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Dans l'existence et dans l'inexistence : types, instances et l'analyse de Dawarān comme test de causalité

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Résumés

English Français
Qiyās, or "correlational inference" (often glossed as "analogy"), comprises a primary set of methodological tools recognized by a majority of premodern Sunnī jurists. Its elements, valid modes, and proper applications were the focus of continual argument and refinement. A particular area of debate was the methodology of determining or justifying the *ʿilla*: the legal cause (or occasioning factor, or *ratio legis*) giving rise to a ruling in God's Law. This was most often discussed (and disputed) under the rubric of "the modes of causal justification" (*masālik al-taʿlīl*). Among these modes was the much debated test of *dawarān* (concomitance of presumed cause and effect). In brief, proponents of *dawarān* employed it to justify claims that a property (*waṣf*) occasioned the ruling (*ḥukm*) in an authoritative source-case (*aṣl*). In concert with other considerations, the demonstrated co-presence (*ṭard*) and co-absence (*ʿaks*) of property and ruling—that is, their concomitance "in existence" (*wujūdan*) and "in nonexistence" (*ʿadaman*)—was taken as an indication that the property was the ruling's *ʿilla*. Delving further into *dawarān* and causation (*ʿilliyya*), the current study interprets "in existence" and "in nonexistence" not as a kind of metaphor for true and false (within the framework of a classical truth-functional formal semantics), but as an accurate terminology vis-à-vis the meaning of causality statements, fully compatible with dominant Islamicate views on causal agency. In brief, a deeper logical and linguistic analysis of the different existential modes of *dawarān* strongly suggests that we should distinguish property (or phenomenon) and ruling (or effect) as *types* (concepts or propositions linguistically expressed by a sentence) as opposed to *tokens* (instantiations of the type; the real, ontological events that verify the proposition). Our reading of *dawarān* as shaped by a finer-grained structure not only allows us to identify the efficient occasioning process as a function which takes some particular token of the *ʿilla* (arguably, the property or properties which provide the ruling's material cause) and renders a token of the general ruling type, but it allows us to

elucidate the role of *taʿlīl* (causal justification) in shaping an epistemological theory of argument to the best explanation: a sophisticated, premodern manifestation of abductive reasoning.

Qiyās, ou « inférence corrélationnelle » (souvent traduite sous le terme « analogie »), comprend un ensemble d'outils méthodologiques primaire reconnus par une majorité de juristes Sunnīs prémodernes. Ses éléments, ses modes valides et ses applications appropriées étaient au centre d'un argument et d'un raffinement continus. Un domaine particulier de débat était la méthodologie de détermination ou de justification de la *ʿilla* : la cause légale (ou facteur occasionnant, ou *ratio legis*) donnant lieu à une règle selon la Loi de Dieu. Cette méthodologie a été le plus souvent discutée (et contestée) sous la rubrique « des modes de justification causale » (*masālik al-taʿlīl*). Parmi ces modes figurait le test très controversé du *dawarān* (concomitance de cause et d'effet présumés). En bref, les partisans du *dawarān* l'ont utilisé pour justifier les affirmations selon lesquelles une propriété (*waṣf*) occasionnait la règle (*ḥukm*) dans un cas source faisant autorité (*aṣl*). De concert avec d'autres considérations, la co-présence (*ṭard*) et la co-absence (*ʿaks*) démontrées de la propriété et de la règle, c'est-à-dire leur concomitance « dans l'existence » (*wujūdan*) et « dans la non-existence » (*ʿadaman*) – a été prise comme une indication que la propriété était la *ʿilla* de la règle. En approfondissant le *dawarān* et la causalité (*ʿilliyya*), la présente étude interprète « dans l'existence » et « dans la non-existence » non pas comme une sorte de métaphore du vrai et du faux (dans le cadre d'une sémantique formelle fonctionnelle de la vérité classique), mais comme une terminologie précise vis-à-vis de la signification des déclarations de causalité, entièrement compatible avec les vues islamiques dominantes sur l'agence causale. En bref, une analyse logique et linguistique plus approfondie des différents modes existentiels du *dawarān* suggère fortement que nous devrions distinguer la propriété (ou le phénomène) et la règle (ou l'effet) en tant que *types* (concepts ou propositions exprimés linguistiquement par une phrase) par opposition aux *jetons* (instanciations du type ; les événements ontologiques réels qui vérifient la proposition). Notre lecture du *dawarān* comme étant façonné par une structure plus fine nous permet non seulement d'identifier le processus d'occasion efficace en tant que fonction prenant un jeton particulier de la *ʻilla* (sans doute, la propriété ou les propriétés qui procurent la cause matérielle de la décision) et rend un jeton du type général de règle, mais il nous permet également d'élucider le rôle du *taʿlīl* (justification causale) dans la formation d'une théorie épistémologique de l'argument à la meilleure explication : une manifestation sophistiquée et prémoderne du raisonnement abductif.

Entrées d'index

Mots-clés : théorie de l'argumentation, dialectique, théorie Islamique de la disputation, qiyās, inférence corrélationnelle, analogie, dawarān, causal concomitance, taʿlīl, justification causale, abduction, argument à la meilleure explication
Keywords: argumentation theory, dialectic, Islamicate disputation theory, qiyās, correlational inference, analogy, dawarān, causal concomitance, taʿlīl, causal justification, abduction, argument to the best explanation

Texte intégral

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Introduction

1 In Islamic legal theory, *qiyās*, or "correlational inference"—often, if inexactly, glossed as "analogy"—comprises a set of methodological tools whose elements, valid modes, and proper applications were the focus of continual argument and refinement by Sunnī jurists.[1] This centuries-long discourse constitutes a highly developed contribution of the argumentative—more precisely, dialectical—approach to legal reasoning within Islamic Law. A particularly lucid, early output was the systematic *qiyās* theory of renowned Shāfiʿī dialectician and legal theorist Abū Isḥāq al-Shīrāzī (1003-1083 CE), upon which the following overview is based.[2]

2 The aim of *qiyās* is to provide a rational ground for the application of a juridical ruling to a given case which has not been directly pronounced upon in the primary juridical sources (i.e., the Qurʾān, the Sunna [Prophet's example], and *Ijmāʿ* [consensus]). It combines heuristic (and/or hermeneutic) moves with logical inferences; and archetypal *qiyās*—that is, *qiyās al-ʿilla*, or "correlational inference of the occasioning factor / cause"—adheres to the following pattern:
In order to establish whether or not a given juridical ruling (*ḥukm)* applies to a novel or contended case, called the branch-case (*farʿ*),

1. We look for a relevant, authoritatively determined root-case (*aṣl*) bearing that ruling in the primary sources of law (Qurʾān, Sunna, and *Ijmāʿ*).
2. We next attempt to determine the property (*waṣf*) or set of properties in the root-case which constitutes the *ʿilla*—that is, the occasioning factor (or legal cause, or *ratio legis*)[3] which gives rise to its ruling.
3. If we may determine that this property occasions the ruling, and that it is shared by the branch-case, we may infer that it is equally productive of that ruling in the branch-case.
4. The novel or contended branch-case thus falls under that juridical ruling, and the range of its application is extended.

When the *ʿilla* (occasioning factor) is made explicit by the sources, or is capable of being rationally inferred by adequately identifying the relevant property or set of properties, we may proceed with a "correlational inference of the occasioning factor" (*qiyās al-ʿilla*).

3 A classic example is to reason that date liquor, being intoxicating just like grape wine, is therefore also prohibited like grape wine. As identified by canonical analysis, the four elements in this argument are:

- the *farʿ* : the branch-case under consideration (date liquor);
- the *aṣl* : the root-case verified by the primary sources (grape wine);
- the *ʿilla* : the occasioning factor they have in common (intoxication); and
- the *ḥukm* : the legal qualification (prohibition) which is therefore also common, inferred in the case of date liquor via the source-verified case of grape wine.

From this it is evident that the key procedure underpinning this form of *qiyās* is identifying the *ʿilla*: the occasioning factor giving rise to prohibition in our example *aṣl* of grape wine. From a different perspective, applying the general schema *intoxicating drinks should be forbidden* to the *farʿ* of date liquor occasions its interdiction.

4 When the occasioning factor (*ʿilla*) is neither made explicit by the sources nor capable of being rationally inferred, however, we might next resort to "correlational inference of indication" (*qiyās al-dalāla*). Here, in lieu of the *ʿilla*, one pinpoints relevant parallelisms between other rulings known to be shared by *aṣl* and *farʿ*, thus inferring that whatever the *ʿilla* may be, it must be shared in the case at hand (as it must also have been shared in the other cases). Should even this prove infeasible, we might finally resort to the (highly contentious) "correlational inference of resemblance" (*qiyās al-shabah*), which is based merely on the presence of properties shared but either of indeterminable or nonexistent causative efficacy.

5 Thus, *qiyās al-dalāla* and *qiyās al-shabah*—both of which, far more than *qiyās al-ʿilla*, merit the label "argument by analogy" (or, better yet, "argument *a pari*")—are put into action when the *ʿilla* grounding the application of a given ruling is not known. The plausibility of a conclusion attained by parallelism between other shared rulings (*qiyās al-dalāla*) is considered to be of a higher epistemic degree than a conclusion obtained by mere resemblance in respect to some set of (relevant) properties (*qiyās al-shabah*).Conclusions by either have a lower epistemic standing than conclusions inferred via a known, pinpointed, and shared occasioning factor (*qiyās al-ʿilla*).

6 A cardinal feature of al-Shīrāzī's take on *qiyās al-ʿilla* is his particular notion of efficiency (*taʾthīr*) which tests whether the property P purported to be efficient in occasioning the juridical ruling at stake is indeed so. For al-Shīrāzī, *taʾthīr* consists of two complementary procedures:

- co-presence (*ṭard*): whenever the property is present, the ruling is also present, and
- co-absence (*ʿaks*): whenever the property is absent, the ruling is also absent.

While co-presence examines whether ruling H is present along with property P, co-absence examines whether ruling H is absent along with property P.[4]

7 This test of a property's causal efficiency is elsewhere and more commonly called "co-presence and co-absence" (*al-ṭard wa-l-ʿaks*) or "[causal] concomitance" (*dawarān*), and listed among the "modes of causal justification" (*masālik al-taʿlīl*) in works of legal theory (*uṣūl al-fiqh*).[5] Extensive discussions on this causality test—though it remained a debated technique (especially when considered in isolation from other methods)—evolved both before and after al-Shīrāzī in the legal theoretical literature.[6] Concomitance was a key consideration, and it remained, along with a handful of others—especially the tests of "suitability" (*munāsaba*) and "analytical disjunction and exclusion" (*al-sabr wa-l-taqsīm*)—among the most commonly (and thoroughly) treated rational modes of causal justification. Even al-Ghazālī, who denied the utility of *al-ṭard wa-l-ʿaks* alone, granting it only when combined with *al-sabr wa-l-taqsīm* (see the appendix, below), incorporated this kind of concomitance as a constituent—albeit, an insufficient one—of his general epistemological and theological take on causation and *qiyās*.

8 As a mode for determining the *ʿilla*, proponents of *al-ṭard wa-l-ʿaks / dawarān*[7] employed it to justify claims that a property (*waṣf*) occasioned the ruling (*ḥukm*) in an authoritative source-case (*aṣl*). In concert with other considerations (e.g., suitability for causation), and subject to objections and counter-objections, the corroborated co-presence (*ṭard*) and co-absence (*ʿaks*) of property and ruling were taken as an indication that the property was the *ʿilla* (cause, occasioning factor, or *ratio legis*) of the ruling; and, by way of *qiyās*, when that causal property was also found in the contended branch-case (*farʿ*), it could be assumed to occasion the same ruling therein.

9 In later legal and dialectical theory especially, co-presence and co-absence were expressed as concomitance "in existence" (*wujūdan*) and "in nonexistence" (*ʿadaman*), and no operative distinction between natural and normative causality appears to have been maintained.[8] It would appear that the property of intoxication, for example, was considered to have caused the ruling of prohibition for wine drinking just as the phenomenon of the sun's rising caused the effect of daytime; both were indicated by concomitance of presumed cause and effect in existence and in nonexistence. Delving further into *dawarān* and causation (*ʿilliyya*), the current study aims to render an interpretation of "in existence" and "in nonexistence" such that they be understood not as a kind of metaphor for true and false (within the framework of a classical truth-functional formal semantics), but as an accurate terminology vis-à-vis the meaning of causality statements, fully compatible with dominant Islamicate views on causal agency.

In brief, a deeper logical and linguistic analysis of the different existential modes of *dawarān* strongly suggests that we should distinguish property (or phenomenon) and

ruling (or effect) as *types* (concepts or propositions linguistically expressed by a sentence) as opposed to *tokens* (instantiations of the type; the real, ontological events that verify the proposition). Rather than simply reading "in existence" as "true" and "in nonexistence" as "false" within the framework of a classical truth-functional formal semantics, we here read *dawarān* as shaped by a finer-grained structure—one in which a *dawarān* test confirms:

1. concomitance "in existence" if any token of the property (or phenomenon) type triggers a token of the corresponding ruling (or effect) type, and
2. concomitance "in nonexistence" if any absence of a token of the property (or phenomenon) type triggers an absence of a token of the corresponding ruling (or effect) type.

This analysis complements the recent work of Shahid Rahman and Muhammad Iqbal on *qiyās* (2019), wherein they applied contemporary Type-Theoretical grammar as developed by Aarne Ranta (1994), based on Per Martin-Löf's (1984) Constructive Type Theory and its inferential take on the principle of propositions as sets of types.

11 The CTT-approach allows us not only to distinguish the *types* of property (or phenomenon) and ruling (or effect) from their *tokens* or instances, but also to identify the efficient occasioning process *as a function* which takes some particular token of the *ʿilla* (e.g., my consumption of an intoxicating drink today), and renders a token (the interdiction of this particular action of my consumption of an intoxicating drink today) of the general ruling type (consuming intoxicating drinks is forbidden). As a result, we may interpret the Muslim legal theoreticians' *ʿilla* as both:

1. the material cause / occasioning factor / *ratio legis*, which refers to the property (or compound of properties) P as a type, and
2. the efficient causal / occasioning process: the function *ʿilla*(x): H(x) (x: P)[9] that links the existence of the property P with the existence of the ruling H – i.e., the function that relates tokens x of the property with tokens of (applications of) the ruling.[10]

12 This analysis also allows us to elucidate the epistemological concept of causation at work in *dawarān*, which—despite his denial of the utility of concomitance alone in determining the *ʿilla* in contexts of juristic *qiyās*—appears to be paralleled by al-Ghazālī's approach to natural causality, in contrast to Ibn Sīnā's essentialist approach. It is the non-essentialist approach to causation that requires a singling out of the procedure that links the efficient property to the occasioned effect. And since, in al-Ghazālī's epistemology, causation is explained by neither essential nor accidental active and passive powers, the primary focus of the causal justification process (*taʿlīl*) remains the link between presences of the property and presences of the effect—that is, our second interpretation of the *ʿilla* as efficient process and function.

13 We will further argue that *dawarān* should be examined in a framework wherein the links between what is presumed to be the concomitant cause / occasioning factor and the general ruling / effect are explained by an irreducible, dialogical, epistemic act of dynamic constitution of meaning. A closer examination of the truly dialectical procedures involved in the exercise of *dawarān* suggests it is part of a general epistemological approach which incorporates several methods of corroboration and selection between competing arguments—and which constitutes, within Islamicate thought, an early and sophisticated inquiry-system paralleling what is today referred to as *Inference to the Best Explanation*.[11]

14 In conclusion, we will suggest that the formulation "in existence and in nonexistence," in the context of *dawarān*, expresses the very essence of the prescriptive character of legal norms—in general, not only within the Islamicate tradition; and it does so, for the most part, by way of the following features:

1. legal norms' comprising an intertwining of type and token, whereby the type supplies the prescription's generality and hypothetical character, while the token constitutes the matter to which the prescription is applied—that is, the realization of the type (note the hypothetical character of the prescription does not require the involved token's actualization or presence);
2. juridical rulings' dependence upon causal / occasioning properties, whereby the efficient sense of *ʿilla* not only expresses the link relating a property (or compound of properties) to its specific (legal) effect, but constitutes the primary objective of the modes of causal justification (*masālik al-taʿlīl*);
3. the equal applicability of (2) to natural causality, whereby a type of effect is said to depend upon a type of causal property in such a way that some physical and/or chemical process realizes a token of the effect;[12]
4. *dawarān*'s being, in the first place, a test—that is, *a verification procedure*, rather than a conjunction of verified propositions; and
5. the conjectural epistemic status of the *ʿilla* being won through dialectical inquiry, and postulated—with special regard to the arguments brought forward in support—as the best explanation for the (legal) effect under consideration.

15 The present study will draw upon the notion of concomitance developed within al-Ghazālī's epistemology of natural causation,[13] while bearing in mind his take on *al-ṭard wa-l-ʿaks* vis-à-vis its role in juristic *qiyās*. We will suggest that his epistemological perspective on the *ʿilla* in the former context results from a generalizing of the concept of causation at work in the latter context—an assimilation of natural to legal causation[14] —rather than drawing on the passive or active powers of objects and events at work in the epistemological and logical traditions of Aristotle and Ibn Sīnā.

16 Importantly, in post-classical juridical dialectical developments, overlaps between *dawarān* and necessary implication (*talāzum* / *mulāzama*) were not only noted but theorized to a significant extent, while an age-old distinction between "legal causes" (*ʿilal sharʿiyya*) and "intellective causes" (*ʿilal ʿaqliyya*) seems to have faded away, with *dawarān* illustrations drawn equally from the natural and normative realms.[15] Such developments were not without the potential for certain pitfalls, and in the conclusion we will briefly discuss these and whether or not post-classical theorists like Shams al-Dīn al-Samarqandī (d.1322 CE) avoided them. Were one to go too far in defining *dawarān* as an implication, for example, without distinguishing the efficient-causal sense of *ʿilla* (which links hypothetical presences of properties with hypothetical presences of effects) from the material-causal sense of a case's concomitant properties themselves, one's causal justification may become purely definitional, or unable to distinguish between truly occasioning properties and their entailments or accidents, or prone to well-known deontic paradoxes under the rubric of extrapolation fallacies (or indeed all three).[16] In the main, however, it would appear that the always developing discourse on *dawarān* / *al-ṭard wa-l-ʿaks* successfully navigated these quandaries.

The *ʿIlla* as an Occasioning Factor with neither an Active nor Passive Nature

Towards an Account of Causation at Work in *Dawarān*

17 As Peter Adamson (1998) points out, few passages in Arabic philosophy have attracted as much attention as al-Ghazālī's treatment of causality in the seventeenth discussion of his *Incoherence of the Philosophers* (*Tahāfut al-Falāsifa*), along with the response of Ibn Rushd (Averroës) in his *Incoherence of the Incoherence* (*Tahāfut al-Tahāfut*). A vital question underlying the discussion was what theory of causation

sufficed to explain human knowledge; and in a detailed monograph: *Al-Ghazālī's Philosophical Theology* (2009), Frank Griffel delves deeply into the matter—particularly so in chapters 6 and 7. In these chapters Griffel recalls Ibn Sīnā's views on causation (as discussed in his *Shifāʾ*) and how they were received by al-Ghazālī. Most relevant to our current study are the following insightful passages on Ibn Sīnā:[17]

> In Avicenna, like in Aristotle, the source of our knowledge of the essential active and passive powers of things is not nature and its observation but the separate active intellect. Sensual perception, Avicenna teaches, cannot lead to necessary judgments. It is important to note that induction only works if the active and passive powers that lead to causal connections are part of the essences of the things.
>
> When the active and passive powers that necessitate the causal connection are not part of the essences of the things, Avicenna mandates the use of experimentation (*tajriba*). An example that Avicenna and al-Ghazālī both mention is that in medicine, we witness that scammony causes purgation in the gallbladder. According to Avicenna, the relationship between scammony and the purgation of bile is not due to an active power that is part of the essence of scammony. Rather, the effect is due to an "inseparable accident" (*ʿaraḍ lāzim*) or a proprium (*khāṣṣa*) of scammony, meaning an accident that inheres permanently and is therefore an inseparable part of it. Since the cause of this laxative effect is an accidental characteristic, we cannot know it through induction (*istiqrāʾ*).[18] In this case, experimentation (*tajriba*) leads us to conclude that the accident of causing this laxative effect inheres in scammony. The repeated observation of this connection establishes that there is something either in scammony's nature or just "with it" (*maʿahu*) that causes—at least in our lands, Avicenna adds—purgation of bile.
>
> [....]
>
> In Avicenna's view, experimentation informs us *that* scammony has a purging effect, yet it does not allow us to conclude *how* this effect occurs. Unlike induction, it does not provide the underlying causal explanation. Experience thus does not provide scientific knowledge (Greek *episteme*, Arabic *ʿilm*) in the strict Aristotelian sense of it being both necessary *and* explanatory.
>
> [....]
>
> This method often forces the scientist to limit his or her results to the conditions he or she observed, such as when Avicenna says that scammony has the observed effect "in our lands." Limitations, such as the acknowledgment that scammony may not have its purging effect in other climates, are very important in Avicenna's theory of experience.[19] They are a result of the fact that we are only dealing with a cause that is an accident in scammony, and not a part of its essence.

Thus, Ibn Sīnā points to the difficulty of attaining certainty of causal connection with regard to such things as for which the active and passive powers are not part of its essence; and, presumably, this also adds to the difficulty of isolating and identifying non-essential active and passive powers. Al-Ghazālī, however, makes no use of such powers at all, whether essential or accidental.[20]

18 And, in fact, if we shift from a natural to a legal perspective, it will appear difficult for us to locate "the active and passive powers that necessitate the causal connection" in properties and their legal effects; and this is particularly so if, as so often occurs, some present impediment or absent proviso can prevent the ruling's application, or if changes and revisions take place. This is why, for example, proponents of the (contended) method of "rationalized juristic preference" (*istiḥsān*) might set aside the conclusion of the strict or most apparent *qiyās* in favour of a "preferred *qiyās*" drawing upon a source or principle that instead accommodates an exception for the considered case (e.g., someone who forgetfully or mistakenly swallows food during the day in Ramadan will invalidate the fast by strict *qiyās*, but not by *istiḥsān*).[21] And among other areas in which this may come into play is in responding to the very relevant dialectical objection known as "inconsistency" (*naqḍ*). This is nothing less than the production of a counter-example exposing the lack of complete co-presence (*ṭard*) which was claimed

by the *qiyās*-justifying respondent-proponent (R); that is, the questioner-opponent (Q) brings an accepted, parallel (but more general) case wherein R's claimed *ʿilla* is present but his ruling is not.[22]

19 More generally, integrating into the method of law-making tools that prompt the withdrawal of causation claims by justifying exceptions or accommodating special conditions shapes a body of law's dynamic nature and appears to counter any assumption of essential (and therefore static) causative powers. Ultimately, it is the body of law and the dialectical endeavour expanding and refining it that ground causation claims within the limits of a resource-bounded human knowledge. Thus, if a general framework comprising causes / occasioning factors for all of legal, theological, and natural contexts is to be developed, then appealing to active and passive powers may be rather more hindering than helpful. And if properties alone are not sufficient to explain causation, then determining causal efficiency must remain our focus; more precisely: justifying claimed links between occasioning properties and occasioned effects.

20 Rahman and Iqbal,[23] deploying the expressivity of the fully interpreted language of Per Martin-Löf's Constructive Type Theory (CTT), proposed an analysis of causation links that highlights both their feature of efficiency and the specific conceptual dependence of the occasioned effect upon the occasioning property.[24] To begin with, we take for granted that the ruling *Forbidden* which is occasioned by consuming intoxicating drinks is not the same as that *Forbidden* which is occasioned by homicide, and that legal systems provide for this distinction by the varying quality and degree of penalties for such acts. More precisely, in the context of a CTT framework, *functions* are the means by which we may express cause-effect dependencies; a function, in fact, is a method or procedure for relating concepts such that one is dependent upon the other. And in legal contexts, executing a function is a legal procedure by means of which performances of a type of action occasion applications of the ruling to such performances. In Civil and Common Law cases, it is an exclusively human legal authority which carries out this procedure, and in Divine or Revelatory Law, it is the Divine Lawgiver, either directly through univocal pronouncement or sanctioned sources, or indirectly through accepted degrees of human interpretive and inferential agency. But in all of these systems, it is executing the procedure which establishes the link between cause and effect, occasioning factor and ruling.

21 The upshot of this kind of analysis is that it allows us to make explicit the distinction between (1) the property constituting the material-causal occasioning factor, and (2) the actual, efficient-causal occasioning factor. In other words, according to this view, it is useful to distinguish between the property (*waṣf*, pl. *awṣāf*) and the properly efficient sense of *ʿilla*; and the procedure is one that transforms instances of occasioning factors into applications of the effect to these instances.

22 Here, we have slightly adapted a schema which is more fully introduced in Rahman & Young (Forthcoming, 2022), in order to elucidate further the analyses developed in Rahman and Iqbal (2018, p. 80-84); Rahman, Iqbal, & Soufi (2019, p. 31-40); and Iqbal (2021). And since we would like to underscore apparent efforts to unify legal and natural causation, we will employ the technical components of later, logicized *dawarān* theory, incorporating the term *madār* for the concomitant presumed cause and the term *dāʾir* for the concomitant presumed effect.

23 [25]

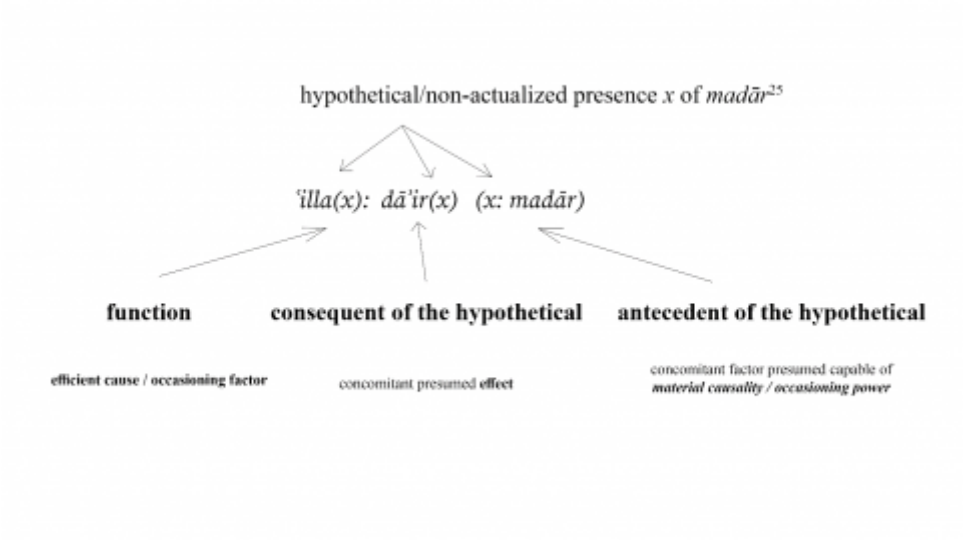

Fig. 1

The formal expression above may be read as follows:

> Given some concomitant factor presumed to be capable of *material causality / occasioning power* (the *madār*), i.e., a concomitant, suitable property, there is some *efficient cause / occasioning factor*, *ʿilla(x)*, that occasions the concomitant presumed effect (the *dāʾir*), i.e., the concomitant juridical ruling.

Thus, *ʿilla(x)* is a procedure (a function) that relates presences of what is presumed to be the concomitant material cause / occasioning factor with presences of what is presumed to be its concomitant effect.

24 Notice that the expression is a hypothetical judgement, not a hypothetical proposition (that is, it is neither an implication nor a universal proposition). Neither the presence of the antecedent (*x*: *madār*) nor the presence of the consequent *dāʾir*(*x*) is presumed: it is purely hypothetical. As explained below, we can take a further step and express the hypothetical as the universal; i.e., for any presence of what is presumed to be the concomitant material cause / occasioning factor, there is a method that relates those presences with presences of what is presumed to be its concomitant effect. This amounts to raising the hypothetical to a universal law. The method / efficient occasioning factor verifies the universal law; i.e., if such a method can be exhibited, then the universal is said to be verified. For example: if the ruling *Every consumption of an intoxicating drink is forbidden* is verified, then there must be some legal procedure, enacted by some legal authority, that leads to the interdiction of any performance of such a consumption.

Dawarān as a Procedure

25 We can now apply this same kind of analysis to the full notion of *dawarān*. Turning our attention first to co-presence (*ṭard*), or concomitance "in existence," we take as a given that *ṭard* is whenever the *madār* is present, the *dāʾir* is also present. Thus, for any *m* that actualizes the *madār*, *ṭard* verifies that *m* produces the *dāʾir*.

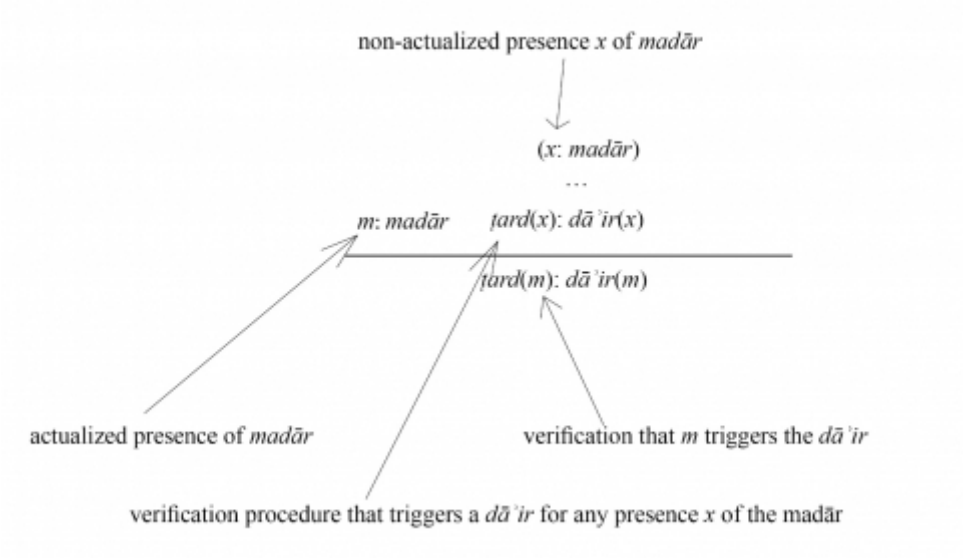

Fig. 2

26 Notice that this analysis makes explicit the fact that *ṭard* is a verification ***procedure*** which takes instances of the presumed cause and produces instances of its presumed effect. If the procedure triggers the effect for any instance of the *madār,* then we can assert that *ṭard* co-presence has been verified. In fact, this verification procedure has a universal force: co-presence is verified, if the procedure confirms that *all* presences of the *madār* yield presences of the *dāʾir*:

$$\frac{(x\text{: } madār)\quad \ldots.\quad ṭard(x)\text{: } dāʾir(x)}{\lambda x.ṭard(x)\text{: } (\forall x\text{: } madār)\ dāʾir(x)}$$

Fig. 3

The expression "*λx.ṭard(x)*" indicates that the procedure *ṭard* confirms that for each *madār*-presence a *dāʾir*-presence can be found. Thus, if *λx.ṭard(x)* can be shown to obtain, then the proposition that all presences of the *madār* yield presences of the *dāʾir* —i.e., (∀*x*: *madār*) *dāʾir*(*x*)—will be verified.

27 Turning our attention now to co-absence (*ʿaks*), or concomitance "in nonexistence," we see that it can be analysed in the same way. In brief, we take as a given that *ʿaks* is whenever the property is absent, the ruling is also absent. Thus, we obtain:

$$\lambda y.{}^{\text{ʿ}}aks(y)\text{: } (\forall y\text{: } {\sim}madār)\ {\sim}dāʾir(y).$$

Here, the expression "*λy.ʿaks*(*y*)" indicates that the procedure *ʿaks* confirms that for each *madār*-absence a *dāʾir*-absence can be found. Thus, if *λy.ʿaks*(*y*) can be shown to obtain, then the proposition that all absences of the *madār* yield absences of the *dāʾir*— i.e., (∀*y*: ∼*madār*) ∼*dāʾir*(*y*)—will be verified.

28 Since *dawarān* as a verification test consists of both the test of *ṭard* and the test of *ʿaks*, we may now pull all this together and express *dawarān* as the following conjunction:

dawarān: (∀*x*: *madār*) *dā'ir*(*x*) ∧ (∀*y*: ~*madār*) ~*dā'ir*(*y*)

or, as more explicitly comprising both methods of *ṭard* and *'aks*:

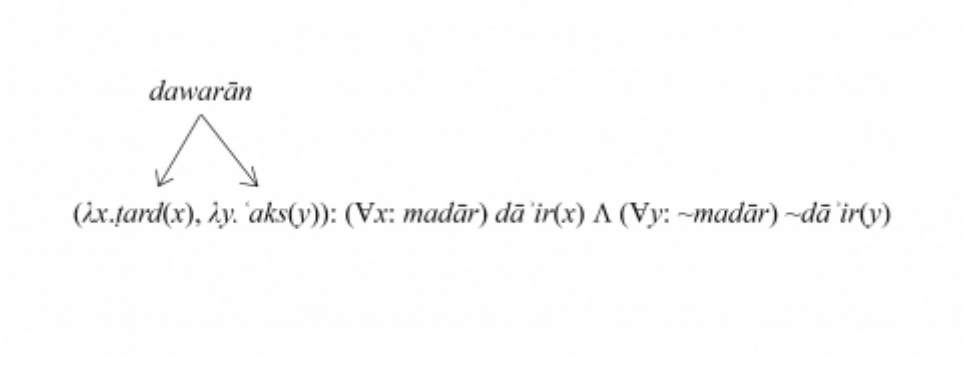

Fig. 4

The upshot of this analysis is that it explicitly shows that *dawarān* is primarily a *procedure*, a verification test, and only secondarily the verified conjunction of universal propositions (or, in some propositional renderings, a conjunction of necessary implications).[26] Moreover, it shows that the test in fact comprises two procedures.

29 In the preceding, the reader may have noticed the use of two quantifiers (*x* and *y*). This avoids the problem of asserting of the same *x* that it both has and does not have the occasioning property at the same time. One might object, however, that any *dawarān* test should concern the same case *x* both as having and as not having the considered property—albeit under different circumstances. For the aims of the present paper, we have left this to the dynamics of the dialogical structure, so that each choice of the interlocutor triggers a different dialogue (play), whereby the same case is examined under different contexts. By way of illustration, we might imagine an example in which one play concerns pressed juice with the quality of wine while the other concerns the same pressed juice with the quality of vinegar. It is in fact possible to encode this into a logical analysis, but a bit more complexity is required. There are several ways to accomplish this.

30 One way is to assume that every *x* either enjoys or does not enjoy the occasioning property P; and if some *y* is identical to those instances of *x* that enjoy the property P, then the ruling H follows; and if some *z* is identical to those *x* that do not enjoy the property P, then some other ruling—here we will assume the opposite ruling ~H—follows. Let us consider the paradigmatic example-case of wine. We will assume that

1. every pressed juice *x* enjoys or does not enjoy the occasioning property P: being an intoxicating drink;
2. if any pressed juice *y* is identical to those pressed juices *x* that enjoy the property P, then it is forbidden for consumption;
3. and if any pressed juice z is identical to those pressed juices *x* that do not enjoy the property P, then it is allowed for consumption.

A formal expression of such an analysis, in which "*A*" stands for "intoxicating drink," yields

31 (∀x: *A* ∨ ~*A*) [[(∀y: *A*) left∨(*y*)=x ⊃ Forbidden-for-consumption(*y*)] ∧ [(∀z: ~*A*) right∨(*z*)=*x* ⊃ Allowed-for-consumption(*z*)]]

Here, the identity of *x* with left∨(*y*) and with right∨(z) is defined within the set of pressed juices *A* ∨ ~*A* that either enjoy or do not enjoy the property of being intoxicating drinks.[27]

32 Returning to al-Ghazālī, a well-known feature of his take on natural causation is that the link between cause and effect is ultimately grounded on God's will, although some level of necessary knowledge can be nevertheless achieved by humans. In principle, however, this knowledge is for the most part situated at an epistemic level of judgement, not at an ontological level. This, in the main, is consonant with al-Ghazālī's critique of mere concomitance as a test for causation, as developed in his legal theory.

Here we may provide a brief summary, drawn from his famed legal-theoretical manual the *Mustaṣfā* (see the appendix for full Arabic text and translation).

33 In his *Mustaṣfā*, al-Ghazālī approaches the methods of determining the *ʿilla* in a relatively standard fashion. First is affirming the cause / occasioning factor (*ithbāt al-ʿilla*) by way of transmitted textual indicants (*al-adilla al-naqliyya*), then by way of juristic consensus (*ijmāʿ*), then by way of rational inference and methods of drawing indication (*al-istinbāṭ wa ṭuruq al-istidlāl*). This latter category includes analytical disjunction and exclusion (*al-sabr wa-l-taqsīm*) and suitability (*munāsaba*), but not (according to al-Ghazālī) concomitance. Rather, concomitance belongs to the category which follows; namely, "the invalid methods for affirming the root-case's cause / occasioning factor" (*al-masālik al-fāsida fī ithbāt ʿillat al-aṣl*). The second of these is co-presence (*ṭard*) alone, and the third is both co-presence and co-absence (*al-ṭard wa-l-ʿaks*).

34 *Ṭard* alone, al-Ghazālī observes, is merely the absence of *naqḍ* (inconsistency);[28] and the absence of some invalidator does not constitute an indicant (*dalīl*)—indeed, believing so is akin to committing the fallacy of *argumentum ad ignorantiam*—so *ṭard* alone is insufficient, requiring another (positive) indicant. Moreover, saying the presumed *ʿilla* is affirmed with, and linked to, "its ruling" is circular; the most we can say is that the ruling is linked to its *ʿilla*. But mere linking (*iqtirān*) is no proof of genitive relation (*iḍāfa*), and linking to what is not the *ʿilla* "is like the linking of judgments to the rising of a star and a gust of wind." In the final analysis, just as establishing the ruling requires a (positive) indicant, so does establishing the *ʿilla*.

35 Moving on to the next invalid method, *ṭard* and *ʿaks* together fair no better. As exemplified by wine's peculiar odour, which is both co-present and co-absent with wine's prohibition, *al-ṭard wa-l-ʿaks* is no indicator of causality, only of some kind of linkage. Al-Ghazālī argues that this is because (as he has just shown) co-presence alone proves nothing in terms of causation, and adding co-absence brings no further efficacy since co-absence is not a necessary condition for legal causes (*ʿilal sharʿiyya*). Moreover, a property might be fully concomitant with a ruling not because it is the *ʿilla*, but because it is one of the *ʿilla*'s entailments, or one of its parts, or one of its conditions. However, al-Ghazālī considers the combination of analytical disjunction and exclusion (*al-sabr wa-l-taqsīm*) with *al-ṭard wa-l-ʿaks* to constitute a valid proof (*ḥujja*). Indeed, a valid proof is attained by combining it with *ṭard* alone, without *ʿaks*. Though one might err by missing a property in one's analysis which turns out to be the *ʿilla*, the burden of exposing missed properties lies on the claimant.

36 In response to a counter-argument—namely, that he is claiming false a method which is of preponderant belief and practice for many scholars—al-Ghazālī first responds by quoting "the Qāḍī" (Abū Bakr al-Bāqillānī) to the effect that this claim of falsification applies only to such as himself, for whom *al-ṭard wa-l-ʿaks* is nether valid nor a matter of preponderant belief (*ẓann*), not to those for whom it is both. He then disagrees with this relativist stance, however, pointing out that the very nature of *ijtihād* demands a full investigation; and this is not achieved in the case of concomitance until analytical disjunction and exclusion is joined to it. To argue from mere concomitance is to argue: What is linked to X is its *ʿilla*; this is linked to X; therefore, this is X's *ʿilla*—despite the first premise's known falsity. This is no true investigation, and so cannot form the basis of any true *mujtahid*'s "overwhelmingly preponderant belief" (*ghalabat ẓann*).[29]

37 Merging this summary with his take on natural causality, it is clearly the case for al-Ghazālī that mere concomitance (whether *ṭard* alone, or *al-ṭard wa-l-ʿaks*) or experience (*tajriba*)—even if it might pave the way towards discovering occasioning factors / causes—is insufficient. Pinpointing causation requires additional balance-tipping procedures (viz. *al-sabr wa-l-taqsīm*), be they epistemological, hermeneutical, inferential, or procedural. Based on the example of al-Ghazālī, then, we might say that a process for formulating a general schema explaining the kind of causation at work in a given case cannot be won by *dawarān* or experience alone, though these may render collections of like cases, and, perhaps, a certain regularity. But the task of formulating explicitly the precise content and form of links between the *madār*-presences and

dāʾir-presences involved in a causation claim brings any such schema out into the open, exposing it to challenges and demands for justification.

Taʿlīl, the Larger Task of Justifying the Cause, and "Arguments to the Best Explanation"

38 "Causal justification" (*taʿlīl*)—that is determining, with supporting argument, what constitutes the *ʿilla* in a given root-case—is the first and perhaps most critical task for one engaging in *qiyās*; the *ʿilla* of the root-case must be identified and justified before the ruling's transference from root-case to branch case can be claimed. To this end, Sunnī Muslim jurists developed (over centuries of continual debate and refinement) variant tool-sets which were generally called "methods" (*masālik*) of the *ʿilla* or of *taʿlīl*. These were often quite expansive, and included both commonly accepted and more controversial types, divided usually into those which derive more directly from authoritative root-sources (like when the *ʿilla* is clearly indicated in the Qurʾān or Sunna, or a subject of consensus), and those which derive more indirectly through human inference-making. It is among these latter, of course, along with other modes like "suitability [i.e., to the directives of God's Law]" (*munāsaba*) and "analytical disjunction and exclusion" (*al-sabr wa-l-taqsīm*), which we find *dawarān* / *al-ṭard wa-l-ʿaks*—that is, when it is accepted as a valid method.[30] As we have seen in the above summary, however, and may see in more detail in the appendix, al-Ghazālī lists *al-ṭard wa-l-ʿaks* among invalid modes, accepting it only in combination with *al-sabr wa-l-taqsīm*, and he was joined in this by a number of other prominent jurists.[31]

39 To be certain, however, the larger project of discovering and establishing one's claimed *ʿilla* and its connection to the root-case's ruling—and, thus, the very foundation of one's *qiyās*—goes beyond the identifying methods and tests prescribed by jurists in their listings of *masālik al-taʿlīl*. The greater task of causal justification, in other words, was—as with all justifications in Islamic legal theory—a dialectical one; and thus included many forms besides *dawarān*, *munāsaba*, *al-sabr wa-l-taqsīm*, and others of the *masālik al-taʿlīl*. Among other things, it included anticipating and responding to dialectical objections like "[intra-doctrinal] inconsistency" (*naqḍ*), "disqualifying difference" (*farq*), and "counter-indication" (*muʿāraḍa*).[32] It included detailed listings of modes for giving preponderance to one possible *ʿilla* over another (*tarjīḥāt*).[33] It involved navigating the possibility of absent conditions (*shurūṭ*, s. *sharṭ*) and present impediments (*mawāniʿ*, s. *māniʿ*), such as could block an *ʿilla*'s causation.[34] It involved the consideration of valid exceptions which might sideline one's *ʿilla* and allow a "preferred *qiyās*" to supersede it through the method of "rationalized juristic preference" (*istiḥsān*).[35] It would have played out in various ways among the specific subcategories of "drawing indication" (*istidlāl*, lit. "seeking an indicant [*dalīl*]") which such theorists as Abū Isḥāq al-Shīrāzī developed in particular connection to *qiyās* (esp., e.g., "drawing indication by way of analytical disjunction and exclusion" [*al-istidlāl bi-l-taqsīm*], which is basically the method of *al-sabr wa-l-taqsīm* in dialectical action, either as justification or objection).[36]

40 And it would certainly have factored into the trio of *qiyās*-relevant jurists' tasks, or "*ijtihād* with respect to the *ʿilla*," known as (1) *taḥqīq al-manāṭ*, or "verifying the hanging place [of the ruling]," which consists in applying an established general rule to a particular contended or current case due to simple subsumption or a shared *ʿilla* identified by revelation or consensus (or, for some jurists, rationally inferred); (2) *tanqīḥ al-manāṭ*, or "refining the hanging place [of the ruling]," which consists in isolating the *ʿilla* from all non-efficient and irrelevant properties which prevent it from being extended to parallel cases, or identifying and overriding differentia between an established rule and a particular case; and (3) "extracting the hanging place [of the

ruling]" (*takhrīj al-manāṭ*), which consists in identifying the *ʿilla* via rational inference (e.g., the inferential *masālik al-taʿlīl*) for such root-cases in which it is not explicitly identified (e.g., by univocal text or consensus).[37]

41 This wider range of causal justificatory activities—including, but not limited to, the *masālik al-taʿlīl*—may, at a future date, be classified under certain groupings which coincide with the aims of the present study. Now we would only suggest a handful of categories (tentatively, and with no claim of being either collectively exhaustive or mutually exclusive); these would include:

- procedures and methods for choosing between alternatives and eliminating choices (e.g., *al-sabr wa-l-taqsīm and al-istidlāl bi-l-taqsīm*),
- for raising alternative explanations (e.g., *muʿāraḍa*), and
- for introducing exceptions and withdrawing conclusions (e.g., *istiḥsān*).

42 Importantly, post-classical definitions and conceptions of *dawarān* popularized by such as Burhān al-Dīn al-Nasafī (d. 1288 CE) and Shams al-Dīn al-Samarqandī "completed" *dawarān*, as Young (2019, p. 281, n. 237) puts it:

> by folding suitability (*munāsaba*) into it – as the ultimate expression of "rightness of causation" (*ṣulūḥ al-ʿilliyya*) – or [by considering] a refined version of *dawarān* alongside *munāsaba* and analytical division (*al-sabr wa-l-taqsīm*), as a streamlined trio of complementary and mutually supportive methods.

Together with what has just been argued, it is evident that the larger project of justifying one's choice of occasioning factor as the most correct (or just, or reasonable) not only involved a whole gamut of methods and procedures, but also encouraged—or even required—their application in concert with one another.

43 All told, then, we might posit that the outcome of such methods and their concatenation were, or should have been, productive of arguments that:

1. led to a grasping of the universality of Law in the particular;
2. had an explanatory power beyond statistical confirmation, providing the answer to *how* the occasioning factor fulfils the duty of causation;
3. outperformed competing solutions, in relation to the available epistemology, textual sources, and hermeneutics; and
4. were sensitive to dynamic information inputs.

Points 1 and 2 relate to the above-mentioned notion that experience (*tajriba*) alone cannot yield universal laws and, as we will discuss further below, that *istiqrāʾ* should not be reduced to a merely statistical induction. This is crucial if applications of *dawarān* are to be epistemologically fruitful. The third point, intertwined with and resultant of the first two, emphasizes that inquiring into the right occasioning factor was a dialectical endeavour whereby anticipating potential objections—and responding to real-time objections—might ground the choice of one occasioning factor over another, suggest an alternative one, or assist in selecting one from among several competing claims. Finally, the fourth point is simply that such dialectical inquiries were dynamic, in the sense that one's conclusion could be revised in view of counterarguments introduced during the dialogical exchange. In what follows, we will elaborate on these points.

Istiqrāʾ and Abduction

44 Since the earliest translations of Aristotle into Arabic, the Greek *ἐπαγωγή* (*epagōgē´*) was rendered as *istiqrāʾ*;[38] not surprisingly, the standard English translation of *istiqrāʾ* is therefore "induction." With this in mind, we might say that *istiqrāʾ* furnishes the grounds upon which *dawarān* is based; and if *dawarān* is ever to provide more than statistical knowledge, *istiqrāʾ* should also have some explanatory

power. In contemporary epistemology, both features—the statistical and the explanatory—are distinguished following the terminology of Peirce; namely, *induction* and *abduction*. And, as Douven (2021) observes:

> both are ampliative, meaning that the conclusion goes beyond what is (logically) contained in the premises (which is why they are non-necessary inferences), but in abduction there is an implicit or explicit appeal to explanatory considerations, whereas in induction there is not; in induction, there is only an appeal to observed frequencies or statistics.

Thus, inductive inferences "may be characterized as those inferences that are based purely on statistical data, such as observed frequencies of occurrences of a particular feature in a given population" (Douven 2021).

45 Notice, however, that the statistical information must not be quantitative, but a qualitative comparison of cardinality. For example:[39]

- Most 11th-12th c. CE Muslim thinkers wrote primarily in Arabic;
- al-Ghazālī was an 11th-12th c. CE Muslim thinker;
- Therefore, al-Ghazālī wrote primarily in Arabic.

Importantly, this does not show *why* most 11th-12th c. CE Muslim thinkers wrote primarily in Arabic. The frequent occurrence of Muslim thinkers who wrote primarily in Arabic does not *prove*, but—to borrow the words of Hallaq (1990, p. 3-5)—it lends *corroborative* support to the first premise. And, in so doing, it suggests that the best way to distinguish between induction and abduction is precisely as Douven has it in the citation above: "in abduction there is an implicit or explicit appeal to explanatory considerations, whereas in induction there is not; in induction, there is only an appeal to observed frequencies or statistics."

46 It is clear that in juristic contexts carrying out a survey in order to establish a universal law by means of *istiqrāʾ* requires examining sources and cases which are, in principle, quite different, but nevertheless suitable to be subsumed under the same law. In consequence, the explanatory hypothesis for the examined cases' causation will appear to shape the generalization underlying this kind of *istiqrāʾ*. Furthermore, when we shift from legal to natural causation, this explanatory element in *istiqrāʾ* will be presupposed, but, in our view, not sufficiently stressed.

47 A common example of juristic *istiqrāʾ*, as discussed by Hallaq (1990, p. 6-7, citing al-Ghazālī among others), is the case of the non-obligatory payer known as *watr*. The argument might be formulated as follows:

- No obligatory prayers examined in our survey are allowed to be performed while on a journey;
- *Watr* is allowed to be performed while on a journey;
- Therefore, *watr*—despite not being mentioned in the survey—is recommended, not obligatory.

Note that the first premise has only "corroborative support," but nevertheless aims at providing an explanation as to why *watr* is recommended, not obligatory. Moreover, Hallaq's (1990) very choice of the term *corroboration* suggests that the search for, and recording of, a regularity of occurrences, which is implemented through *istiqrāʾ*, constitutes an answer to a causation question. Indeed, what precisely is being corroborated, if not some causation claim? The survey itself is led by the causation conjecture that whether or not prayers are allowed to be performed on a journey has something to do with whether or not they are merely recommended or obligatory: without this initial conjecture there is nothing guiding us to which regularity we should observe.[40]

48 This seems all the more clear if we refer directly to al-Ghazālī's treatment of *istiqrāʾ* in his *Mustaṣfā*. Note also that his discussion clearly exposes the dialectical

environment of causal justification in Islamic jurisprudence. In our translation, the relevant section reads as follows:[41]

> As for *istiqrāʾ*, it is an expression which denotes the examination (*taṣaffuḥ*) of particular things [cases] so that we might judge by their ruling for something which includes those particulars.
>
> It is like our saying, with regard to *watr*: "It is not obligatory, because it is performed on a journey, and the obligatory [prayer] is not performed on a journey." Then it is said: "Why did you say that the obligatory [prayer] is not performed on a journey?" So, it is said: "We know it by way of *istiqrāʾ*, since we saw that the make-up performance [of a prayer] (*qaḍāʾ*), and the on-time performance (*adāʾ*), and the subject of a vow (*mandhūr*), and the rest of the types of obligatory [prayers] are not performed on a journey; thus, we said: All obligatory [prayers] are not performed on a journey."
>
> The manner of indication of this is not completed except by the first arrangement [i.e., the first figure], in that we will say: "Every obligatory [prayer] is either an on-time performance, a make-up performance, or a vow; and every make-up performance, on-time performance, and vow is not performed on a journey; therefore, Every obligatory [prayer] is not performed on a journey."
>
> But this is something uncertain (*mukhīl*), which is right for propositions of preponderant belief (*ẓanniyyāt*) but not propositions of certainty (*qaṭʿiyyāt*). The shortcoming is under his saying "either an on-time performance," for his ruling that "every on-time performance is not performed on a journey" will be denied by the opponent—since *watr*, according to him, is an obligatory performance, and is performed on a journey.
>
> Of the on-time performances, the opponent will concede only the five prayers, and this is a sixth prayer, according to him, so he will say: "Did you examine (*hal istaqrayta*) the ruling of *watr* in your examination? And how did you find it?" Then if you say: "I found that it is not performed on a journey," then the opponent will not concede. And if you did not examine it, then nothing but *some* of the on-time performances are evident to you, so the second premise departs from being general and becomes specific. But that does not conclude, because we have explained that the second premise in the first arrangement has to be general.
>
> Due to this, the one who says: "The Maker of the world is a body" has erred (*ghalaṭa*), because he says: "Every agent is a body; and the Maker of the world is an agent; therefore, He is a body." Then it is said: "Why did you say 'Every agent is a body'?" So he will say: "Because I examined the agents among tailors, masons, shoemakers, cuppers, blacksmiths, and others, and I found them all to be bodies." And it will be said: "And did you examine the Maker of the world, or not? For if you did not examine Him, then you have examined *some* but not all, and found some of the agents to be bodies, so the second premise has become specific and does not conclude. But if you examined the Creator, then how did you find Him? For if you say: 'I found Him to be a body,' then this is the very point of contention —so how have you inserted it into the premise?"
>
> By this it is affirmed that if the *istiqrāʾ* is complete, then it reverts to the first arrangement [i.e., the first figure], and is right for propositions of certainty (*qaṭʿiyyāt*). But if it is not complete, then it is right for nothing but juristic propositions (*fiqhiyyāt*), because whenever the greater part is found to be in a particular manner, it becomes an overwhelmingly preponderant belief (*ghalaba ʿalā al-ẓann*) that the others are likewise.

49 With *istiqrāʾ* providing the grounds for concomitance, it would seem that the justification of a causal link between a claimed *madār*'s existence and its corresponding *dāʾir*'s existence is corroborated by affirming the universal law suggested by the *dawarān*. However, this corroboration is (almost?) never complete, which strongly suggests that *istiqrāʾ* can only ever be a part of any larger endeavour of causal justification, which, as we have argued above, may involve the whole gamut of dialectical means for determining the *ʿilla*.

Arguments, Rather than Inferences, to the Best Explanation

50 Based on the preceding, we would suggest that, in order to capture the general gist of causal justification in Islamic legal theory and dialectic, we should focus on abduction rather than induction—more precisely, on *arguments to the best explanation* (abduction being of course most closely associated with "inference to the best explanation"). In comparing standard and improved explications of abduction, Douven (2021)[42] provides a third, more complete, and insightful formulation:

> Given evidence E and candidate explanations H_1,..., $H_n$of E, if H_i explains E better than any of the other hypotheses, infer that H_i is closer to the truth than any of the other hypotheses.

As Douven next points out, this formulation "clearly… requires an account of closeness to the truth, but many such accounts are on offer today."

51 As for the context of Islamic legal theory and dialectic, however, we might observe the following:

- Degrees of "closeness to the truth" were achieved by confronting competing solutions with series of criteria for preponderance and preference, which were established by jurists in consideration of manifold sources.[43] (Note that in consequence, if we wish to apply similar preponderance and preference criteria to natural causation claims, then a suitable extension of the legal criteria must be developed.)
- Pools of competing solutions were often generated by defining legitimate dialectical objections and responses which could govern rebuttal and further dialectical interaction until some agreement was settled. (Note that competing solutions might propose the same conclusion while also providing better explanations for a ruling's establishment—i.e., a more plausible occasioning factor[44]—or they might indicate that not only does the claimed property not occasion the claimed ruling, but it occasions another ruling wholly incompatible to that which is claimed.)

These two observations suggest that, in the context of Islamic legal reasoning, we should rather speak of *arguments* (rather than inferences) *to the best explanation*, thus evoking a dynamic picture allowing the display of whole structures of sub-arguments, sensitive to changes, at the play-level.

52 Perhaps the simplest articulation is to say that the larger project of causal justification in Islamic legal theory and dialectic has a double nature; namely:

1. As a set of justification procedures; and
2. As the result of such procedures.

In the first sense it is an act and in the second an object. As an act, it is a set of dialectical processes involving epistemological, hermeneutical, logical, and legal inquiries which can prompt sub-arguments based on objections and responses, counter-objections and counter-responses, until the matter is settled. And when that matter is settled, an object is produced: the justification, as a piece of evidence.

53 As for acts of withdrawing, or choosing between different alternatives, they occur, primarily, at the *procedural level*, that is, at the level of the process of justification. In dialogical logic this is called the play-level: the level of practice in action.[45] In contemporary logic, however, this kind of dynamics is called non-monotony (usually ascribed to both induction and abduction), and is placed at the object-level: the justified premises. Thus, an inference is said to be non-monotonic if new information might produce the withdrawal of a conclusion, even if the latter is inferred by a logically sound inference rule. To refer to an often (perhaps too often) deployed example: Given that *All*

birds fly, and *Tweety is a bird*, then, by the modus ponens (or more precisely: by elimination of the universal!) *Tweety flies*. However, new information, such as *Tweety is a Penguin*, leads to a withdrawal of the conclusion, and an obstruction to the use of the modus ponens in view of this new information. Thus, within such a framework, inferences and/or implications are said to be "defeasible."

54 From a dialectical stance, on the other hand, it is the *process* that settles the justification of each of the premises placed under scrutiny. It is not the justified implication or inference that is *defeasible* or *non-monotonic*, but, rather, it is the justification process that is the target of possible revision, endorsement, or re-assessment. And this process has its own dynamic, regulated by a dialectical framework within which—at least in the legal realm—preference and preponderance criteria guide us in drawing the best choice so far as knowledge of the contended subject goes; and, importantly, these criteria are also the subject of constant scrutiny. Be that as it may, and leaving contemporary, non-monotonic logicians to deal with their own worries and means, the double nature of causal justification in Islamic legal theory, so we suggest, offers a novel, patently dialectical approach to what should be called *argument* (rather than inference) *to the best explanation*.

Conclusion and Work Ahead

55 Having recognized a patently abductive method of reasoning at work in an ancient tale, Prof. Prashant Keshavmurthy (McGill University, Institute of Islamic Studies) asked, in an email correspondence, whether or not there was a theory of abduction in the Islamicate logical and dialectical traditions.[46] The answer, so far as the authors of this study now see it, is a definitive "Yes." There is, in Islamic legal theory and dialectic, both a theory and practice of *argument to the best explanation*. Moreover, this theory and practice constitutes an original and more general form of dialectical, abductive reasoning that combines

1. a gamut of procedures for justifying the choice of one argument over another; and
2. a transference procedure of parallel reasoning that allows the extension of a ruling's scope of application to new cases not yet integrated into the body of the Law.

The second feature of this novel form of abduction, i.e., the transference procedure, includes an important difference with respect to contemporary approaches to abduction; namely, the fact that the *ʿilla* and *ḥukm* of the root-case (the explanandum) might be refined or reassessed (e.g., by *istidlāl bi-l-taqsīm*, or the objection of *farq*), or even supplanted in favour of an exception (by *istiḥsān*). The dialectical form of abduction at work in juristic *qiyās* is more general than contemporary approaches precisely because the explanandum might remain an object of further scrutiny, in relation to a continued search for appropriate explanatory premisses. Moreover, such justification and transference procedures require that the overall operation be made explicit, and that the efficient process (or function) occasioning presences of the ruling from presences of the property (or properties) be identified.

56 Returning now to *dawarān*, we may therefore say that it prescribes exactly that one examines if the claimed presences of the *madār* are concomitant with the ruling whose *ʿilla* is the object of inquiry. Indeed, if we recall our previous analysis, it suggests that a kind of implication, or even some form of bi-implication, is involved:

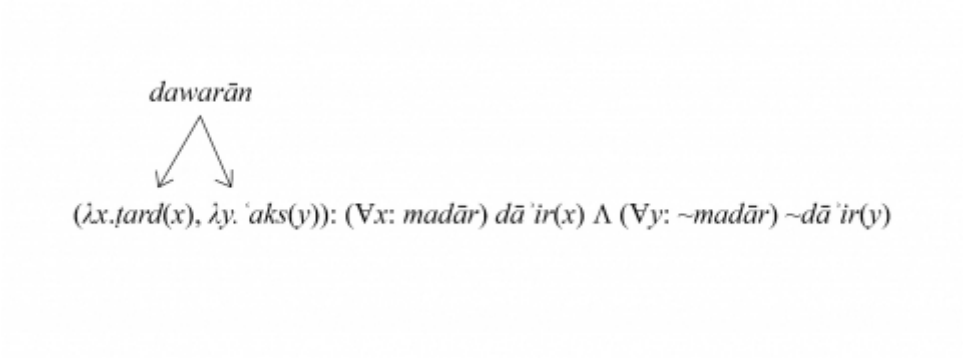

Fig. 5

57 But let us shift focus to the challenges one will face if the efficient causal process is left implicit or thought to be encoded in the *madār*:

> X ! (∀*x*: *madār*) *dāʾir*(*x*) ∧ (∀*y*: ~*madār*) ~*dāʾir*(*y*),
>
> [NB: the exclamation mark indicates that interlocutor **X** affirms that (s)he is in possession of some method (based on *ṭard* and ʿ*aks*) for justifying the conjunction —but without making this method explicit.]

Note this does not allow us to question the exact process claimed by X to justify the assertion. Moreover, if we take seriously the fact that mere concomitance is not sufficient, we will require additional dialectical procedures to corroborate the causation claim—and, also, to give it preponderance over alternative arguments—and this will require that the deployed justification procedure be made explicit.

58 But instead, let us go a step further towards a simplified concept of *dawarān*, and present it as the conjunction of two implications with implicit domain, as in standard, first-order logic:

> **X** ! ∀*x madār*(*x*)⊃ *dāʾir*(*x*) ∧ ∀*y*: ~*madār*(*x*) ⊃ ~*dāʾir*(*y*)

Note that if the *madār* is multiple—that is, there is a compound of concomitant properties such that some (e.g., the smell or colour of wine) are inseparable from those which are efficient—then the above analysis, which leaves the existence of tokens of the claimed *madār* tacit, is quite unhelpful.

59 What we need for the analysis of such cases is not only a means by which to record the concomitance of a property's existence with its claimed legal effect, but also a means by which to distinguish the causal contribution of each of the components—particularly when these components constitute a mereological whole:

47

48

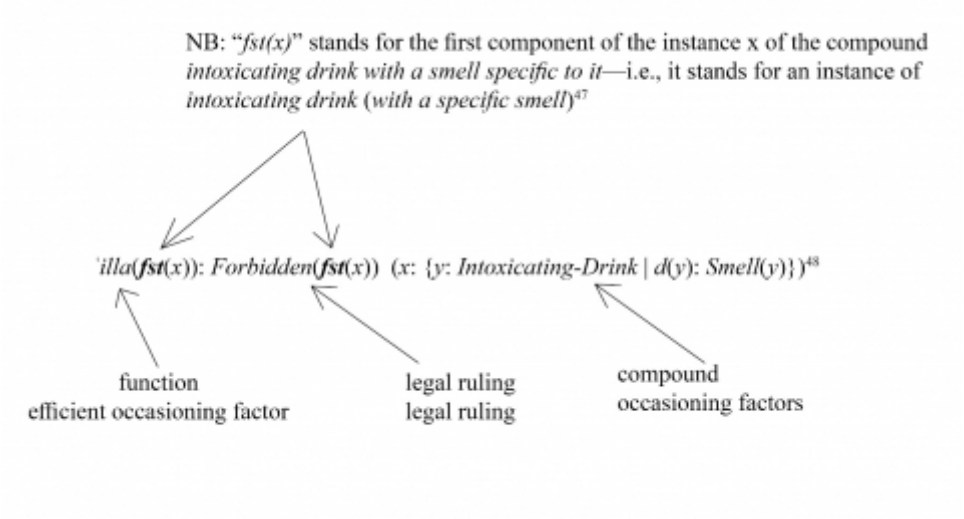

Fig. 6

60 Alternatively, if we express this as an implication, even one with a tacit efficient cause, an analysis aiming to identify the relevant compound will indicate, in our example, that the interdiction for consumption has, as scope, all instances of intoxicating drinks:

X ! {∀z: (x: Intoxicating-Drink | Smell(x))} Forbidden(**fst**(z))[49]

Note that the mere experience of a regular concomitance does not yield the distinction between relevant and non-relevant components. Not surprisingly, for a number of Muslim theorists, distinguishing relevant from non-relevant components in a mereological whole came as a result of further dialectical inquiry—lead by the insight that mere concomitance is not enough to approach preponderant belief (*ẓann*), much less certainty (*qaṭʿ*)—even for those that considered *dawarān* an important epistemological step.[50]

61 One of the consequences of all this is that it highlights challenges faced by approaches which introduce logical connectives (esp. necessary implication) for the analysis of causation, such as al-Nasafī and al-Samarqandī appear to attempt[51]—an apparent objective of which might have been to develop a general theory of causation, encompassing both the legal and the natural realms. However, should causation be expressed by some kind of necessary implication, that expression will be faced with the challenges of

1. compound antecedents, as with the multiple / compound *madār*s mentioned above;
2. integrating the dynamic of the dialectical account of causation—including a theory of argument to the *best explanation*; and
3. avoiding the reduction of causal to purely analytical assertions.

The second and third challenges may perhaps be overcome by producing different modalities, analogous to notions of "near," "distant," and "even" possibility.[52] However, with respect to including a theory of argument to the best explanation, the real obstacle will be to provide a theory of preponderance or preference (with an associated framework of dialectical moves for objecting and rebutting) that also applies to the natural realm—if, in the end, it is acknowledged that the regularity of concomitance has insufficient corroborative force.

62 Furthermore, it is possible that the introduction of necessary implication into accounts of causation was, in some cases, linked to a (re-)consideration of necessary and accidental occasioning properties.[53] This relates to the first and third challenges. On the one hand, the distinction of accidental and essential properties is important for distinguishing which are truly efficient, but on the other hand, once we assume essential properties, the dialectical dynamics will disappear—unless, that is, we restrict ourselves to our epistemic limits, saying, e.g., "there are essences, but because of our human limitations we may have identified the wrong ones." And in this case, some kind of necessary implication will have to be defined which is, after all, defeasible.

63 In conclusion, it is clear that in al-Ghazālī's take on causation—natural or legal—the explanatory power of a causation claim cannot be achieved by experience (*tajriba*) / concomitance (*al-ṭard wa-l-ʿaks*) alone. These may provide useful observations of particulars, however, and explanatory power stems from grasping the presence of the universal in the particular. The very existence of the universal amounts to the presences of the particulars which instantiate it, and the task is to develop that pressing cognitive skill: regular concomitance helps to corroborate a conjectured occasioning factor. This is what *dawarān* provides, but it is not enough.[54]

64 According to our view, this grasping of the universal is prompted, in the legal realm, by the various abductive methods found within the dialectical framework of *qiyās*, and especially its larger, critical project of causal justification. The key point here is that the legal framework provides a theory allowing one to identify the best causation argument from among competing arguments. Occasionally this will even yield certain (*qaṭʿī*)

knowledge (for example, when the cause is directly identified in revelation), but mostly it will not. However, even in the latter case, the diverse dialectical methods will yield a "preponderant belief" (*ẓannī*) level of knowledge which can be taken as most likely vis-à-vis the available justification and testing methods.

65 However, if such a methodology is to be transferred from the legal to the natural realm, then we will need, among other things, some efficient instruments for choosing the most likely explanation. At this point in our research, we cannot yet say how this could be (or was?) achieved, though the pathway likely involves appeals to certain metaphysical, as well as epistemological, principles. This suggests that quite a large amount of work lies ahead; but we are eager to further explore the avenues which Islamic legal theoretical and dialectical traditions have opened with regard to causal justification, and welcome further comment and collaboration.

Appendix: al-Ghazālī on the inutility of concomitance as a test for causation

66 Sources:

67 [ب] = [B] : al-Ghazālī, *Al-Mustaṣfā*, Būlāq ed. 2.307-9

68 [ح] = [Ḥ] : al-Ghazālī, *Al-Mustaṣfā*, Ḥāfiẓ ed., 3.635-9

[B 2.307] [Ḥ 3.635]	[ب 2.307] [ح 3.635]
The Second [Invalid] Mode: Seeking proof for the validity [of the *ʿilla*] by virtue of its being co-present with (*iṭṭirād*) and applicable to (*jarayān*) its ruling (*ḥukm*). There is no meaning to this other than [the *ʿilla*'s] being free of a single invalidator; namely, inconsistency (*naqḍ*). For it is like one asserting "Zayd is knowledgeable because there is no indicant (*dalīl*) invalidating the claim of [his] knowledge." But this is counter-indicated by [saying] "He is ignorant because there is no indicant invalidating the claim of [his] ignorance." The truth is that his being knowledgeable is not known by the negation of the indicant of ignorance, nor is his being ignorant [known] by the negation of the indicant of knowledge. On the contrary, for this one depends on the clear manifesting of an indicant; and likewise is it for [claims of] validity and invalidity.[55]	**المسلك الثاني الاستدلال على صحتها باطرادها وجريانها في حكمها** * وهذا لا معنى له إلا سلامتها عن مفسد واحد وهو النقض * فهو كقول القائل زيد عالم لأنه لا دليل يفسد دعوى العلم * ويعارضه أنه جاهل لأنه لا دليل يفسد دعوى الجهل * والحقّ أنه لا يعلم كونه عالماً بانتفاء دليل الجهل ولا كونه جاهلاً بانتفاء دليل العلم * بل يتوقّف فيه إلى ظهور الدليل فكذلك الصحة والفسا *
If it is said: The affirmation of its ruling along with it, and [the ruling's] being linked with it, is an indicant (*dalīl*) of its being an *ʿilla*. Then we will say: You have erred / committed a fallacy (*ghaliṭ-tum*) in saying "the affirmation of its ruling," because this is a [genitive] relating of the ruling to it which is not affirmed except for after the furnishing of an indicant for its being an *ʿilla*.[56] And if it is not affirmed, then it will not be "its ruling." On the contrary, it will be the ruling of its *ʿilla*, and linked to it. But a linking does not indicate a [genitive] relation. For there might be entailed of wine a colour and a taste to which the prohibition is linked, being co-present and co-absent, while the *ʿilla* is [its] intoxication. And its linking to what is not an *ʿilla* is like the linking of judgments to the rising of a star and a gust of wind.	فإن قيل ثبوت حكمها معها واقترانه بها دليل على كونها علّة * قلنا غلطتم في قولكم ثبوت حكمها لأن هذه إضافة [ح / 3.636] للحكم إليها[57] لا تثبت إلا بعد قيام الدليل على كونها علّة * فإذا لم يثبت لم يكن حكمها [[بل كان حكم علته]][58] واقترن بها والاقتران لا يدلّ على الإضافة * فقد يلزم الخمر لون وطعم يقترن به التحريم ويطرد وينعكس والعلّة الشدّة واقترانه بما ليس بعلّة كاقتران الأحكام بطلوع كوكب وهبوب ريح *
In general, establishing the *ʿilla* is a manner of opinion which requires an indicant (*dalīl*)—just like positing the ruling (*ḥukm*). And for establishing the ruling it does not suffice that there is no inconsistency brought against it, nor anything invalidating it. On the contrary, it must have an indicant; and the same holds for the *ʿilla*.	وبالجملة فنصب العلّة مذهب يفتقرّ إلى دليل كوضع الحكم * ولا يكفي في إثبات الحكم أنه لا نقض عليه ولا مفسد له * بل لا بدّ من دليل فكذلك العلّة *
The Third [Invalid] Mode: Co-Presence and Co-Absence (*al-ṭard wa-l-ʿaks*). A group of scholars has said: If the ruling (*ḥukm*) is affirmed with the property (*waṣf*), and disappears with its disappearance, this indicates that it is an *ʿilla*.	**المسلك الثالث الطرد والعكس** * وقد قال قوم الوصف إذا ثبت الحكم معه وزال مع زواله يدلّ على أنه علّة *

But this is invalid, because a special odour is linked to the intoxication in wine, and the prohibition disappears upon its disappearance, and is renewed upon its renewal, but it is not an *ʿilla*. Rather, it is something linked to the *ʿilla*.	وهو فاسد لأن الرائحة المخصوصة مقرونة بالشدّة في الخمر ويزول [ب / 2.308] التحريم عند زوالها ويتجدّد عند تجدّدها وليس بعلّة * بل هو مقترن بالعلّة *
[Ḥ 3.637] This is because existence upon existence is pure co-presence (*ṭard maḥḍ*),[59] and the addition of co-absence (*ʿaks*) has no effect, because co-absence is not a [necessary] condition (*sharṭ*) for legal causes (*ʿilal sharʿiyya*).[60] So no effect belongs to its existence and nonexistence. And [this is] because it is possible that its disappearance upon its disappearance is due to its being in an implicative relation (*mulāzama*) with the *ʿilla*—like the odour [of wine]—or due to its being one of the parts of the [compound] *ʿilla*, or one of its conditions (*shurūṭ*), while the ruling (*ḥukm*) is negated by negation of one of the conditions of the *ʿilla*, and of one of its parts. And if [these] possibilities [are allowed to] contradict, then there is no meaning to arbitrariness (*taḥakkum*).	[ح / 3.637] وهذا لأن الوجود عند الوجود طرد محض فزيادة العكس لا تؤثر لأن العكس ليس بشرط في العلل الشرعية فلا أثر لوجوده وعدمه * ولأن زواله عند زواله يحتمل أن يكون لملازمته للعلّة كالرائحة أو لكونه جزءاً من أجزاء العلّة وشرطاً[61] من شروطها * والحكم ينتفي بانتفاء بعض شروط العلّة وبعض أجزائها * فإذا تعارضت الاحتمالات فلا معنى للتحكّم *
Overall, we concede that that [thing] by virtue of the affirmation of which the ruling (*ḥukm*) is affirmed is an *ʿilla*. So how can it be, if one adds to that its disappearing by virtue of its disappearance? As for what is affirmed with its affirmation, and disappears with its disappearance, its being an *ʿilla* is not entailed—like the special odour linked to the intoxication [in wine].	وعلى الجملة فنسلّم أن ما ثبت الحكم بثبوته فهو علّة * فكيف إذا انضمّ إليه أنه زال بزواله * أما ما ثبت مع ثبوته وزال مع زواله فلا يلزم كونه علّة كالرائحة المخصوصة مع الشدّة *
As for if [the valid mode of] analytical disjunction and exclusion (*sabr was taqsīm*) is added to it, then this constitutes a proof (*ḥujja*)—just like if he were to say: This ruling (*ḥukm*) has to have an *ʿilla*, because it came to be by virtue of the coming to be of something which comes to be (*ḥādith*), and there is no thing which comes to be by virtue of which it is possible to determine the *ʿilla* except for this and that and the other, and all are nullified except for this one, so it is the *ʿilla*. The like of this analytical disjunction and exclusion constitutes a proof (*ḥujja*) with respect to pure co-presence (*ṭard maḥḍ*) even if co-absence (*ʿaks*) is not added to it. Nothing counts against this except that perhaps another property (*waṣf*) eluded him which is the *ʿilla*. [Ḥ 3.638] Nor is the qualified jurist (*mujtahid*) obliged to anything besides an analytical disjunction and exclusion (*sabr*) in accordance with what is in his power to do; nor is the dialectical disputant (*nāẓir*) obliged to anything besides that. It is for the one claiming another property to bring it to light, so that it may be investigated / debated.	أما إذا انضمّ إليه سبر وتقسيم كان ذلك حجّة * كما لو قال هذا الحكم لا بدّ له من علّة لأنه حدث بحدوث حادث ولا حادث يمكن أن يعلّل به إلا كذا وكذا وقد بطل الكلّ إلا هذا فهو العلّة * ومثل هذا السبر حجّة في الطرد المحض وإن لم ينضمّ إليه العكس * ولا يرد على هذا إلا أنه ربما شذّ عنه وصف آخر هو العلّة * [ح / 3.638] ولا يجب على المجتهد إلا سبرٌ بحسب وسعه * ولا يجب على الناظر غير ذلك * وعلى من يدّعي وصفاً آخر إبرازه حتّى ينظر فيه *
And if it is said: So what is the meaning of your nullifying adherence to [the method of] co-presence and co-absence (*al-ṭard wa-l-ʿaks*), while you have seen the qualified jurists' assent (*taṣwīb al-mujtahidīn*), and this has become an overwhelmingly preponderant belief (*ghalaba ʿalā ẓann*) for a group of scholars? For if you say: "They are not allowed to judge by way of it," then that is absurd (*muḥāl*), since the qualified jurist is obliged to nothing but judging by way of preponderant belief (*ẓann*). And if you say: "It has not become an overwhelmingly preponderant belief (*ghalaba ʿalā ẓann*) for them," then that is absurd, because this has [indeed] become an overwhelmingly preponderant belief for a group of scholars—were it otherwise, then they would not have judged by way of it. We will say: The Qāḍī [al-Bāqillānī?], may God have mercy on him, responded to this, saying: By its nullification we mean that it is nullified insofar as we are concerned, because it is not valid according to us, and has not become an overwhelmingly preponderant belief for us (*lam yaghlib ʿalā ẓanninā*). As for whoever	فإن قيل فما معنى إبطالكم التمسك بالطرد والعكس وقد رأيتم تصويب المجتهدين وقد غلب هذا على ظنّ قوم * فإن قلتم لا يجوز [ب / 2.309] لهم الحكم به فمحال * إذ ليس على المجتهد إلا الحكم بالظنّ * وإن قلتم لم يغلب على ظنّهم فمحال لأن هذا قد غلب على ظنّ قوم ولولاه لما حكموا به * قلنا أجاب القاضي رحمه الله عن هذا بأن قال نعني بإبطاله أنه باطل في حقّنا لأنه لم يصحّ عندنا ولم يغلب على ظنّنا * أما من غلب على ظنّه فهو صحيح في حقّه *

it has become an overwhelmingly preponderant belief for, then it is valid insofar as he is concerned.	
But this is debatable according to me, because the qualified jurist (*mujtahid*) is one who hits the mark (*muṣīb*) if he exhaustively fulfils and completes the investigation (*naẓar*). As for if he judges by preceding opinion and first estimation, then he is one who errs. And if he analytically divides (*sabara wa qassama*), then he has completed the investigation and hit the mark.	وهذا فيه نظر عندي لأن المجتهد مصيب إذا استوفى النظر وأتمّه * وأما إذا قضى بسابق الرأي وبادئ الوهم فهو مخطئ * فإن سبر وقسّم فقد أتمّ النظر وأصاب *
As for his judging, before analytical disjunction and exclusion (*al-sabr wa-l-taqsīm*), that what is linked to something must be an *ʿilla*, it is arbitrariness (*taḥakkum*) and delusion (*wahm*), since the entirety of his indicant (*dalīl*) is: What is linked to something is its *ʿilla*; this is linked to it; therefore it is its *ʿilla*.[62] [Ḥ 3.639] But the first premise is contradicted (*manqūḍa*) by innumerous things. Consequently, it is as though he did not investigate, and did not complete the investigation (*naẓar*), and did not discover the suitability (*munāsaba*) of the *ʿilla*, and did not reach [his conclusion] via analytical disjunction and exclusion. There remains, for one whose mode of discovery this is, no overwhelmingly preponderant belief by mere co-presence (*al-ṭard al-mujarrad*)—unless he is ignorant, deficient in rank from the degree of the qualified jurists (*mujtahidīn*); and whoever does *ijtihād* but is not qualified for it is someone who errs.	أما حكمه قبل السبر والتقسيم بأن ما اقترن بشيء ينبغي أن يكون علّة تحكّم[63] ووهم إذ تمام دليله أن ما اقترن بشيء فهو علّته * وهذا قد اقترن به فهو إذاً علّته * [ح 3.639 /] والمقدّمة الأولى منقوضة بالطِّمِّ والرِّمِّ * فإذاً كأنه لم ينظر ولم يتمم النظر ولم يعثر على مناسبة العلّة ولم يتوصل إليه بالسبر والتقسيم * ومن كشف له هذا لم يبق له غلبة ظنّ بالطرد المجرّد إلا أن يكون جاهلاً ناقص الرتبة عن درجة المجتهدين * ومن اجتهد وليس أهلا له فهو مخطئ *
But, according to me, the "extraneous suitable" (*al-munāsib al-gharīb*)[64] and "textually unregulated proof-seeking" (*al-istidlāl al-mursal*)[65] are not like this. For these are things which necessitate preponderant belief [for the *ʿilla*] for some of the qualified jurists, while there is no definitively certain indicant (*dalīl*) furnished for it such that whoever knows it his doubt is effaced—in contrast to mere co-presence (*al-ṭard al-mujarrad*) unaccompanied by analytical disjunction and exclusion (*sabr wa taqsīm*).	وليس كذلك عندي المناسب الغريب واستدلال المرسل فإنّ ذلك ممّا يوجب الظنّ لبعض المجتهدين وليس يقوم فيه دليل قاطع من عرفه انمحق[66] ظنّه بخلاف الطرد المجرّد الذي ليس معه سبر وتقسيم *

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Notes

1 That is, what might be called mainstream Sunnīs (excluding, e.g., the Ẓāhirīs and certain Ḥanbalīs). On the Ithnā ʿAsharī Shīʿī rejection of *qiyās*, see Gleave, Robert (2002), *Studies in Islamic Legal Theory*, p. 267-293. On the choice of "correlational inference," which renders a narrower sense more consonant with the Shāfiʿī approach, see Young, Walter E. (2017), *The Dialectical Forge: Juridical Disputation and the Evolution of Islamic Law*, Cham, Springer, p. 10, p. 94-5, p. 104-5, p. 109-28, *passim*.

2 The summary of al-Shīrāzī's *qiyās* theory presented here follows similar overviews in Rahman, Shahid, Walter E. Young & Farid Zidani (2021), "It Ought to be Forbidden! Islamic Heterenomous Imperatives and the Dialogical Forge", in Cristina Barés-Gómez, Francisco J. Salguero and Fernando Soler (eds.), *Lógica Conocimiento y Abduccción. Homenaje a Angel Nepomuceno*, London, College Publications, p. 97-114 and Rahman, Shahid & Walter E. Young (Forthcoming), "Outside the Logic of Necessity: Deontic Puzzles and 'Breaking' Compound Causal Properties in Islamic Legal Theory and Dialectic." *Vivarium*. For an extensive outline of *qiyās* with its many component considerations and sub-discourses, see Hasan, Ahmad (1986), *Analogical Reasoning in Islamic Jurisprudence: a Study of the Juridical Principle of Qiyās*, Islamabad, Islamic Research Institute. Young, Walter E. (2017), *The Dialectical Forge* provides a summary of al-Shīrāzī's systematization of *qiyās*; and on this basis Rahman, Shahid, Muhammad Iqbal & Youcef Soufi (2019), *Inferences by Parallel Reasoning in Islamic Jurisprudence. Al-Shīrāzī's Insights into the Dialectical Constitution of Meaning and Knowledge*, Cham, Springer develop a logical analysis (see also Iqbal, Muhammad (2021), *Arsyad al-Banjari's Approaches to Rationality: Argumentation and Sharīʿa*, PhD Diss., Université de Lille). Relevant chapters from some of al-Shīrāzī's edited legal theory works are listed in the bibliography (al-Shīrāzī 1986, 1987, 1988, 1995).

3 In referring to the *ʿilla* as the "occasioning factor" we follow Weiss, Bernard (2010), *The Search for God's Law: Islamic Jurisprudence in the Writings of Sayf al-Din al-Āmidī*, Revised edition,

Salt Lake City, University of Utah Press, p. 546-7, p. 585-624, *passim*. NB: we will distinguish two senses of "occasioning factor" below.

4 See Shahid Rahman, Muhammad Iqbal, & Youcef Soufi (2019), *Inferences by Parallel Reasoning in Islamic Jurisprudence*, preface.

5 See Young, Walter E. (2019), "Concomitance to Causation: Arguing Dawarān in the Proto-Ādāb al-Baḥth", in Peter Adamson (ed.), *Philosophy and Jurisprudence in the Islamic World*, Berlin/Boston, De Gruyter, p. 205-281 and Ahmad Hasan (1986), *Analogical Reasoning in Islamic Jurisprudence*, p. 315-330. NB: "efficiency" (*ta'thīr*) was not always conceived of in the same way; al-Ghazālī, for one, deemed it not to be co-presence and co-absence, but a direct designation of the occasioning factor (*ʿilla*) by either univocal source-text (*naṣṣ*) or consensus (*ijmāʿ*), while others held still different notions (see Ahmad Hasan (1986), *Analogical Reasoning in Islamic Jurisprudence,* p. 272-3, p. 284).

6 See Walter E. Young (2019), "Concomitance to Causation", p. 205-281, Young, Walter E. (Forthcoming A), "Islamic Legal Theoretical and Dialectical Approaches to Fallacies of Correlation and Causation (7th-8th/13th-14th centuries)", in Robert Gleave and Murteza Bedir (eds.), [Edited volume from the conference "*Islamic Legal Theory: Intellectual History and Uṣūl al-Fiqh*" Istanbul, 2019] and Young, Walter E. (Forthcoming B), "On the Insufficiency of Concomitance Alone, from Ibn al-Ḥājib's Mukhtaṣar, with al-Ījī's Sharḥ and al-Taftāzānī's Ḥāshiya", in Omar Anchassi and Robert Gleave (eds.), *Islamic Law in Context: A Primary Source Reader*, Cambridge, Cambridge University Press.

7 From this point on, and to reduce clutter, we will mostly prefer the simpler term *dawarān*.

8 See Walter E. Young (2019), "Concomitance to Causation", esp. 268 ff.

9 This function *ʿilla*(*x*): H(*x*) (*x*: P) may be read as follows: "Given the property or properties P, there is a procedure *ʿilla*(*x*), that relates the presences x of the property or properties P with the presences x of the ruling H." Note this has almost the same reading as an implication or universal, but is not one. That is, in a coarse reading of this function one could say: "For all *x*, If P then H." However, this converts a judgment into a proposition, which is wrong for at least two reasons: first, in the efficient procedure the agent is not visible; second, and more significantly, this reading is no longer purely hypothetical, when the very sense of a prescription is that it should be purely hypothetical. That is, the judgment which forbids one, for example, to pass through a red traffic light, does not assume that someone either did or did not pass through a red traffic light; whereas propositions are assumed to be either true or false. Put differently, a hypothetical judgment is not in principle an actualized universal.

10 In fact, in an Aristotelian framework we might identify a case's property (or properties) as the material cause, the function as the efficient cause, the ruling as the formal cause, and whatever category of "objectives of God's Law" (*maqāṣid al-sharīʿa*) is relevant to the case as the final cause.

11 This objective was motivated by an email inquiry from Prashant Keshavmurthy (McGill University, Institute of Islamic Studies) with regard to the presence / absence of formally articulated abductive reasoning in Islamicate logical or dialectical traditions. The subsequent exchange was further enriched by the stimulating input of Asad Q. Ahmed (University of California, Berkeley, Dept. of Middle Eastern Languages and Cultures).

12 In fact, it is the distinction between the property and the efficient process of relating presences of the property with presences of the effect which makes it possible to assimilate natural and legal causation within the same epistemological framework of causality wherein neither essential nor accidental active and passive powers play an explanatory role.

13 Based on Frank Griffel's masterful study of relevant chapters from al-Ghazālī's Incoherence of the Philosophers (Tahāfut al-Falāsifa), Standard of Knowledge (Miʿyār al-ʿIlm), and Touchstone of Reasoning in Logic (Miḥakk al-Naẓar fī l-Manṭiq) [Griffel, Frank (2009), Al-Ghazālī's Philosophical Theology, Oxford: Oxford University Press].

14 Note this reading of al-Ghazālī as the reverse of Aron Zysow's (2013, 220-1) nevertheless accurate description of the age-old legal theorists' controversy as "the assimilation of legal to rational causes." We are simply suggesting that in developing his natural epistemology, something of the reverse was true for al-Ghazālī.

15 See Walter E. Young (2019), "Concomitance to Causation", p. 221-2, p. 224, p. 229-230, p. 242, p. 268-276 and Walter E. Young (2022) in the present issue.

16 See Shahid Rahman and Walter E. Young (Forthcoming), "Outside the Logic of Necessity".

17 Frank Griffel (2009), *Al-Ghazālī's Philosophical Theology*, p. 209-210. Endnotes have been omitted, italics are Griffel's.

18 Notice that induction (*istiqrāʾ*) is distinguished from experimentation (*tajriba*); whereas *istiqrāʾ* produces knowledge and requires the active participation of the intellect, *tajriba* does not produce knowledge. We will return to this issue in the following section.

19 NB: this corresponds to the legal theorists' notion of the *māniʿ*, or impediment, the presence of which—for those who accept the notion—can block a cause from producing its effect, just as an absent condition (*sharṭ*) can. In this case, the *māniʿ* would be that the scammony was consumed

in the wrong clime. See al-Samarqandī on this in Walter E. Young (2019), "Concomitance to Causation,"p. 240.

20 See Frank Griffel (2009), *Al-Ghazālī's Philosophical Theology*, p. 211.

21 See Hallaq, Wael B. (2009), *Sharīʿa. Theory, Practice, Transformations*, Cambridge, Cambridge University Press, p. 107-109.

22 See Walter E. Young (2017), *The Dialectical Forge*, p. 169-173.

23 See Rahman, Shahid & Muhammad Iqbal (2018), "Unfolding Parallel Reasoning in Abū Isḥāq al-Shīrāzī's System of Co-Relational Inferences of the Occasioning Factor", *Arabic Sciences and Philosophy* 28, p. 80-84; further developed in Shahid Rahman, Muhammad Iqbal, & Youcef Soufi (2019), *Inferences by Parallel Reasoning in Islamic Jurisprudence*, p. 31-40 and Mohammad Iqbal (2021), *Arsyad al-Banjari's Approaches to Rationality*.

24 In the following sections we will occasionally indulge in an anachronistic use of formal devices. However, our intentions are to employ them only as a means to express—as accurately and as close to the analysed texts as possible—the insights of Muslim thinkers on the issues discussed, while doing our level best not to back-project modern logical conceptions. Furthermore, we ardently hope that the use of such devices will motivate the exploration of new and fruitful perspectives in contemporary epistemology and philosophy of logic.

25 The qualification "hypothetical" indicates that *dawarān* does not require a concomitance to be actualized. In Shahid Rahman, Johan-Georg Granström & Ali Farjami (2019), "Legal Reasoning and Some Logic After All. The Lessons of the Elders", Rahman, Shahid, Farid Zidani & Walter E. Young (2022), "Ibn Ḥazm on Heteronomous Imperatives. A Landmark in the History of the Logical Analysis of Legal Norms", in Paul McNamara, Andrew J. I. Jones, Mark Brown (eds.), *Agency, Normative Systems, Artifacts, and Beliefs: Essays in Honour of Risto Hilpinen*, Dordrecht, Synthese Library, Springer, and Shahid Rahman & Walter E. Young (Forthcoming), "*Outside the Logic of Necessity*", it is argued that the hypothetical feature expresses the prescriptive dimension of norms. Indeed, norms presuppose freedom of choice or moral and legal liability. Liability presupposes a system of hypothetical judgements comprising the possibility of choosing whether to carry out or not carry out the action prescribed by the norm. In other words, each type of prescription (obligatory, permissible, and so on) assumes as hypothesis that the corresponding types of action can be—rather than are—carried out, or can be (deliberately) neglected. Contexts wherein the hypothesis does not apply constitute non-actualized prescriptions (e.g., a context wherein there is no intoxicating drink at all—independently of the will of the agent—does not count as a deliberate choice not to consume an intoxicating drink).

26 Cf. Shahid Rahman, Mohammad Iqbal & Youcef Soufi (2019), *Inferences by Parallel Reasoning in Islamic Jurisprudence*, p. 37-41, where the analysis and terminology is slightly different (since it is mainly restricted to the views of al-Shīrāzī), though it makes the same important point; namely, *dawarān* is primarily a procedure rather than the mere verified conjunction of (quantified or conditional) propositions.

27 We can provide yet a deeper analysis. If, instead of assuming that every x enjoys or does not enjoy the property A, we can explicitly express that every pressed juice x either enjoys or does not enjoy the property A, then the domain of quantification would have the following structure: $(\forall x: \{w: \textit{Pressed Juice} \mid A(w) \vee {\sim}A(w)\}$.

This requires that the consequent be adapted in such a way that $\text{left}^{\vee}(y)$ is identical to those pressed juices that enjoy A—that is, identical to left of the second element of x (with x being constituted by two elements, "being a pressed juice" w and "being a pressed juice that either enjoys or does not enjoy A"). Something similar holds for $\text{right}^{\vee}(z)$.

28 That is, Q's dialectical objection that R's claimed *ʿilla* is found without its *ḥukm* in another case accepted by R.

29 Cf. Ibn al-Ḥājib (who draws on al-Ghazālī) and commentators al-Ījī and al-Taftāzānī (Walter E. Young, (Forthcoming B), "On the Insufficiency of Concomitance Alone").

30 For overviews of the *masālik al-ʿilla / masālik al-taʿlīl*, see Ahmad Hasan (1986), *Analogical Reasoning in Islamic Jurisprudence*, Chap. 13 "The Methods of Determining the Legal Cause"; Bernard Weiss (2010), *The Search for God's Law*, Chap. 13 "Analogy: Ascertaining the Occasioning Factor"; Wael B. Hallaq (1997), *A History of Islamic Legal Theories*, p. 86-92.

31 See Walter E. Young (Forthcoming A), "Islamic Legal Theoretical and Dialectical Approaches to Fallacies of Correlation and Causation (7th-8th/13th-14th centuries)" and Walter E. Young (Forthcoming B), "On the Insufficiency of Concomitance Alone".

32 On these and other relevant objections, see Miller, Larry B. (2020), *Islamic Disputation Theory. The Uses & Rules of Argument in Medieval Islam*, Cham, Springer, p. 57-73 and Walter E. Young (2017), *The Dialectical Forge*, p. 137-182, drawing upon, among others, al-Shīrāzī (1987), *Al-Maʿūna fī l-Jadal* and al-Bājī (1978), *Kitāb al-Minhāj fī Tartīb al-Ḥijāj*.

33 On *tarjīḥāt* see Bernard Weiss (2010), *The Search for God's Law*, Part IV. "The Weighing of Conflicting Indicators"); and Walter E. Young (2017), *The Dialectical Forge*, p. 146, p. 250, p. 570-1, p. 585-8, p. 604-7.

34 On the roles of condition (*sharṭ*) and impediment (*māniʿ*) in *qiyās*, see Ahmad Hasan (1986), *Analogical Reasoning in Islamic Jurisprudence*, Chaps. 16 "The Condition and its Kinds" and 18 "The Impediments to the Rule of Law".

35 On the contended method of *istiḥsān*, see Wael B. Hallaq (1997), *A History of Islamic Legal Theories*, p. 107-111; Bernard Weiss (2010), *The Search for God's Law*, p. 663-7; Nyazee, Imran Ahsan Khan (2016), *Outlines of Islamic Jurisprudence*, 6th Edition, Islamabad, Center for Excellence in Research, p. 178-80; Kamali, Mohammad Hashim (2003), *Principles of Islamic Jurisprudence*, 3rd Edition, Cambridge, The Islamic Texts Society, Chap. 12 "*Istiḥsān* (Equity in Islamic Law)"; Zysow, Aron (2013), *The Economy of Certainty: An Introduction to the Typology of Islamic Legal Theory*, Atlanta, Lockwood Press, p. 240-43.

36 On these *qiyās*-relevant modes of *istidlāl*, see Walter E. Young (2017), *The Dialectical Forge*, p. 105-6, p. 119-128, p. 601-3.

37 On *taḥqīq al-manāṭ*, *tanqīh al-manāṭ*, and *takhrīj al-manāṭ*, see al-Ghazālī, *Mustaṣfā* (Ḥāfiẓ ed., 3.485-92); Ahmed Hasan (1986), *Analogical Reasoning in Islamic Jurisprudenc*, Chap. 14 "The Modes of Reasoning in Legal Cause"; Wael B. Hallaq (1997), *A History of Islamic Legal Theories,* p. 200-2; Aron Zysow (2013), *The Economy of Certainty*, p. 161-3.

38 See, e.g., Badawī's edition (*Manṭiq Arisṭū*) of early Arabic translations of Aristotle (1948, 1.306-8 [= *An. Pr.* II.23], 2.329-30 [= *An. Po.* I.1], 2.385- [= *An. Po.* I.18], 2.507 [= *Top.* I.12], 3.726-39 [= *Top.* VIII.1-2], *passim*).

39 Here we have adapted an example from Douven, Igor (2021), "Abduction", *Stanford Encyclopedia of Philosophy*, https://plato.stanford.edu/entries/abduction/

40 The point is that one first needs to conjecture the cause, and then the subsequent examination will either corroborate that conjecture or not. In contemporary theory this is called the hypothetical nomological approach to explanation, which we owe to Carl Hempel. It is the answer to the question: Why did you choose to observe this regularity, rather than another? See Hempel, Carl G. (1962), "Deductive-Nomological vs. Statistical Explanation", in Herbert Feigl and Grover Maxwell (eds.), *Scientific Explanation, Space & Time*, Minneapolis, University of Minnesota Press, p. 98-169; Hempel, Carl G. & Paul Oppenheim (1945), *Philosophy of Science* 12(2), p. 98-115 and Hempel, Carl G. & Paul Oppenheim (1948), *Philosophy of Science* 15(2), p. 135-175; the most thorough discussion is in Hempel, Carl G. (1966), *Philosophy of Natural Science*, Englewood Cliffs, Prentice-Hall, Chap. 2.

41 al-Ghazālī, *al-Mustaṣfā*, Ḥāfiẓ ed., 1.161-3; Būlāq ed., 1.51-2.

42 Based on Kuipers, Theo (1984*), Philosophia Naturalis* 21, p. 244-253; Kuipers, Theo (1992), *Synthese* 93, p. 299-341; Kuipers, Theo (2000), *From Instrumentalism to Constructive Realism*, Dordrecht, Kluwer.

43 See, e.g., the *tarjīḥāt*, the method of *istiḥsān*, and other modes mentioned above in the introduction to section III.

44 See, e.g., the *qiyās*-relevant mode of *istidlāl bi-l-taqsīm*, and the dialectical objection of *muʿāraḍa*, mentioned above.

45 See Rahman, Shahid, Zoe McConaughey, Ansten Klev & Nicolas Clerbout (2018), *Immanent Reasoning. A Plaidoyer for the Play-Level*, Dordrecht, Springer.

46 The tale in question goes back at least to the Babylonian Talmud, and is thereafter found in several variant versions, including one in the *Hasht Bihisht* of Amir Khosrow. It involves a group of princes who, as Prof. Keshavmurthy put it: "are able to reconstruct from slight empirical clues that a particular missing camel was blind in one eye and carrying a pregnant woman."

47 Whereas "*snd*(*x*)" would stand for *smell specific to the intoxicating drink fst*(*x*). One can also distinguish between the function that selects the first component of x without providing information about the second component—in our example, a function that extracts an instance of intoxicating drink without informing us about its concomitant smell. See Shahid Rahman & Mohammad Saleh Zarepour (2021), "On Descriptional Propositions in Ibn Sīnā", p. 418-420. However, in the context of identifying an occasioning factor with a concomitant but not efficient property, perhaps it is more accurate to retain the more informative version of the projection functions.

48 See Shahid Rahman & Walter E. Young (Forthcoming), "Outside the Logic of Necessity."

49 See Shahid Rahman & Mohammad Saleh Zarepour (2021), "On Descriptional Propositions in Ibn Sīnā", p. 411-432.

50 See al-Ghazālī in the appendix below, and Walter E. Young (Forthcoming A), "Islamic Legal Theoretical and Dialectical Approaches to Fallacies of Correlation and Causation (7th-8th/13th-14th centuries)" and Walter E. Young (Forthcoming B), "On the Insufficiency of Concomitance Alone".

51 See Walter E. Young (2019), "Concomitance to Causation", p. 221-2, p. 224, p. 229-230, p. 242, and al-Samarqandī's "causal entailment principle" (§48 of the *ʿAyn al-Naẓar*) in Shams al-Dīn Muḥammad al-Samarqandī (2019), *Kitāb ʿAyn al-Naẓar fī ʿIlm al-Jadal*, Digital critical edition, ed. and trans. Walter Edward Young, TEI Infrastructure by Frederik Elwert. Digital

Humanities at the Center for Religious Studies (DH@CERES), Ruhr-Universität Bochum. https://pages.ceres.rub.de/ayn-al-nazar/, described in Walter E. Young (2022, in the present issue).

52 See Rahman, Shahid, Farid Zidani & Walter E. Young (2022), "Ibn Ḥazm on Heteronomous Imperatives".

53 See, e.g., al-Samarqandī in Walter E. Young (2019), "Concomitance to Causation", p. 229-230.

54 Note that Griffel points out that this is something in common with Ibn Sīnā's account of causation claims.

55 In the technical literature, the dialectical objection of *naqḍ* is defined as the presence of the *ʿilla* (in another case) despite the absence of its supposed *ḥukm*—the very opposite of co-presence (*ṭard*), as al-Ghazālī has pointed out. Having equated *ṭard* with merely being free of *naqḍ*, however, he presents this as a fallacy of *argumentum ad ignorantiam*, alongside its (efficiently blocking, but equally invalid) response. This latter constitutes what is called, in dialectical theory, a counter-indication by like (*muʿāraḍa bi-l-mithl*). *Ṭard*, being nothing more than the absence of *naqḍ*, is thus no true indicant; something more is needed.

56 The fallacy is thus one of circularity.

57 [إليها] is in [ح] but not in [ب].

58 Thus in [ح], but in [ب]: [بل بحال غلبة الظن عليه كان حكم علته].

59 As we have seen, al-Ghazālī presented his arguments against the utility of co-presence alone in the previous section.

60 As opposed to "intellective causes" (*ʿilal ʿaqliyya*). See Walter E. Young (2019), "Concomitance to Causation", p. 268-71.

61 [أو شرطاً] in [ب].

62 Note this problematically insufficient *dalīl*, presented as a hypothetical conditional syllogism in the modus ponens, expresses the fallacy of mistaking correlation as cause.

63 [فيه تحكم] in [ب].

64 This being the bottom rank of *munāsaba*. See Bin Sattam, Abdul Aziz (2015), *Sharīʿa and the Concept of Benefit: The Use and Function of Maṣlaḥa in Islamic Jurisprudence*, London Islamic Studies, London, I.B., Tauris in association with the Centre of Islamic Studies, SOAS, The University of London: "*Al-munāsib al-gharīb* (the strange suitable) is the name give by scholars to the lowest level of suitability that occurs when the general type of description matches the general type of ruling."

65 Meaning *al-maṣlaḥa al-mursala*, or "textually unregulated benefit." See Wael B. Hallaq (1997), *A History of Islamic Legal Theories*, p. 112-13.

66 [امحق] in [ب].

Table des illustrations

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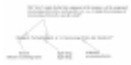

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