹²³ Alchemy of the School of Paracelsus is characterised by a monist organic, evolutionary dynamism with a close association to, and interaction with, organic substances and living creatures, and not being restricted to the transmutation of metals and other inorganic matter: nature and its transformations are also organic and living changes within an all-encompassing universe.¹²⁴

Kepler based his defence of the heliocentric system in no small part on notions of Christian alchemical thought: the physical universe appears like its invisible creator—the centre as the Father, the surface as the Son and the intermediate space as the Holy Spirit, which points to a heliocentric universe.¹²⁵ Copernicus himself referred to Hermes Trismegistus directly when he gave an allegorical explanation in his *De Revolutionibus orbium caelestium* (1543): “In the centre of all rests the sun Trismegistus calls it a ‘visible

121. TAYLOR, *supra* note 3, at 156.

122. See, e.g., KIRCHER, *supra* note 5, at 268: “Hoc [lapis philosophorum] alii *Elixir* vocant; alii *Tincturam*, quae omnia metalla in aurum, argentumque substantialiter tingit”

123. Paracelsus, *Ueber die Tinktur der Physici*, chapters 6-7, in DER HIMMEL DER PHILOSOPHEN, *supra* note 93, at 196-197.

124. ALEXANDRE KOYRÉ, MYSTIQUES, SPIRITUELS, ALCHIMISTES DU XVIIÈ SIÈCLE ALLEMAND 109-110 (Gallimard 1971). On the idea of the Homunculus in Paracelisan alchemy, see NEWMAN, *supra* note 82, at 326-327.

125. PRINCIPE, *supra* note 1, at 202. For a contemporaneous alchemist visualisation, see ROOB, *supra* note 90, at 58-59.

god,' Sophocles' Electra, 'that which gazes upon all things.' And so the sun, as if resting on a kingly throne, governs the family of stars which wheel around."¹²⁶ An influence of neoplatonic or hermetic (alchemist) thinking can be presumed,¹²⁷ but it has also been argued that Copernicus simply restated the usual tropes or topoi of classical education, without a specific hermetic influence.¹²⁸

In the late eighteenth and early nineteenth centuries, when there was a new rise of interest in alchemy,¹²⁹ Goethe felt attracted to the holistic alchemist idea of the unity of the microcosm and the macrocosm, which appears not only in various passages of his *Faust*,¹³⁰ but also in the approach in his *Farbenlehre*.¹³¹ In the twentieth century, Werner Heisenberg would be inspired by the system for the organisation of the real world proposed in Goethe's *Farbenlehre* in his 1942 *Order of Reality* [*Ordnung der Wirklichkeit*].¹³²

These brief comments on the history of science shall show that alchemic ideas consisted not only of some obscure and occult notions from a long bygone era, but influenced considerably scientific thinking in the beginning of the modern sciences. This is not surprising if one remembers that one root of scientific as well as alchemistic theories were Aristotle's writings on natural philosophy, especially his *Physics*. The study of this treatise was required for the degrees in arts at medieval universities (in Paris from the 1250s). During the Middle Ages and the Modern Age, lawyers also had

126. Nicolaus Copernicus, *On the Revolutions of Heavenly Spheres* (*De Revolutionibus Orbium Coelestium*), Book 1, chapter 10, in *ON THE SHOULDERS OF GIANTS: THE GREAT WORKS OF PHYSICS AND ASTRONOMY* 7, 31-32 (Stephen Hawking ed., Running Press 2002).

127. YATES, *supra* note 100, at 172.

128. Dilwyn Knox, *Ficino and Copernicus*, in *MARSILIO FICINO: HIS THEOLOGY, HIS PHILOSOPHY, HIS LEGACY* 399, 411 (Michael J. B. Allen, Valery Rees, & Martin Davies eds. 2002).

129. PRINCIPE, *supra* note 1, at 90-92.

130. *E.g.*, Johann Wolfgang von Goethe, *Faust I*, in *JOHANN WOLFGANG VON GOETHE, WERKE, VOL. 3: HAMBURGER AUSGABE* 500-503, verses 425-438 (Erich Trunz ed., Deutscher Taschenbuch-Verlag 1982).

131. JOHANN WOLFGANG VON GOETHE, *GOETHE'S SÄMMTLICHE WERKE IN VIERZIG BÄNDEN, VOL. 40, 71* (J. G. Cotta 1840).

132. WERNER HEISENBERG, *ORDNUNG DER WIRKLICHKEIT* 53 (2d ed., Piper 1989).

some contact with alchemistic ideas within their general philosophical education when they took their law degrees.

