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Time as an argument in Roman water law

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Abstract
This article analyses the function of time in legal regulations of water use. It is discussed how time units are employed to specify the use of water through servitudes, enabling the involved parties an efficient distribution. In this context, it is examined how the jurists take different approaches when it comes to defining the terms of use and maintenance for a servitude and how the diverging conceptions are influenced by philosophical ideas. Moreover, the legal regulation for usage of multiple parties in irrigation communities is explored. Further, the article deals with the role of time for the formation and nullification of servitudes. The jurists apply different conceptions in deciding whether a servitude can be lost through non-use or created through acquisitive prescription and other means, which take the factor time into account. It becomes evident that the opinions of the jurists derive from philosophically influenced schools of legal thinking. Finally, the time intervals of possession are analysed, which are necessary for allowing judicial protection of water use through the praetor. In order to enforce an *interdictum*, solely a one-day use of the possessor is required. The conclusion highlights the connection between legal rules and archaeological evidence.

Keywords Water rights · Water usage · Time units · *Servitutes* · *Interdicta* · Roman law

I. Introduction

In the field of water law, time is a significant category. Time units function to specify the conditions of water use. Moreover, fixing special time units is one way of increasing efficiency, by facilitating the participation of multiple users. Time units, for example, were instrumental in both the legal regulation of the use of public aqueducts and as a means of regulation by the owners of private land, when establishing the praedial right of an aquae-

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duct. This kind of regulation and other possible criteria for distribution will be presented first. (II.)

The private rights of use, the so-called *servitutes* or *iura praediorum*, were established by neighbouring landowners to exist between the respective owners of the property, the property of the entitled owner called dominant property, and the property, that is burdened by the right, so that the owner has to tolerate the using of his neighbour or to refrain from a specific use, called the serving property. In terms of their formation and nullification, 'time' plays a crucial role. These issues will be the subject of the second and third part of the essay. (III., IV.)

Fourth, I will address the judicial protection of water use, especially in the form of *interdicta*, and present the conditions set for it, with a particular focus on the element of time. (V.)

Last, I will offer some reflections upon what kind of information can be found in the legal texts, what can be learned from the dogmatic perspective of a legal historian or from a historical point of view with a special interest in the economic background and how the legal information can be combined with archaeological evidence.

II. Time units for water use — *modus servitutis*, legal regulation and judicial engineering

The first aspect I will examine deals with the desire to specify the right to use water from the ground of a neighbour. The owner of the servient property has a vital interest in specifying and thus limiting the use of water by fixing a *modus servitutis*, a way of allowed using. It may be that he wants to use most of the water for his own purposes or that he also wants to offer another neighbour a right of use. In the context of the legal sources, many questions arise in these situations. For the historical background, it should be noticed that the right to use water was known since the XII tables as *aquaeductus* and at least since the 2nd century B.C. as *aquaehaustus* – the right to draw water from a place where it is found – or as *servitus pecoris ad aquam adpellendi* – a right to drive cattle to water.[1] These are lawful rights established by the owner of a dominant estate and the owner of a servient estate, and they last as long unless another arrangement is agreed between the actual owners. One can argue that these regulations constitute a kind of neighbour law. In the case of draining off water, the installation of a channel is necessary to realize the right. The creation of these channels can be detected today through traces in the landscape,[2] which are an important archaeological piece of evidence.

Floriana Cursi has shown that the setting of time conditions for the water servitude through time units, such as hours, days or even seasons – for the summertime the so-called

[1] For the development of private rights to use water see Möller (2010), 78 ff., 91 ff. with references to further literature. The development of rights to use water from the neighbour's estate can be understood in an economic context. Large quantities of water were needed to match the growing demand of a fast growing market. At the same time, water rights become greater in number and more refined, perhaps by reason of the requirements of different forms of farming. See Ronin (2018). Cf. for the building of public aqueducts Möller (2018), 24.

[2] These traces probably differ from the remains of ancient property boundaries and sometimes nearby constructed channels for drainage. Möller (2018d), 30 f.; Willi (2014), 141, 148, 152 f.

aqua aestiva –, was relevant in the field of the *usus servitutis*.[3] One can prove her assertion by looking at the special judicial remedies, e.g. the *interdicta*, the protection of *usus* or *possessio*. They take various time units into account as a daily use, a daily alternately use or a use only in the summertime.[4] However, one can learn from the eloquent silence of the legal tradition that the setting of time units has not led to the creation of new kinds of servitudes.[5] Moreover, it is significant, and Floriana Cursi has also dealt with this subject in her study, that a distinction, based on time intervals, is not discussed before the 1st century B.C. Servius Sulpicius, friend of Cicero and leading jurist of the time, was the first to draw legal consequences from such specifications.[6] The dogmatic requirements for the distinction he made can be found in the concept of a servitude as a right of use, which is not physical and can therefore be established for several persons. The conditions of use should be defined by the parties, who have established the servitude by *mancipatio* or *in iure cessio*.[7] If they fail to do so, the jurists established reference points for support in the case of conflict. Once a precise area (locus) within the servient land was used for the way or for the channel, this specific layout cannot be changed. When choosing, the interests of the owner of the servient estate must be respected.[8]

An earlier distinction is mentioned in the context of *D*. 8.3.15, where Pomponius, a jurist of the 2nd century A.D., quoted Quintus Mucius. Although Mucius referred to different types of time intervals for water use, the teacher of Cicero and the dominant jurist of the generation before Servius dealt with another problem. In his opinion, the limitation of use is not regulated through time units but through a principle demanding a careful consideration of the neighbour's interest, which prohibits damaging the owner's land.[9] This principle must be respected when an additional installation for drawing off the water on a larger scale is used.

> ***D*.8.3.15 Pomp. 31 *ad Quintum Mucium***
> Quintus Mucius scribit, cum iter aquae vel cottidianae vel aestivae vel quae intervalla longiora habeat per alienum fundum erit, licere fistulam suam vel fictilem vel cuiuslibet generis in rivo ponere, quae aquam latius exprimeret, et quod vellet in rivo facere, licere, dum ne domino praedii aquagium deterius faceret.
> Quintus Mucius tells us that when a man has a watercourse across another man's estate the supply of water being used daily or in the summer or over longer intervals, he is permitted to lay in the channel a conduit of his own, be it of earthenware or any other kind of material, to obtain a wider diffusion of the water. He is also permitted to construct whatever he wishes in the channel, providing that he does not make the

[3] See for a first impression the conclusion in Cursi (1999), 366.

[4] *D*. 43.20 *de aqua cottidiana et aestiva* and this article V.

[5] Cursi (1999), 157 ff.

[6] These specifications were articulated in the context of *non usus* in *D*. 8.6.7 Paul.13 *ad Plaut*. See in detail Behrends (2000), 25 ff.; Möller (2010), 32 f.; balancing different interpretations Cursi (1999), 195 and below under III.

[7] *D*. 8.1.5.1 Gaius 7 *ad ed. prov*. See for the distinction of *usus* and *ius*, *D*. 43.20.1.3 Ulp. 70 *ad ed*.: *Duo autem genera sunt aquarum: est cottidiana, est et aestiva. cottidiana ab aestiva usu differt, non iure*.

[8] See *D*. 8.1.9 Cels. 5 *dig*., and for a first discussion Möller (2010), 265 f.

[9] Möller (2010), 82 ff.; Cursi (1999), 196–198.

watercourse less advantageous to the servient owner. (This and all other translations were taken from the one edited by Alan Watson)

It becomes evident not only that time units guarantee the use of a reasonable amount of water, but also the material which is used for channelling and the way it is applied.

The legal consequences of the time units become apparent when looking at the praetor's protection. He offers specific interdicts in order to secure water rights. I will return to this aspect in the fifth section of this paper. It should be noticed here that the amount of water that the owner of the dominant estate is allowed to use, is established by the servitude. Another possible and customary criterion, the size of the benefiting estate, does not play a part in the context of a servitude.[10] The parties make an agreement in which they determine the amount of water to be used. Roman jurists interpreted such commitments in different ways. This can be learned from Proculus, a jurist of the 1st century A.D., who held that a servitude, which was established for one part of the dominant estate, cannot be used for another part.[11] This does not correspond with the view of the Augustan jurist Labeo, but was accepted by Pomponius, the author of the text in the *Digest* and a jurist in the 2nd century A.D.[12] The differing opinions result from two fundamentally different conceptions. Labeo's wider interpretation derives from a conception concerned by the usage of common goods. Proculus and Pomponius, however, follow a conception of a strictly limited right, which is imposed on the owner of the servient estate. The varying conceptions are also relevant in the context of maintenance or repair of aqueducts and water pipes. It can be argued that the jurists of the Sabinian school tended to hold the view that maintenance and repair requirements also belong to the quasi-natural content of a servitude, whereas the jurists of the Proculian school were inclined to hold the opposite view.[13] Nevertheless, if the parties did not want to take any risks, they ought to fix the criterion for usage and the conditions for maintenance. This might be done in the context of creation, but could also happen by using the right and specifying it, so that the kind of usage could not be lawfully changed.

Another point shall be mentioned here, regarding judicial protection when several people use the same *aquaeductus*. Lauretta Maganzani published an extensive essay in 2017, in which she investigated how such a specification could be reconsidered in the event of litigation between the common users of the water source, the *rivales*.[14] She dealt with organized water use through irrigation systems in villages and, in particular, with the arbitration of conflicts within the community of the users. The epigraphical evidence for such irrigation communities is impressive. The latest discovery in this respect are pieces of a bronze tablet, on which the *lex rivi Hiberiensis* is inscribed.[15] In her investigation, Maganzani has convincingly included several texts from the *Digest*, which originate from different jurists and times. They all take for granted that irrigation communities also existed on the basis of pri-

[10] For an imperial constitution that clarifies the legal situation in late antiquity, see C. 3.34.12 Impp. Diocletianus et Maximianus Valeriae (a. 294): *Non modus praediorum, sed servitus aquae ducendae terminum facit*. This text is discussed in Möller (2016), 13 nt. 17.

[11] *D.* 8.3.24 Pomp. 33 *ad Sab*.

[12] On the different traditions that developed from the late republic, see Möller (2010), 267 ff.

[13] For a typical combination of the different positions see *D.* 8.4.11 pr.-§ 1 Pomp. 33 *ad Sabinum* and for a discussion of various other interpretations Möller (2016), 12–16 and Möller (2010), 262 ff.

[14] Maganzani (2017), 179–208.

[15] For irrigation systems, see Einheuser (2017), 26 ff.

vate regulation as could have been the case with servitudes for the benefit of each individual user himself or a group of users.[16] There were various judicial remedies in case of conflict, including the *actio confessoria* against the owner of the land with the water confirming the servitude, the *interdicta*, which offer protection for possession and so were useful against anyone disturbing the usage of a *rivalis* including the other *rivales*[17], and an *iudicium communi dividundo utile* as testified by Julian in *D.* 43.20.4. This remedy can only be used in an adapted way, regarding the similarity of the aim, because there is no co-*dominium* of the *rivales*, but also a need to fix a rule for using the resource together.

> ***D.* 43.20.4 Iul. 41 *dig*.**
> … respondit: sicut iter actus via pluribus cedi vel simul vel separatim potest, ita aquae ducendae ius recte cedetur. sed si inter eos, quibus aqua cessa est, non convenit, quemadmodum utantur, non erit iniquum utile iudicium reddi, sicut inter eos, ad quos usus fructus pertinet, utile communi dividundo iudicium reddi plerisque placuit.
> …He replied: Just as a right of way on foot or with cattle, or of a road, can be ceded to several people either together or separately, so the right of drawing off water can rightly be ceded. But if those to whom the water is ceded cannot agree how to use it, it will be only fair that an *utile judicium* should be delivered, as it has been held should be done for dividing a common usufruct among the several people to whom it belongs.

It is by judicial engineering that a rule is created for the division of the water. It can be argued that the *actio communi dividundo utile* resulted in the setting of time units. Further, the size of the estate, which is to be irrigated, is another point of reference. This is attested to by various texts. It is mentioned in the *Digest* 8.3.17 by Papirius Iustus in his collection of constitutions. The emperors of the middle of the second century A.D., Antoninus Pius and Lucius Verus, decided in a *rescriptum* that the water from a public river should be used "*pro modo possessionum*" (proportionately to the possession), if no special right exists for someone.[18] The scale of an estate is also taken as an option for the sharing conditions in the context of private use, when the portion of water use must be defined after selling a part of an estate. Pomponius names *pro modo agri* (proportionately to the size of the part of the estate) as guiding principle.[19] This aspect is also documented by epigraphical evidence from the irrigation community of Lamasba in northern Africa, dating from the time of emperor Elagabal (218–222 AD).[20] The size of the irrigated estate also determines the respective

[16] *D.* 8.3.2.1-2 Nerva 4 *reg.*: "it is possible to establish several rights of water use (aquaeductus or aquaehaustus), may it be for different timeslots – *diversis diebus vel horis* – may it be without such a timetable in case of sufficient water"; *D.* 43.20.4 Iul. 41 *dig.* confirms this possibility; *D.* 8.6.16 Proc.1 *epist*. The tradition of Proculus and his position was observed by Elvers (1856), 410, with the important note that the loss of one servitude leads to a more favourable situation for the owner, not to an increasing water usage for the other users. This is the case when several independent servitudes exist. This is also pointed out by Ronin (2012), 227; Maganzani (2017), 190 f. Compare with constituted communities for pastureland Möller (2018b), 96–98; Griese (2019), 343 ff.

[17] *D.* 43.20.1.26 Ulp.70 *ad ed.*; Maganzani (2017), 187, 191 f.

[18] Einheuser (2017), 30.

[19] *D.* 8.3.25 Pomp. 34 *ad Sab.*

[20] *CIL* VIII 18,587=4440 and some useful remarks by Einheuser (2017), 24 with further references.

maintenance duties of irrigators in the *lex rivi Hiberiensis*, dating from the time of emperor Hadrian.[21]

Another way of measuring is taking into account the volume of water.[22] In order to do so, one has to specify the diameter of the pipe. We know from Frontinus' *De aquae ductu* that the use of public aqueducts for special private reasons is regulated in a similar fashion.[23]

Especially interesting in the context chosen in this essay is the documentation of Lamasba because, there, one can find a combination of time units and the scale of the irrigated land.[24]

It is apparent that irrigation was not only organized by public institutions – as one can easily tell when looking at the aqueducts –, but also by private persons. Time units were a way to regulate the use of water as illustrated by epigraphic evidence and texts from the Digest. An increasing demand for water and water shortages can be seen as the underlying economic reason. Especially when faced with poor climatic conditions in semi-arid areas as in some parts of the Iberian Peninsula or northern Africa, it was an efficient solution adopted by the Romans to consider time as a pivotal factor for regulation. Time management proved to be essential when solving distribution problems.[25]

III. Use it or lose it – a time unit for necessary use

There is a well analysed legal rule that takes time into consideration when deciding whether a right of water use continues to exist or not. Cynthia Bannon formulated quite aptly how the Roman jurists decided – based on that rule – when the beneficiary of a servitude did not use it: use it or lose it.[26] The servitude was lost after two years of non-use. We do not know, when this rule was changed, but according to the Theodosian Code the time for losing is fixed at 30, in some situations at 40 years. Justinian altered the space of time in a constitution 531 and fixed it on ten or twenty years.[27] The classical two-year condition is established by Servius Sulpicius and adapted in the case where the *usus* is permitted not continuously, but every second year or month. Servius supported a doubling of the time, resulting in four years. The determination of certain days or of certain hours to exercise a right to draw water, however, does not change the time range after which one could lose a servitude, because the servitude was regarded as a consistent one (*una servitus*), because of its daily or quasi-daily use.[28] The *usus servitutis* is classified as the real aspect of the right, which is necessary for

[21] See the edition of Einheuser (2017), going back to Beltrán Lloris (2006), 153–157, § 2b, p. 13, commented p. 32.

[22] For the different and sometimes combined options see Ronin (2012), 219–239; Einheuser (2017), 28 ff. For an instructive discussion with reference to the legal sources and to Frontinus' *De aquae ductu*, see Elvers (1856), 411, who supposed that the detailed system of regulating the use of public water also applied to private water pipes.

[23] Frontinus, *De aquae ductu*, c. 23–64, c. 112, c. 113. The public water supply is not only important for irrigation and personal needs, but also for public health, public and private luxury and, ultimately, for social cohesion. See, for the praise of *abundantia aquae*, Plinius, *Nat. hist.* XXXVI,123 and for the context Möller (2018a), 23 f.

[24] Einheuser (2017), 29 f.

[25] Ronin (2012), 221–222.

[26] Bannon (2009), 18 ff., nt. 55 ff.

[27] C. 7,33,12,4 Iustinianus a. 531. See Kaser (1975), 301.

[28] Tuccillo (2009), 140–145; Cursi (1999), 186–190.

its existence.[29] The main text, that was intensively discussed, comes from the late classical jurist Paulus, who quotes Servius by name.

D*. 8.6.7 Paul. 13 *ad Plautium

Si sic constituta sit aqua, ut vel aestate ducatur tantum vel uno mense, quaeritur quemadmodum non utendo amittatur, quia non est continuum tempus, quo cum uti [non] potest, non sit usus. itaque et si alternis annis vel mensibus quis aquam habeat, duplicato constituto tempore amittitur. idem et de itinere custoditur. si vero alternis diebus aut die [toto]<tantum>aut tantum nocte, statuto legibus tempore amittitur, quia una servitus est: nam et si alternis horis vel una hora cottidie servitutem habeat, Servius scribit perdere eum non utendo servitutem<biennio>, quia id quod habet cottidianum sit.

Suppose a right to channel water is created on the terms that it may only be exercised during the summer or in one particular month. How can the right be lost by non-use, since one cannot point to an unbroken period of time when the beneficiary could have used it, but did not? Accordingly, if a man has a right to take water during alternate years or alternate months, the right is lost by the lapse of twice the prescribed period. The same rule applies in the case of a right of way. However, if the right may be exercised on alternate days or only during the day or only at night, it will be lost by the lapse of the period established by law, because, in this case, the exercise of the servitude is considered continuous; as Servius tells us, if a man has a servitude which he may exercise every other hour or for one hour during the day, he will lose the servitude by not using it, because he has a right which can be exercised every day.

Non-use within a certain time leads to the loss of the servitude. This is a dogmatic consequence of the new concept of servitudes as incorporeal rights (*res incorporales*).[30] It is a substitute for the dogmatic concept of servitudes as rights with a corporeal existence in the sense of effectiveness, which is based on the understanding of the stoic philosophers.[31] The result of the new concept is the loss of the servitude merely by *non usus*. The decisive idea is that a right, which burdens the property of a neighbour, must be used in order to exist in reality, here understood as the corporeal world in the sense of tangibility. Furthermore, the *usus* demonstrates the usefulness of the servitude's existence.[32] First of all, the argumentation is dogmatic, but also economically persuasive. However, the economic logic depends on the point of view. It is an advantage for the liberty of the estate burdened with a servitude, when the existence of the burden is connected with its necessary use. The loss in case of *non usus* takes place automatically.

In this respect, it is a change of perspective in contrast to the so far dominant view of Quintus Mucius. There, the idea of an effective arrangement of land use influenced the conception of servitudes. In consequence, a positive act of *usucapio* is necessary to gain the freedom of the burdened estate, *usucapio libertatis*. Therefore, it is easier to conserve the

[29] Möller (2010), 252 ff.; Möller (2018c), 315; Behrends (2000), 24 ff.

[30] Möller (2010), 221 ff.

[31] For the confrontation and comparison of these two fundamentally different conceptions, see Möller (2010), 185 ff.

[32] For the specified loss of an aqueduct with use in the night (*aqua nocturna*) and another one with use by day (*aqua diurna*) see *D*. 39.3.17 pr. Paul. 15 *ad Plautium*. Tuccillo (2009), 147 f.; Cursi (1999), 190 f.

right of use. The owner of the burdened estate, however, has to show by an act of *usucapio* that he will no longer accept the servitude, for example by using the former area of a way or of a water-pipe as a grain-field.[33] On the contrary, it is possible to obtain such a right not only by the legal forms of acquisition, but also by the acceptance of *usus servitutis* without doing anything wrong over a period of two years.[34] Observing this connection between acquiring and losing servitudes leads us to the next section.

IV. Usucapio servitutis and its later substitutes

The concept of *usucapio servitutis* is known for the pre-classical period by a statute called *lex Scribonia*, dating from 50 BC.[35] It prohibits the mechanism of *usucapio servitutis*. It is quite clear that such a statute would not have made any sense, if *usucapio* of servitudes had not been accepted by anyone. The acquisition of a servitude through *usucapio* required that a person acted as if a servitude existed in a non-violent and non-clandestine manner, for example by using the water of the neighbour or walking over the neighbour's estate. The aspect of use was therefore of vital importance. It is accepted as a form of possession by the pre-classical jurists. Further, the expiration of a certain time period, two years, was necessary. Evidently, the *usucapio* was disadvantageous in terms of liberty. However, it proved to be beneficial in terms of efficient use.[36] This position is again based on ideas of stoic philosophy.[37] In this philosophically influenced concept, the faultless use of a person is understood as a way to realize the potential of nature framed by a peaceful living together and using natural resources in harmony. That person's action is appraised positively because they exercise the natural usefulness of the land. This interpretation is based on the *ius gentium*. The term designates a *ius* that applies to all human beings. The range of the *ius gentium*, however, is restricted by other rules of particular states, the special *ius civile*. But a transition from *ius gentium* to *ius civile* is also possible in the case of *usus*, if the *usus* is a possible content of a servitude. The transition happened in the case of *usucapio servitutis* through the time period of *usus* and caused the position as legally guaranteed.[38]

By contrast, such a transition from usage to servitude was not accepted by Servius Sulpicius and his school. Moreover, mere usage without a constituted right bears no juridical significance and cannot be the basis of a right.[39] Legal protection is granted only by special remedies, which the praetor has proclaimed in his edict. By this new conception, the right of use could not be possessed, because possession needs a corporeal object. In consequence, the possibility of acquiring a right only by *usus* over a time period of two years was no lon-

[33] This assumption is the background for a complete understanding of D. 8,2,7 Pomponius lb. 26 ad Q. Mucium. For a short version, see Möller (2010), 190–192. For the first thorough and detailed interpretation in this sense, Behrends (2000), 1–51, esp. 20 f.

[34] For the aspect of liberty in this context, see Möller (2018c), 314–318.

[35] For a discussion of this *lex*, its dogmatic and political background and the accurate dating, see Möller (2010), 235–251. Cf. for another composition and evaluation of the relevant information, Tuccillo (2009), 39–59 (to understand the *usucapio servitutis*), 59–95 (discussing elements of a dogmatic, economic and political nature to find the probably right date, after Cicero's *Topica* in 44 BC).

[36] Möller (2018c), 319.

[37] Möller (2010), 222–226.

[38] Möller (2010), 185 ff.

[39] Möller (2010), 229 f. and in conclusion 314 f.

ger recognized. The enactment of the *lex Scribonia* made sure that it was no longer possible to successfully rely on the earlier doctrine.[40]

The picture arising from the *Digest* over the centuries is much more complex. Already in the 2nd century AD, jurists of both law schools, the Sabinians and the Proculians, accepted *usus* as *quasi possessio* (Julian)[41] or as a *possessio iuris* (Celsus)[42]. Even without a confirmed right, Ulpian considered that *usus* over a longer period was sufficient for judicial remedies in favour of the *possessor* or *quasi-possessor* of the usage.[43] These judicial remedies include *interdicta*, aiming to ensure the possibility of undisturbed *usus* in the future, and *actiones*. The reference point is something between the right, the *servitus*, and a mere *usus*, which Ulpian – in the tradition of Celsus – called *quasi possessio*. Combined with a long-time use, a *ius aquae ducendae* emerges. The judicial remedies were given with the argument of *utilitas*, as *interdictum utile* or *actio utilis*.[44] For the comparability with a servitude, it is significant that the user can bring these actions also in conflict with third persons.

***D.* 8.5.10 pr. Ulp. 53 *ad ed*.**
Si quis diuturno usu et longa quasi possessione ius aquae ducendae nactus sit, non est ei necesse docere de iure, quo aqua constituta est, veluti ex legato vel alio modo, sed utilem habet actionem, ut ostendat per annos forte tot usum se non vi non clam non precario possedisse.
1 Agi autem hac actione poterit non tantum cum eo, in cuius agro aqua oritur vel per cuius fundum ducitur, verum etiam cum omnibus agi poterit, quicumque aquam [non]<nos>ducere impediunt, exemplo ceterarum servitutium. Et generaliter quicumque aquam ducere impediat, hac actione cum eo experiri potero.
pr. If a man has obtained a right to channel water by long use and, as it were, by long possession, he is not required to lead evidence to establish the legal title on which his right to the water is founded, for example, to show that it rests on a legacy or on some other grounds. He is entitled to an *actio utilis* to establish that he has had the use of the water, say, for so many years, and that this was not obtained by force, stealth or *precarium*.
1 This action can be brought not only against the man on whose land the source of the water is situated or across whose land it is channelled, but, in fact, against anyone at all who prevents one from channeling the water, as is the case with servitudes in general. In short, by means of this action, I can proceed against anyone who tries to stop me from channelling the water.

In other legal texts already from the 2nd century AD, one can find *vetustas* (antiquity) as a sufficient argument for the existence of a servitude. In the case of Q. Cervidius Scaevola, the teacher of Papinian, it is enough evidence for a *ius aquae ducendi*.[45]

[40] Möller (2010), 235 ff.

[41] Möller (2010), 322–329.

[42] Möller (2010), 336–340.

[43] For the details and differences see Möller (2010), 346–352.

[44] *D.* 39.3.1.23 Ulp. 53 *ad ed*.; *D.* 8.5.10 pr. Ulp. 53 *ad ed*. Möller (2010), 348–351; Maganzani (2017), 192.

[45] Möller (2010), 351; Möller (2016), 20 f.

***D.* 39.3.26 Scaev. 4 *respons*.**
Scaevola respondit solere eos, qui iuri dicundo praesunt, teneri ductus aquae, quibus auctoritatem vetustas daret, tametsi ius non probaretur.
Scaevola replied that those who are responsible for giving judgement normally uphold aqueducts to which antiquity of use gives some authority, even where their legal right to exist is not proved.

Pomponius, a jurist of the middle of the 2nd century, refers to *memoria*, which does not help clarifying the reason for the servitude in the beginning, but can be referred to as a significant element for a servitude established in an approved way.

***D.* 43.20.3.4 Pomponius lb. 34 ad Sabinum**
Ductus aquae, cuius origo memoria excessit, iure constituti loco habetur.
Drawing off of water which goes back beyond anyone's memory is held as if constituted by right.

It is apparent that the results differ slightly. Scaevola uses long-time usage as sufficient proof at court. Pomponius goes even further by attaching an equivalent value to the missing *memoria* of the acquisition of the right in combination with long-term use, with the same legal effect as if the right had been established orderly and therefore expressly.[46]

With regard to the aim of this analysis, it is worth mentioning that over time the long-term use gained relevance and the border between facts and rights was overcome by applying judicial remedies in an analogue way. For a little while, the strict position of Servius and his pupils in combination with the *lex Scribonia* led to a regime that made it necessary to constitute a servitude in a formal way. The parties had to use a *mancipatio*, when creating a rural servitude belonging to *res mancipi* as *iter*, *actus*, *via*, *aquaeductus*, or *in iure cessio* in all the other cases of servitudes in the countryside or in the town (*servitutes urbanorum*), where a servitude was established with involvement of the *praetor*. Moreover, these options were used when selling and transferring an estate or disposing by last will.[47] In all of the aforementioned formal acts, the performance of an explicit legal act by the parties or at least by the owner of the servient estate was required, so they must approve of what they are doing. Nevertheless, there was a strong tendency to legally respect and protect a mere use over a long period. The prerequisites were that possession was not defective (*possessio non vitiosa*), i.e. not violent or exercised secretly or on the basis of *precarium*, and that the owner of the servient estate did not oppose, but tolerate the behaviour of the neighbour – as it is expressed by Ulpian: *traditio et patientia*.[48] For most of the Roman lawyers, time is indeed an argument in water law.[49]

Therefore, the abundance of the archaeological evidence that water was channeled not only by large aqueducts but also in smaller scale between the property of private owners is not a surprise, but a sign of a remarkable variety of juridical accepted structures for fram-

[46] Mannino (1996), 71 f.; Möller (2010), 351 f.; Möller (2016), 20 f.

[47] Kaser / Knütel / Lohsse (2021), 219 f., with remarks concerning the creation of servitudes in the provinces.

[48] *D*. 6.2.11.1 Ulp.16 *ad ed*., *D*. 8.3.1.2 Ulp. 2 *instit*. For a brief discussion see Möller (2010), 353–356.

[49] *Vetustas* is also an argument in the end of the 3rd century, as proven by C. 3,34,7 Impp. Diocletianus et Maximianus AA. Iuliano (a. 286). See other examples concerning public aqueducts in a Database of Roman Water Law, Möller, Schütt, Berking, Resch, Leder, Köhler (2018).

ing a legally recognized usage. The different dogmatic interpretations definitely mattered. Nevertheless, the restrictive concept did not impede the water usage, but served to optimize the transparency of the legal position of the parties. In addition to juridical clarity, the time of usage indicates a benefit and a need of protection.

V. A plaintiff by one-time use

The last section of this analysis on the role of time in Roman water law deals with the protection of water use by the praetor available for everyone, who has used an aqueduct in the last year respecting the conditions of avoiding violence, secrecy or a use on the basis of *precarium*, an informal permission of the owner without an obligation. This way of litigation, called *interdictum*, contains a prohibition of violence (*vis*) against everyone who obstructs the use.[50] This mechanism has been applied to various situations related to water use. The already mentioned *interdictum de aqua cottidiana et aestiva* – II., nt. 4—is chosen as an example. The remarkable text of the praetor's edict quoted in the commentary of Ulpian shows that it is not necessary to prove a right of use for the water of the estate in the neighbourhood. The *possessio non vitiosa* as such is placed under protection.[51]

> ***D.* 43.20.1 pr. Ulp. 70 *ad ed*.**
> Ait praetor: "Uti hoc anno aquam, qua de agitur, non vi non clam non precario ab illo duxisti, quo minus ita ducas, vim fieri veto."
> The praetor says: "Insofar as if you have this year drawn off water in question not by force or stealth or *precarium* from such a one, I forbid force to be used to prevent you from drawing it off in this manner."

The distinction between *aqua aestiva* and *aqua cottidiana* is discussed in the following text.[52] Ulpian points out that the possibility of daily use is sufficient and that it is not required to show an actual daily use. Ulpian's comment on the relationship between conditions for water use and the interdict is of special interest for this analysis. He declares the regulations of time units for the use, a way of shaping the concrete use of the servitude (*modus servitutis*) already discussed in the second section of this article, as irrelevant from the perspective of the edict, since a one-day use in the last year is sufficient for applying the *interdictum*.

> ***D.* 43.20.1.22 Ulp. 70 *ad ed*.**
> … Illud autem nihil interest, utrum quinto die aqua debeatur an alternis diebus an cottidie ei, qui hoc interdicto uti velit: nam cum sufficiat vel uno die hoc anno aquam duxisse, nihil refert, qualem aquae ductum habens duxerit: dum, si quis, cum quinto quoque die uteretur, quasi alternis diebus ducens interdixerit, nihil ei prodesse videtur.
> … Well, it makes no difference whether the person who wishes to avail himself of this interdict has the water due to him on the fifth day or on alternate days or daily. For since it is enough for him to have drawn off water for only one day this year, it is

[50] For information concerning the *interdicta* in general, see Kaser, Hackl (1996), 408 ff.

[51] Möller (2018a), 17.

[52] Cursi (1999), 172 ff.

> irrelevant what kind of right to draw off water he had when he did so, provided that if someone had the use every fifth day and invokes the interdict as if he drew off the water on alternate days, he is held to get no benefit from it.

The subtleties of the *modus servitutis* cannot determine the *interdictum* as a judicial remedy. But they drew a line that cannot be ignored by pleading for the protection of a more frequent use. In this case, the judicial remedy would be denied. However, water use is guaranteed in the same way as the *aquaeductus* was used the year before. This is a clear favour for the use of water, which is protected by the praetor.

In the field of water use, the possibility of judicial protection is linked to the status of the year before and the need to prove an act of use. Little conditions – it is enough to have drawn off water for only one day this year — lead to efficient protection. The time unit chosen is the year before. The reason may be that this is the typical interval of rural use of an estate.

Another aspect of time can be mentioned with regard to the judicial remedy of an *interdictum*. One can argue that one of the main purposes of the *interdictum* is to keep public waterways operating for a long time.[53] In order to realize this task, the Romans embraced the idea to strengthen private initiatives and provide access to the praetor for everyone against activities that altered the conditions of using waterways and aqueducts.[54] Considering the critical aspect of alteration in the sense of changing for the worse, a date must be identified for the comparison before and after. In the legal texts, this point of reference is the use that is made in the last year or in the last summer.[55] Hence, one can detect the encouragement for the use of water here as well, in connection with the maintenance and repair of waterways.[56]

VI. Conclusion

The analysis of time as an argument in Roman water law has brought interesting facts to light.

First, time is a crucial element when it comes to defining a right to use water and to optimize the efficiency of water use. There are numerous reasons why water and an appropriate regulation is needed, e.g. to enable a luxurious lifestyle in the countryside or the city or to ensure the distribution of small amounts of water for purposes of irrigation.

Second, the servitude of *aquaeductus* can be lost if the user does not make use of it for a period of two years. This is a dogmatic condition with convincing economic results. If such a right is not exercised, it can be assumed that there is no need for it. Dogmatically, it should be noted that use is indeed the necessary basis of a servitude in the concept of Servius. The preference for the liberty of the burdened estate did not have the same meaning for the jurists of the pre-classical period. On the contrary, they accepted the possibility of establishing a servitude by possession for two years. This is denied for dogmatic reasons by Servius,

[53] This aspect is pointed out in the "Einleitung" to the publication of the essays being presented at a German-French-workshop in Berlin in June 2017, for which see Möller, Ronin (2019), 10, 15 f.

[54] *D.* 43.14 and D. 43.15.

[55] *D.* 43.13 with the fragment from Ulpian's commentary to the praetor's edict, book 68.

[56] Möller (2018a), 18–20. The documents in Roman Statute Law are summed up by Czeguhn (2019), 29–37. For interdictal support to the maintenance of public waterways see Rainer (2019), 47–54. For the protection of maintenance activities to support private rights of water use, see Ronin (2019), 55–68.

but during the second and third centuries AD, the Roman jurists developed other solutions to protect a long-lasting use.

Third, it has become evident that the long-lasting use was protected by analogy to a legally established servitude. Use over a long time is seen as indicative of usefulness.

Fourth, it is remarkable how short the time period required for protection through the interdict is. The plaintiff only had to use the aqueduct for one day in the preceding year.

Not only from a legal but also from an archaeological perspective, one can observe how the Romans developed sophisticated means to ensure an efficient and stable water supply. Information from archaeological evidence and legal texts can be used in a complementary way in order to understand the constructions of water channelling better, the physical infrastructure and the concepts for a lawful construction as well. The system of water distribution could indeed be regulated through time units, controlling the water flow by closing the drawing off and opening it again.

The historians will perhaps ask, whether political reasons encouraged dogmatic change and how legal concepts were spread throughout the Roman Empire.[57] But these are other topics.

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[57] For some reflections on the spread of legal information and discussion see Möller (2021), 51 ff.

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