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The T-O Diagram and its Religious Connotations

A Circumstantial Case

Abstract: With over 1000 surviving examples, the T-O diagram is the most common geographical depiction of the world in the Latin Middle Ages. It depicted the three parts of the known world in a memorable and easily replicable way. The origins of the diagram are still unclear and the subject of debate: Some scholars assert that its origin is antique – that is, rooted in non-Christian traditions – while others argue for its formation in a Christian context. The debate on the origins of the T-O diagram is directly linked to the question of whether or not it can be interpreted as a Christian sign of the world. This paper considers two questions: First, whether or not the T-O diagram was ever originally intended to be a Christian sign, and second – independently from this – since when the diagram was traceably interpreted as a religious image of the world. While a Christian design of the diagram is possible (and in the author's view even probable), it cannot be proven beyond a doubt; however, it is clear that the diagram was understood as a Christian sign by contemporaries from the late eighth and early ninth century onwards.

Keywords: Medieval Geography, Medieval Cartography, T-O Diagram, Isidore of Seville

The T-O diagram is the most common medieval representation of the world.[1] It is a very simple graphic depiction of the known world: A circle represents the ocean that surrounds the earth, which is divided by a T-shaped form into three parts of unequal size. The three parts form an east-oriented image of the three continents known to the medieval world: Africa, Asia and Europe (fig. 1).[2] The concept of continents is, of course, antique in origin and was handed down to the Middle Ages through

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1 A closer analysis of the concept of continents and the T-O diagram is part of the author's ongoing research project.

2 To date there is no profound study of the concept of continents in the Middle Ages. This lacuna forms an ongoing project for the author. As a popular introduction see Christian GRATALOUP, L'invention des continents. Comment l'Europe a découpé le monde, Paris 2009. On the artificial nature of the concept, see Martin W. LEWIS/ Kären E. WIGEN, The Myth of Continents. A Critique of Metageography, Berkeley, Los Angeles, London 1997, esp. pp. 21–46.

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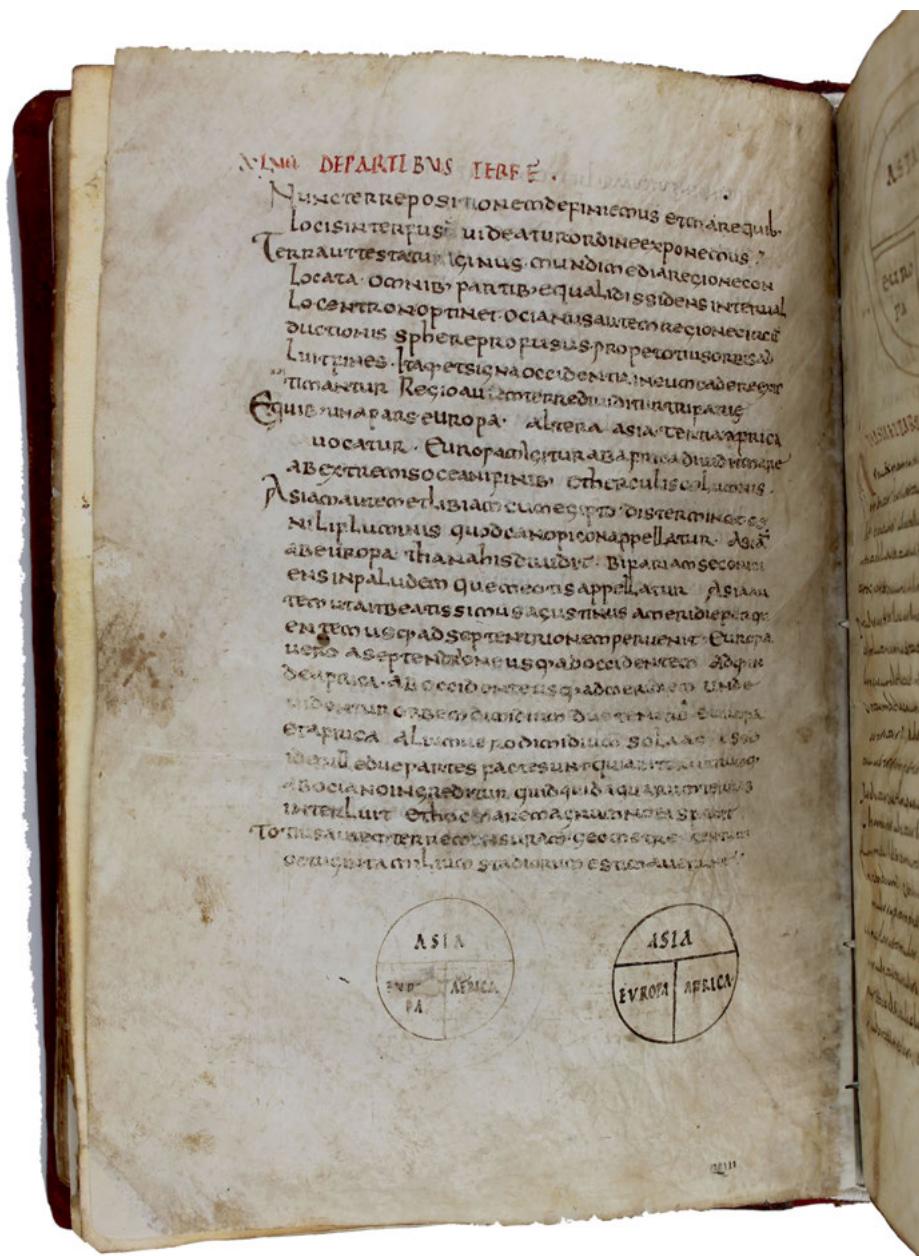
Fig. 1: The oldest known T-O diagram in a manuscript of Isidore's 'On the nature of things' (Escorial, Real Biblioteca, R.II.18, fol. 24v)

Roman encyclopaedic and geographic works.[3] According to this worldview, Asia is traditionally imagined as twice as big as the other continents and forms the eastern half of the world, while Africa and Europe, being of equal size, comprise the western half. In the simplest variant of the diagram, the three parts are not even named, since the diagram could be easily understood without inscriptions. In most cases, however, the names of the continents and often the cardinal directions are added. Sometimes the lines forming the T are identified by inscriptions as the waters constituting the boundaries between the continents: the Mediterranean separates Africa from Europe, and the rivers Nile and Don separate Asia from Africa and Europe. [4] As these most basic versions of the diagram do not really represent 'true' geographical features but rather an abstract idea, most scholars prefer to call the drawing a 'diagram' rather than a 'map' – I will do the same.[5]

The success of the diagram was supposedly due to its simple and memorable form. As Wesley STEVENS put it, the design "appears to be so simple as to require no discussion."[6] Indeed, past research has mostly focussed on the larger and more elaborately designed world maps (*mappaemundi*).[7] If the T-O diagram is mentioned

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3 On the antique origin of the concept, see James S. ROMM, Continents, Climates, and Cultures. Greek Theories of Global Structure, in: Kurt A. RAAFLAUB/ Richard J. A. TALBERT (eds.), Geography and Ethnography. Perceptions of the World in Pre-modern Societies (The Ancient World Comparative Histories), Malden/MA 2010, pp 215–235; Benet SALWAY, Putting the World in Order. Mapping in Roman Texts, in: Richard J. A. TALBERT (ed.), Ancient Perspectives. Maps and their Place in Mesopotamia, Egypt, Greece & Rome (The Kenneth Nebenzahl, Jr., Lectures in the History of Cartography 16), Chicago 2012, pp. 193–234; Klaus ZIMMERMANN, Hdt. IV 36,2 et le développement de l'image du monde d'Hécatée à Hérodote, in: Ktema 22 (1997), pp. 285–298.

4 On the importance of water(ways) for medieval geographic thinking, see Christoph MAUNTEL, Vom Ozean umfasst. Gewässer als konstitutives Element mittelalterlicher Weltordnungen, in: Friedrich EDELMAYER/ Gerhard PFEISINGER (eds.), Ozeane. Mythen, Interaktionen und Konflikte (Studien zur Geschichte und Kultur der iberischen und iberoamerikanischen Länder 16), Münster 2017, pp. 57–74; Christoph MAUNTEL/ Jenny Rahel OESTERLE, Wasserwelten. Ozeane und Meere in der mittelalterlichen christlichen und arabischen Kosmographie, in: Gerlinde HUBER-REBENICH/ Christian ROHR/ Michael STOLZ (eds.), Wasser in der mittelalterlichen Kultur. Gebrauch – Wahrnehmung – Symbolik. Water in Medieval Culture. Uses, Perceptions, and Symbolism (Das Mittelalter, Beihefte 4), Berlin, Boston 2017, pp. 59–77.

5 See Margriet HOOGVLIET, Pictura et scriptura. Textes, images et herméneutique des mappae mundi, XIIIe–XVIe siècle (Terrarum orbis 7), Turnhout 2007, p. 39; Ildar H. GARIPZANOV, The Rise of Graphicacy in Late Antiquity and the Early Middle Ages, in: Viator 46/2 (2015), pp. 1–21, here pp. 14–15., called the sign "concept representation".

6 Wesley M. STEVENS, The Figure of the Earth in Isidore's 'De natura rerum', in: Isis 71 (1980), pp. 268–277, here p. 273.

7 The literature on medieval cartography is vast. Useful introductions are as follows: Folker REICHERT, Das Bild der Welt im Mittelalter, Darmstadt 2013; Evelyn EDSON/ Emilie SAVAGE-SMITH, Medieval Views of the Cosmos, Oxford 2004; Evelyn EDSON, Mapping Time and Space. How Medieval Mapmakers Viewed Their World (Studies in Map History 1), London 1999; EAD., The World Map, 1300–1492. The Persistence of Tradition and Transformation, Baltimore 2007; and of course, the relevant volume of the History of Cartography-series: John B. HARLEY/ David WOODWARD (eds.), Cartography in Prehistoric, Ancient, and Medieval Europe and the Mediterranean (The History of Cartography 1), Chicago,

in more detail at all, it is usually the origin of the graphic sign that is discussed. It is at this crucial junction in the debate around the origins of the T-O diagram that my paper will join the discussion: first, I will argue that the design of the diagram is best understood against a Christian background; and second, I will show that the diagram was understood by contemporaries as a Christian sign from around the ninth century onwards. With regard to the focus of this volume, an analysis of the religious connotations of the T-O diagram will form the main part of this paper. For this analysis, I will assess circumstantial evidence (if the reader may grant me this judicial analogy), because clear proof, as I will demonstrate, is difficult to find: in short, we lack clear sources to direct us to the formation of the diagram or to explain its (original) meaning. Moreover, existing research is sceptical of the notion of the T-O scheme as Christian in character. Before gathering together the existing evidence, I will briefly outline what we already know about the emergence of the diagram, its design and the contexts in which it was used.

Opening Plea: On the Origins and the Christian Character of T-O Diagrams

As mentioned, the T-O diagram was the most common geographical depiction of the world in the Latin Middle Ages. In the 1960s, Marcel DESTOMBES collected a corpus of ca. 660 T-O diagrams for the period between 700 and 1500.[8] The shortcomings of this collection have been identified, but despite the fact that many more diagrams can be found in medieval manuscripts (an updated version edited by Patrick GAUTIER DAL-CHÉ will list 600 items for the period leading up to 1200 alone), DESTOMBES' work is still a valuable resource. Taking the works of DESTOMBES and GAUTIER DALCHÉ into consideration, an estimate exceeding 1000 extant medieval T-O diagrams does not seem wide of the mark.[9]

It is remarkable to note that the form of the diagram remained stable over so many centuries. From the first known exemplars from the seventh or eighth centuries

London 1987. On the cartographic depiction of the continents, see Christoph MAUNTEL et al., Mapping Continents, Inhabited Quarters and The Four Seas. Divisions of the World and the Ordering of Spaces in Latin-Christian, Arabic-Islamic and Chinese Cartography in the Twelfth to Sixteenth Centuries. A Critical Survey and Analysis, in: Journal of Transcultural Medieval Studies 5/2 (2018), pp. 295–367.
8 Marcel DESTOMBES (ed.), Mappemondes A. D. 1200–1500. Catalogue préparé par la Commission des Cartes anciennes de l'Union Géographique Internationale (Monumenta Cartographica Vestustiores Aevi 1), Amsterdam 1964, p. 21. See also, Patrick GAUTIER DALCHÉ, De la glose à la contemplation. Place et fonction de la carte dans les manuscrits du haut Moyen Âge, in: Testo e immagine nell'alto Medioevo. 15–21 aprile 1993, 2 vols. (Settimane di studio del Centro Italiano di Studi sull'Alto Medioevo 41), Spoleto 1994, vol. 2, pp. 693–771, here pp. 706–707.
9 See DESTOMBES (note 8), p. 21, who lists 441 exemplars for the later Middle Ages. The actual number is surely far bigger.

up to the fifteenth-century printed editions of the 'Etymologies' of Isidore of Seville, the T-O diagram remained virtually unchanged. However, the contexts in which the diagrams can be found are as manifold as the exemplars demonstrating stability of its design: They have been discovered in manuscripts illustrating geographical, historiographical and astronomical texts as well as in bibles and genealogical tables; also, they can be found on medieval altarpieces (reredos), paintings of Christ, and even drawn on or carved into the walls of churches. In short, the T-O diagram persisted for over 700 centuries and in many different media.

In contrast to the diagram's presence in the medieval Latin-Christian world, existing research has mostly focussed on larger, more elaborate world maps and has seldom discussed these small diagrams in more detail. In those cases where the T-O diagram was scrutinised in more detail, the question of its origin was the main focus.

The exact origin of the T-O diagram remains, however, unclear.[10] The first diagrams can be found in a seventh or eighth-century manuscript of Isidore of Seville's 'On the nature of things' ('De natura rerum') originating from the Iberian Peninsula (fig. 1).[11] After the first draft of the work was finished in 612, Isidore added another chapter describing the tripartite world order. It is this surplus chapter, added to the manuscript at the end of the seventh or in the early eighth century, that was illustrated by two T-O diagrams found at the lower margin of the page.[12] Because Isidore's 'On the nature of things' was illustrated with several round diagrams, contemporaries called it the *liber rotarum*, the "book of circles."[13] That the T-O diagram was

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10 Hoogvliet (note 5), p. 37, fn. 36; Hervé Inglebert, Interpretatio Christiana. Les mutations des savoirs (cosmographie géographie ethnographie histoire) dans l'antiquité chrétienne (30–630 après J.-C.) (Collection des études augustiniennes: Série antiquité 166), Paris 2001, p. 102; Garipzanov (note 5), p. 15.

11 Escorial, Real Biblioteca, R.II.18. On the manuscript see the Codices Latini Antiquiores-database 11/1631–1634 (based on Elias Avery Lowe's CLA (1934–1971)), URL: https://elmss.nuigalway.ie (accessed 10.06.2020); Carlos Benjamín Pereira Mira, Éxodo librario en la biblioteca capitular de Oviedo. El Codex miscellaneus ovetensis (manuscrito escurialense R.II.18), in: Territorio, Sociedad y Poder 1 (2006), pp. 263–278; Bernhard Bischoff, Die europäische Verbreitung der Werke Isidors von Sevilla, in: Manuel Cecilio Díaz y Díaz (ed.), Isidoriana. Colección de estudios sobre Isidoro de Sevilla, publicados con ocasión del 14 centenario de su nacimiento, León 1961, pp. 317–344, here pp 318–319; Gonzalo Menéndez Pidal, Mozárabes y asturianos en la cultura de la alta edad media, in: Bolétin de la Real Academia de la Historia 134 (1954), pp. 137–291., here pp. 156–158. The relevant part is the oldest of the codex; it is written in Visigoth Uncial and *capitalis rustica* and surely originated in an Iberian scriptorium. Bischoff (see above), pp. 318–319, argues for a southern-Spanish scriptorium; Menéndez Pidal (see above), pp. 154–159, implicitly assumes a northern-Spanish origin.

12 Menéndez Pidal (note 11), p. 168, argues that the left diagram is the older one, whereas the right one is a later copy. See likewise: Simone Pinet, The Task of the Cleric. Cartography, Translation, and Economics in Thirteenth-Century Iberia, Toronto 2016, pp. 14–15; Calvin Kendall's Commentary in Bede, On the Nature of Things and On Times, ed. Calvin B. Kendall/ Faith Wallis (Translated Texts for Historians 56), Liverpool 2010, p. 164.

13 See Barbara Obrist, La cosmologie médiévale. Textes et images. I: Les fondements antiques (Micrologus library 11), Florence 2004, p. 24; Jacques Fontaine, Introduction, in: Isidore de Séville, Traité de la nature, ed. Jacques Fontaine (Bibliothèque de l'École des Hautes Études Hispaniques 28),

drawn in a circular form may on the one hand be explained by the numerous other circular diagrams in Isidore's "book of circles"; on the other hand, the circular form was common also for geographical and cosmological diagrams of non-Christian origin.[14] Thus, the exterior form of the diagram is rather difficult to interpret.[15]

The T-O diagram as we find it in Isidore's work does, however, not seem to belong to those diagrams originally created for the work by the author himself: it is not mentioned in the text and deviates from the rather complex design of the other diagrams.[16] We may therefore conclude from this that the bishop of Seville was probably not the inventor of the diagram. Instead, it appears to have been added to the earliest surviving copy of the text, perhaps by a scribe or reader who felt that the additional chapter should be illustrated by a diagram as well.[17] In the centuries to come, the diagram was frequently copied into manuscripts of Isidore's works, but scribes also adapted it to illustrate geographical passages of other texts.

Referring to the earliest known exemplars, many researchers have concluded that the T-O diagram was a late antique or medieval invention. David WOODWARD, for example, argues that the autograph of the 'Etymologies' was presumably illustrated by a T-O diagram that merged the Greco-Roman idea of a tripartite world order with early Christian patristic writings, for example the attribution of the continents to the three sons of Noah.[18] Ildar GARIPZANOV also sees the diagram as characterised

Bordeaux 1960, pp. 1–163, here pp. 15–17; Jacques FONTAINE, Isidore de Séville. Genèse et originalité de la culture hispanique au temps des Wisigoths (Témoins de notre histoire), Turnhout 2000, pp. 297–300; Evelyn EDSON, Maps in Context. Isidore, Orosius, and the Medieval Image of the World, in: Richard J. A. TALBERT/ Richard W. UNGER (eds.), Cartography in Antiquity and the Middle Ages. Fresh Perspectives, New Methods (Technology and Change in History 10), Leiden, Boston 2008, pp. 219–236, here pp. 225–226. On the diagrams, see Bernard TEYSSÈDRE, Les illustrations du De natura rerum d'Isidore. Un example de survie de la figure humaine dans les manuscrits précarolingiens, in: Gazette des Beaux-Arts 66 (1960), pp. 19–34; OBRIST (see above), pp. 273–278; Michael GORMAN, The Diagrams in the Oldest Manuscripts of Isidore's 'De natura rerum' with a Note on the Manuscript Tradition of Isidore's Works, in: Studi medievali 42/4 (2001), pp. 529–545.

14 See e. g. the diagrams in Macrobius' 'Commentary on the Dream of Scipio', on this OBRIST (note 13), pp. 171–194; also see Alfred HIATT, The Map of Macrobius before 1100, in: Imago Mundi 59 (2007), pp. 149–176.

15 To my knowledge, there is only one T-O diagram in rectangular shape, as an eleventh-century gloss in a ninth-century manuscript of Orosius: St. Gallen, Stiftsbibliothek, Cod. Sang. 621, p 35.

16 Usually, Isidore refers to the diagrams in his text: see e. g. Isidore of Seville, De natura rerum [Traité de la nature], ed. Jacques FONTAINE (Bibliothèque de l'École des Hautes Études Hispaniques 28), Bordeaux 1960, p. 211 (X.2: *Quorum circulorum diuisiones talis distinguit figura*), p. 213 (XI.1: *subiecta expressi pictura. Haec figura solida est...*). See FONTAINE (note 13), pp. 151–161; STEVENS (note 6), pp. 272–273.; GAUTIER DALCHÉ (note 8), p. 707; William D. McCREADY, Isidore, the Antipodeans, and the Shape of the Earth, in: Isis 87,1 (1996), pp. 108–127, esp. pp 113–127.

17 GAUTIER DALCHÉ (note 8), pp. 706–708. EDSON (note 13), p. 226.

18 David WOODWARD, Medieval Mappaemundi, in: HARLEY/ WOODWARD (note 7), pp. 286–370, here pp. 299–301 and 328. See also John WILLIAMS, Isidore, Orosius and the Beatus Map, in: Imago Mundi 49 (1997), pp. 7–32, here p. 13.

by this presumably biblical information. [19] However, the first surviving T-O diagrams do not include the sons of Noah, nor does the bible link the three parts of the earth to the three sons.[20] Hence, the medieval (and Christian) origin of the T-O diagram cannot be deduced from the (later) inclusion of religious knowledge.

In contrast to this position, many researchers have argued that the diagram is of antique Roman origin. This view was mainly established in the nineteenth century by Konrad MILLER, who claimed that the circular shape as well as the T form of the diagram were owing to antique specifications. Furthermore, MILLER stated that (late) antique authors such as Sallust or Augustine effectively described the T-O model in their works.[21] MILLER'S argument was broadly accepted, and an antique origin for the diagram was often claimed.[22] However, as there are no surviving maps from antiquity, we cannot securely conclude that the notion of the three parts of the earth was mapped at all, let alone in a circular shape oriented towards the east and with a 2:1:1 size relation between the continents (that is, Asia twice as big as Africa and Europe) – all of these can be identified as rather later, medieval characteristics. GAUTIER DALCHÉ took a middle-ground position and argued that the diagram developed in late antique writing schools (third to sixth centuries).[23] However, this argu-

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19 GARIPZANOV (note 5), p. 16. The figure GARIPZANOV refers to is (interestingly enough) not a manuscript source but rather a rendering by the author (including the sons of Noah).
20 EDSON, Mapping (note 7), p. 15. See also Klaus OSCHEMA, Bilder von Europa im Mittelalter (Mittelalter-Forschungen 43), Ostfildern 2013, pp. 115–116.
21 Konrad MILLER, Mappae mundi. Die ältesten Weltkarten, 6 vols., Stuttgart 1895–1898, vol. 3, pp. 116–122 (chap. 13: "Die T-Karten"). See also ibid., pp. 110–115 (chap. 12: 'Die Sallustkarten').
22 Uwe RUBERG, Mappae mundi des Mittelalters im Zusammenwirken von Text und Bild. Mit einem Beitrag zur Verbindung von Antikem und Christlichem in der principium- und finis-Thematik auf der Ebstorfkarte, in: Christel MEIER-STAUBACH/ Uwe RUBERG (eds.), Text und Bild. Aspekte des Zusammenwirkens zweier Künste in Mittelalter und früher Neuzeit, Wiesbaden 1980, pp. 550–592, here p. 555, claims a "Roman origin" for the T-O diagram. EDSON/ SAVAGE-SMITH (note 7), p. 44, interpret the T-O model as passed down to the Middle Ages by the (antique) works of Sallust and Lucan. As the Arabic-Islamic world did not know these works the T-O diagram remained unknown to their cartographic tradition (ibid., 90). Similar: INGLEBERT (note 10), p. 102; Jörg-Geerd ARENTZEN, Imago mundi cartographica. Studien zur Bildlichkeit mittelalterlicher Welt- und Ökumenekarten unter besonderer Berücksichtigung des Zusammenwirkens von Text und Bild (Münstersche Mittelalter-Schriften 53), Munich 1984, pp. 64 and 124; Paul ZUMTHOR, La mesure du monde. Représentation de l'espace au Moyen Âge, Paris 1993, p. 236; EDSON, Mapping (note 7), p. 4; EDSON, World map (note 7), pp. 9–11; Christian JACOB, L'empire des cartes. Approche théorique de la cartographie à travers l'histoire (Bibliothèque Albin Michel: Histoire), Paris 1992, p. 180.
23 Dating from the fifth to sixth centuries: Patrick GAUTIER DALCHÉ, Principes et modes de la représentation de l'espace géographique durant le haut moyen Âge, in: Uomo e spazio nell'alto medioevo. 4–8 aprile 2002, 2 vols. (Settimane di studio del Centro Italiano di Studi sull'Alto Medioevo 50), Spoleto 2003, vol. 1, pp. 117–150, here pp. 133–134.; ID., La 'Descriptio mappe mundi' de Hugues de Saint-Victor. Texte inédit avec introduction et commentaire (Collection des études augustiniennes: Série Moyen-âge et temps modernes 20), Paris 1988, pp. 62–77. Dating from the third to sixth centuries: ID., L'Héritage antique de la cartographie médiévale. Les problèmes et les acquis, in: TALBERT/ UNGER (note 13), pp. 29–66, here pp. 37–38. Like GAUTIER DALCHÉ, also GORMAN (note 13), p. 529,

ment also suffers from a lack of secure evidence from sources: there are no surviving diagrams from that time and those late antique authors GAUTIER DALCHÉ presents as examples (i. e. Eumenius and Julius Orator[24]) did not even mention the continents in their works; thus, it is questionable whether they were ever even mapped at all.

Closely linked to this problem of the chronologic origin is the question of whether the T-O diagram can be considered a genuinely Christian depiction of the world. In 1981 Jonathan LANMAN interpreted the T as an early form of the cross – the Christian symbol per se.[25] A few years later, David WOODWARD also referred to the diagram as genuinely Christian, highlighting the various religious contents the map was associated with, namely the city of Jerusalem, the three sons of Noah as the progenitors of humankind after the deluge, and the figure of Christ, which sometimes frames these diagrams or similar maps.[26] Indeed, although the T-O diagram has often been understood as a Christian image of the world, in most cases this has been more of a claim than an argument.[27] Of the sceptical voices opposing this notion, most notable is perhaps GAUTIER DALCHÉ, who critically revised WOODWARD's argument by mentioning the chronology: the first known T-O diagrams do not depict Jerusalem, the sons of Noah, or the figure of Christ. Indeed, all these characteristics were clearly later additions.[28] Moreover, GAUTER DALCHÉ opposed LANMAN and argued that the T inscribed in the diagram was in no way specifically 'medieval' or 'Christian'.[29] Equally sceptical, Michael BORGOLTE noted that the orientation to the east of the T-O diagrams should not be interpreted as Christian, since the diagrams in the manuscripts of Sallust and Lucan – which he claims to be antique and pre-Christian – were similarly oriented.[30] However, as there are no extant antique manuscripts of these works and the earliest medieval ones date to the ninth century and are not all illustrated with diagrams, it is quite unlikely that the T-O diagram originally belonged to any of them.[31]

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considers the diagrams as "obviously" stemming from late-antique schoolbooks. Marcia KUPFER, Art and Optics in the Hereford Map. An English mappa mundi, c. 1300, New Haven/CT 2016, p. 138, also follows GAUTIER DALCHÉ.

24 GAUTIER DALCHÉ, L'Héritage (note 23), pp. 38–39.

25 Jonathan T. LANMAN, The Religious Symbolism of the T in T-O maps, in: Cartographica 18 (1981), pp. 18–22.

26 David WOODWARD, Reality, Symbolism, Time, and Space in Medieval World Maps, in: Annals of the Association of American Geographers 75 (1985), pp. 510–521, here p. 515.

27 See for example GARIPZANOV (note 5), p. 16.

28 GAUTIER DALCHÉ, L'Héritage (note 23), pp. 54–57.

29 Ibid., pp. 133–134.

30 Michael BORGOLTE, Christliche und muslimische Repräsentationen der Welt. Ein Versuch in transdisziplinärer Mediävistik, in: Berlin-Brandenburgische Akademie der Wissenschaften, Berichte und Abhandlungen 14 (2008), pp. 89–147, here pp. 111–112, fn. 88.

31 The first known Sallust-manuscripts with a diagram are Vatican City, Biblioteca Apostolica Vaticana, Vat. lat. 3328, fol. 13v (c. 1000, the diagram might be a later addition) and Leipzig, Universitätsbibliothek, Ms 1607, fol. 1r (9th c., the map might be a later addition). Other manuscripts from the ninth century do not feature diagrams: Paris, Bibliothèque nationale de France, Ms lat. 16024 (9th c.); Paris, Bibliothèque nationale de France, Ms lat. 16025 (late 9th c.). The first known Lucan-manu-

In my view, we cannot deduce an antique and pre-Christian origin of the T-O diagram simply because the idea of a tripartite world stemmed from antique authors.[32] Furthermore, the examples above have shown that the reasoning around the origins and the Christian character of the T-O diagrams requires closer scrutiny of chronology and the manuscript tradition. In the following, on the basis of the first known exemplars I intend to understand T-O diagrams as genuinely medieval inventions, an assumption that has naturally led me to the next logical question of whether or not they can even be considered *Christian* depictions of the world. Hereinafter, I will focus on the three main aspects of T-O diagrams mentioned above that seem relevant to the question of their Christian character.

Gathering of Evidence

Item #1: Orientation

The first piece of evidence is a rather basic one and constitutes the central characteristic of nearly every T-O diagram: its orientation towards the east.[33] The east was, without a doubt, the most important cardinal direction for Christianity. It is important to note that this accentuation was not rooted in the bible itself, which does not indicate a clear preference for any cardinal direction,[34] instead this primacy of the east is owing to socio-historical developments in early Christianity: the Christian writer Tertullian, for example, around the year 200 described the sunrise as a symbol for Christ.[35] Further evidence emphasises that early Christians laid great emphasis on

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script with a diagram is Bern, Burgerbibliothek, Cod. 45, fol. 44v (Fleury, 2nd third 9th c.). Other manuscripts from the 9th c. do not show diagrams: Paris, Bibliothèque nationale de France, Ms lat. 7502 (Tours, c. 820); Paris, Bibliothèque nationale de France, Ms lat. 10314 (9th c.).

32 Indeed, this is not my own argument, but that of GAUTIER DALCHÉ (note 8), p. 707: "En réalité, il faut distinguer les idées qui se trouvent à la base de la tripartition du monde, et qui certes sont d'origine antique, de leur traduction sous forme figurée, dont il n'existe pas d'indices qu'elle soit antérieure au haut Moyen Age."

33 As a note, I want to mention that there are some T-O diagrams orientated towards north, south, and west as well. They are, however, few in number, mostly date from later centuries, and in some cases do not depict the continents, but only use the T-O form in order to illustrate other concepts, e.g. the elements, as it is the case in the thirteenth-century 'Breviari d'amor' of Matfre Ermengaud, see Kaja LASKE-FIX, Der Bildzyklus des Breviari d'Amor (Münchener kunsthistorische Abhandlungen 5), Munich 1973, pp. 49 and 151.

34 On this, see Ulrich HÜBNER, Himmelsrichtungen, in: Neues Bibel-Lexikon, vol. 2 (1995), col. 161; Alexander PODOSSINOV, Himmelsrichtung, in: Reallexikon für Antike und Christentum, vol. 15 (1991), col. 233–286.

35 Quintus Septimius Florens Tertullianus, Adversus Valentinianos, ed. Emil KROYMANN, in: Quintus Septimius Florens Tertullianus, Opera, 2 vols. (Corpus Christianorum, Series Latina 1–2), Turnhout 1954, vol. 2, pp. 751–778, here pp. 754–755 (III.1–2): *Nostrae columbae etiam domus simplex, in editis semper et apertis et ad lucem. Amat figura spiritus sancti orientem, Christi figuram.*

the east because this is where the sun rose.[36] Hence, an astronomical phenomenon became commonly interpreted from a religious angle. It is noteworthy that Christianity is far from the only religious group to give prominence to the east by aligning their sacred buildings and their prayer direction accordingly.[37] Experts suggest that Christianity was influenced by late antique cults that emphasized the movement of the sun, and therefore the east as the direction of sunrise.[38]

Indeed, we can trace the impact of this development by comparing the way in which antique and Christian authors ordered their description of the world. On the one hand, pre-Christian encyclopaedias and geographical texts did not follow any coherent orientation: Polybius began his description of the world in the east, whereas other Roman authors, including Pomponius Mela or Pliny, chose to start in the west.[39] Consequently, there was no clear order to the way in which the three continents were listed in antique sources. All in all, there are six possible ways of ordering a set of three items, and all six ways of ordering the names of the continents can be found in the antique sources, as Sallway has shown.[40]

Early Christian authors, in contrast, chose to highlight the east for religious reasons and listed the continents accordingly: Jerome, Augustine, Orosius and Isidore of Seville set the tone and named Asia first, Europe second, and Africa third – which was to become the standard order for centuries to come.[41] Accordingly, almost

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36 See Martin Wallraff, Christus verus sol. Sonnenverehrung und Christentum in der Spätantike (Jahrbuch für Antike und Christentum: Ergänzungsband 32), Münster 2001.

37 See Podossinov (note 34). On the eastward orientation of sacral buildings see Heinrich Nissen, Orientation. Studien zur Geschichte der Religion, 3 vols., Berlin 1906–1910. Focussing on synagogues: Friedrich Möbius, Ostung, in: Lexikon der Kunst. Neubearbeitung, vol. 5 (1991), pp. 343–345.

38 Wallraff (note 36), pp. 29–39.

39 Polybius, The Histories, ed. Brian C. McGing/ Robin Waterfield (Oxford World's Classics), Oxford 2010, pp. 158–159 (III.36–37); Pomponius Mela, De chorographia libri tres, ed. Piergiorgio Parroni, Rome 1984, p. 116 (I.24); Plinius Secundus, Gaius, Historia naturalis. Natural History, 10 vols., ed. Harris Rackham/ William H. S. Jones/ David E. Eichholz (The Loeb Classical Library), London 1938–1962, vol. 2, p. 4 (III.3–4).

40 Salway (note 3), pp. 214–216.

41 S. Hieronymi Presbyteri Opera I,4. Commentariorum in Hiezechielem libri XIV, ed. Glorie François (Corpus Christianorum, Series Latina 75), Turnhout 1964, p. 56 (II.5.5–6): *Hierusalern in medio mundi sitam, hic idem propheta testatur, umbilicum terrae eam esse demonstrans;* [...] *A partibus enim orientis cingitur plaga quae appellatur Asia; a partibus occidentis eius quae vocatur Europa; a meridie et austro Libya et Africa; a septemtrione Scythis, Armenia atque Perside et cunctis Ponti nationibus.* Augustinus, Aurelius, De civitate Dei, 2 vol., ed. Bernhard Dombart/ Alphons Kalb (Corpus Christianorum, Series Latina 47–48), Turnhout 1955, vol. 2, p. 521 (XVI.17): *Asiam nunc dico non illam partem quae huius maioris Asiae una prouincia est, sed eam quae uniuersa Asia nuncupatur, quam quidam in altera duarum, plerique autem in tertia totius orbis parte posuerunt, ut sint omnes Asia, Europa et Africa; quod non aequali diuisione fecerunt.* Paulus Orosius, Histoires (contre les Païens). Historiae adversus paganos, 3 vol. ed. Marie–Pierre Arnaud-Lindet (Collection des universités de France, Série latine), Paris 1990–1991, vol. 1, p. 13 (I.2.1): *Maiores nostri orbem totius terrae, oceani limbo circumseptum, triquadrum statuere eiusque tres partes Asiam, Europam et Africam uocauerunt.* Isidore of Seville, Etymologiae sive origines libri XX, 2 vol. ed. Wallace Martin Lindsay

every Christian geographical text starts its description of the world in the east, which Isidore explicitly described as the first of all the cardinal directions.[42]

The oldest T-O diagrams that survive today are placed in exactly this context: they illustrate the description of the world in the encyclopaedias written by Isidore of Seville. Like the text, they highlight the east and Asia (fig. 1).[43] The religious importance and primacy of the east led to the orientation of the Christian worldview and to an accentuation of the Asian continent. As we do not find these characteristics in pre-Christian texts, they can best be explained by originating from a genuinely Christian worldview. Moreover, other (circular) diagrams that are probably indeed of non-Christian origin, for example the figures illustrating the fifth-century 'Commentary on the Dream of Scipio' by Macrobius, are mostly orientated towards the north.[44]

The eastward orientation of the T-O diagram fits with the Christian background of Isidore's works, particularly as he lists the Christian Paradise as the first province of Asia.[45] Indeed, according to early bible versions ('Septuaginta' and 'Vetus Latina') and exegetical texts, the Christian Paradise was to be found in the far east (Gen 2,8: κατὰ ἀνατολὰς bzw. *ad Orientem*).[46] Following this, later medieval maps famously depicted Paradise in the far east, including it as a part of the natural world, though not accessible to humankind.[47]

An earlier precursor of this cartographic tradition is the highlighting of the east in early T-O diagrams: Since the eighth or ninth century, we find the upmost east on some of these drawings marked with a small cross (fig. 2). This can be understood as

(Scriptorum classicorum bibliotheca Oxoniensis), Oxford 1911, XIV.2.1–3: *Divisus est autem trifarie: e quibus una pars Asia, altera Europa, tertia Africa nuncupatur.*

42 Isidore of Seville, Etymologiae (note 41), XIV.3.2–3: *De quattuor partibus caeli. Climata caeli, id est plagae vel partes, quattuor sunt, ex quibus prima pars orientalis est, unde aliquae stellae oriuntur.* See also ibid., III.42.1 and XIII.1.3. Isidore frames this quite similarly in Isidore of Seville, De natura rerum (note 16), pp. 207–208 (IX.3): *Nam partes eius quattuor sunt. Prima pars mundi est orientis.*

43 On the manuscript, see note 11. The text of Isidore's 'On the nature of things' deviates from the 'Etymologies', as he cites an earlier astronomic text by Hyginus, see Isidore of Seville, De natura rerum (note 16), p. 325 (XLVIII.2): *Regio autem terrae diuiditur trifarie, e quibus una pars Europa, altera Asia, tertia Africa uocatur.* Compare Hyginus, De Astronomia, ed. Ghislaine Viré, Stuttgart, Leipzig 1992, p. 11 (I.9). Hyginus can most likely be identified with Hyginus Mythographus (early 2nd c.), see Alan Cameron, Greek Mythography in the Roman World (American Classical Studies 48), Oxford, New York 2004, p. 11. Thus, Isidore's text of 'On the nature of things' does not show the same Christian characteristics as the 'Etymologies'.

44 Obrist (note 13), pp. 119–120 and 147. On Macrobius: ibid., 171–194; Gautier Dalché, L'Héritage (note 23), p. 36.

45 Isidore of Seville, Etymologiae (note 41), XIV.3.1: *[Asia] Habet autem provincias multas et regiones, quarum breviter nomina et situs expediam, sumpto initio a Paradiso.*

46 Jerome, by contrast, highlighted the ambivalent connotation of the Hebrew original which can be understood in a spatial as well as temporal way. Accordingly, he translated that the Paradise was created *a principio*, i.e. "at the beginning". See Alessandro Scafi, Mapping Paradise. A History of Heaven on Earth, London 2006, p. 35.

47 On this, see ibid.
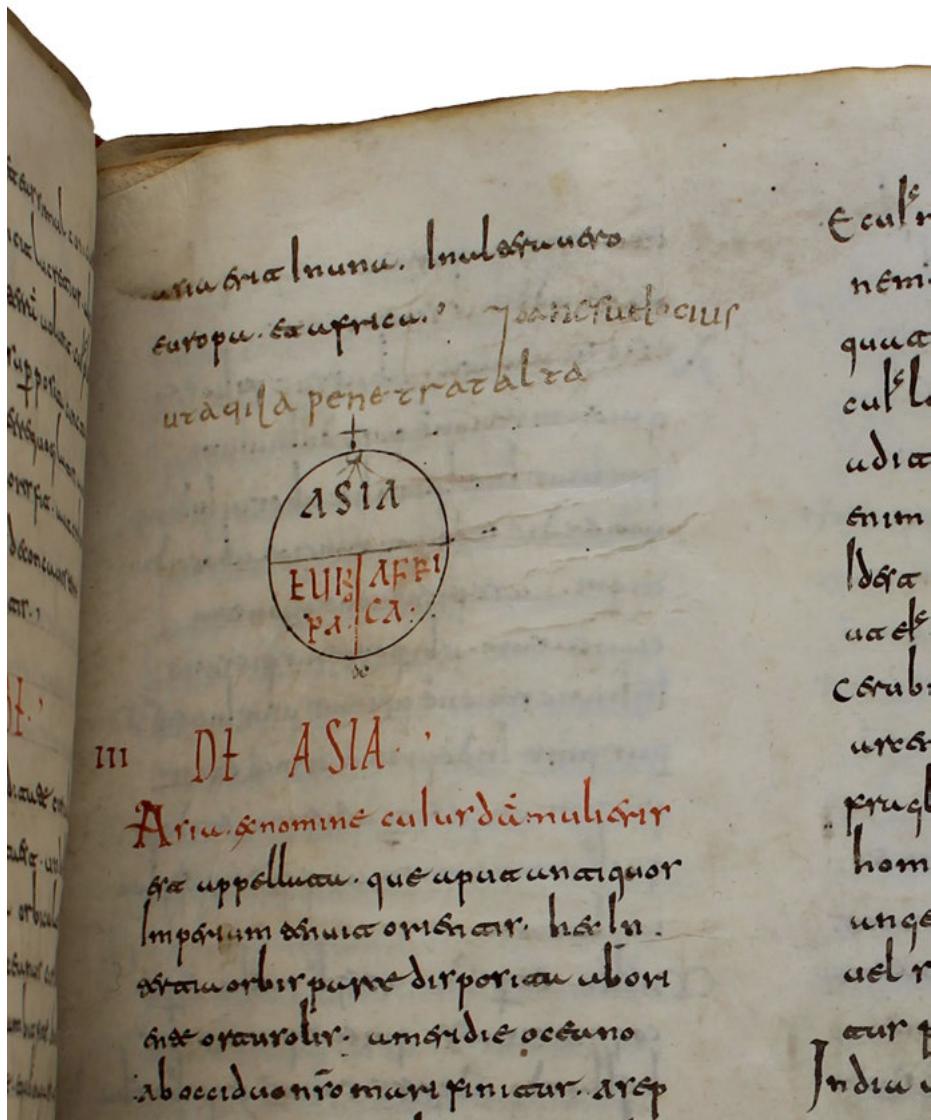
Fig. 2: A T-O diagram with the Paradise highlighted in the east, from southern France, ca. 791–812 (Escorial, Real Biblioteca, P.I.8, fol. 187r)

a clear Christian accentuation of the east which reveals that the orientation of the diagram was not an arbitrary choice. The first diagram highlighting the east in this way dates to ca. 800; inside the eastern part of Asia it adds a small semi-circular form with four lines radiating westwards – surely a representation of the earthly

Paradise with its four rivers.[48] At the same time scribes developed a slightly divergent T-O diagram that highlighted the Sea of Azov (*Meotides paludes*), and often these diagrams bore a cross in the upmost east.[49]

To be sure, the oldest existing examples of the T-O diagram do not highlight the east in this way. However, we can conclude that at least since the late eighth or early ninth century the orientation of the diagrams was perceived to be rooted in Christian symbolism. Furthermore, I would argue that this characteristic orientation to the east can best be understood as a Christian arrangement of the diagram, conforming as it does with the importance of the east for early Christianity. This geographic feature cannot be securely linked to older, non-Christian sources. Since the ninth century, scribes may have further emphasised this Christian arrangement of the diagram by adding crosses and by highlighting the location of Paradise.

Item #2: The T as a Symbol of the Cross

The cross is, as we have seen, one of the most prominent and important symbols of Christianity.[50] With regard to the T-O diagram, the idea of interpreting the T inscribed in the O as a cross rather than as a Latin letter was first presented by Jonathan LANMAN in 1981. LANMAN argued that the T symbolised the Christian cross in the form of the Greek letter *tau* (T), an early Christian variant of the cross.[51] Although his argu-

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48 Escorial, Real Biblioteca P. I. 8, fol. 187r (ca. 791–812, probably written in Villeneuve-lès-Maguelone (near Montpellier)), see Codices Latini Antiquiores-database (note 11), 11/1630. See PINET (note 12), p. 15; MENÉNDEZ PIDAL (note 11), p. 180–181; EDSON, Mapping (note 7), pp. 47–48.

49 Escorial, Real Biblioteca, Cod P I 7, fol. 222v (792–842); Escorial, Real Biblioteca T II 24, fol. 175r (9th c.); Zofingen, Stadtbibliothek, Pa 32, fol. 210v (2nd qu. 9th c.); St. Gall, Stiftsbibliothek, Cod Sang 236, fol. 89r (2nd half 9th c.); Tours, Bibliothéque municipale, Ms 844, fol. 110 (10th c.); Madrid, Biblioteca Nacional de España, Ms 10008, fol. 166v (11th c.); Vatican City, Biblioteca Apostolica Vaticana, Reg. lat. 630, fol. 23r (1176–1225); Florence, Biblioteca Medicea Laurenziana, Plut.90 sup 17.1, fol. 173v (13th c.); Madrid, Real Academia de la Historia, Inc San Román 7, p. 206 (1483, Petrus Loeslein); London British Library, Harley MS 3035, fol. 175v (1495). Vatican City, Biblioteca Apostolica Vaticana, Vat. lat. 623, fol. 110r (1276–1325) depicts both version of the diagram. For diagrams with a slightly different design see Escorial, Real Biblioteca, P I 8, fol. 187r (9th c.); Madrid, Real Academia de la Historia, Ms 25, fol 204v (946); Escorial, Real Biblioteca MS I. 3, fol 177v (1047); Aix-en-Provence, Bibliothéque municipale, Ms 0025, fol. 293r (12th c.); Pontarlier, Bibliothéque municipale, Ms 1, fol. 127v (14th c.). The manuscript London, British Library, Royal 12 F IV, fol. 135v (12th c.) depicts crosses on all four sides of the diagram.

50 Larry W. HURTADO, Earliest Christian Graphic Symbols. Examples and References from the Second/Third Centuries, in: Ildar H. GARIPZANOV/ Caroline GOODSON/ Henry MAGUIRE (eds.), Graphic Signs of Identity, Faith, and Power in Late Antiquity and the Early Middle Ages (Cursor mundi 27), Turnhout 2017, pp. 25–44, here pp. 32–35.

51 LANMAN (note 25). On the early history and later (Franciscan) usage of the *tau* cross see Damien VORREUX, Un symbole franciscain, le Tau. Histoire, théologie et iconographie (Présence de Saint François 30), Paris 1977.

ment is often accepted, it was never explicitly based on a firm source base.[52] If we take into account the frequent presence of Christian signs during late antiquity and the early Middle Ages in general[53] and the frequent and dominant use of circular and cross-like forms for diagrams in particular,[54] the link between our T-O diagram and the symbol of the cross does indeed seem plausible. Other scholars, for example GAUTIER DALCHÉ, doubted that any connection could be made between the T and the sign of the cross – also without providing convincing arguments for their scepticism.[55] Considering this question, the problem is surely the lack of sources: As far as I know, there is no clear evidence that the T of the T-O diagram was interpreted as a cross. However, I also want to make a case that even if not construed as a Christian symbol from its very beginnings, the T in the T-O diagram was very quickly understood as such.

In order to prove this point, we must gather together the scattered evidence. Most hints have no direct link to geographic diagrams but rather indicate that the Latin letter T was understood as a *tau* cross and thus as a Christian symbol. One example establishing this connection is an anonymous commentary on the Gospel of Mark, written between 600 and 800. The author first related the cross to the four cardinal directions and then compared this form to a flying eagle, a swimming man, and the mast of a sailing ship. Starting with a four-ended cross, he transformed this through his comparisons into a three-ended one. In conclusion, the author wrote that the *tau*, the Greek letter, "is the sign of salvation and the cross."[56]

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52 Dietrich BRIESEMEISTER, Apuntes sobre la cartografía figurativa. Alegorías, símboles y emblemas en mapas y globos de la Edad Media y temprana Modernidad, in: José ORTEGA VALCÁRCEL/ Dietrich BRIESEMEISTER (eds.), Mapas de Heinrich Bünting Itinerarium Sacrae Scripturae. Siglo XVI, Burgos 2010, pp. 69–216, here p. 73, states the T referred to the 'cross of the saviour' ("la T remite a la cruz del Salvador"). Hartmut KUGLER, Himmelsrichtungen und Erdregionen auf mittelalterlichen Weltkarten, in: Jürg GLAUSER/ Christian KIENING (eds.), Text – Bild – Karte. Kartographien der Vormoderne (Rombach Litterae 105), Freiburg/Breisgau 2007, pp. 175–199, here p. 176, sees the *tau* projected on the world. Similar: Horst WENZEL, Noah und seine Söhne oder die Neueinteilung der Welt nach der Sintflut, in: Steffen MARTUS/ Andrea POLASCHEGG (eds.), Das Buch der Bücher – gelesen. Lesarten der Bibel in den Wissenschaften und Künsten (Publikationen zur Zeitschrift für Germanistik 13), Bern, et al. 2006, pp. 53–84, here pp. 67–68.
53 GARIPZANOV (note 5). HURTADO (note 50) refers to examples from the second and third centuries.
54 Bianca KÜHNEL, Carolingian Diagrams, Images of the Invisible, in: Giselle de NIE/ Karl F. MORRISON/ Marco MOSTERT (eds.), Seeing the Invisible in Late Antiquity and the Early Middle Ages. Papers from 'Verbal and Pictorial Imaging: Representing and Accessing Experience of the Invisible 400–1000' (Utrecht 11–13 December 2003) (Utrecht Studies in Medieval Literacy 14), Turnhout 2005, pp. 359–389, states that in this way, cosmology, geography, and chronology were linked with eschatological motifs. See also Bruce EASTWOOD, Ordering the Heavens. Roman Astronomy and Cosmology in the Carolingian Renaissance, Leiden, Boston 2007, p. 373.
55 GAUTIER DALCHÉ, Principes (note 23), pp. 133–134. Similar: BORGOLTE (note 30), p. 115.
56 Expositio Evangelii Secundum Marcum, ed. Michael CAHILL (Corpus Christianorum, Series Latina 82), Turnhout 1997, p. 73 (15.21): *Ipsa species crucis, quid est nisi forma quadrata mundi? Oriens 'de vertice fulget'; 'arcton dextra tenet'; auster leua consistit; occidens sub plantis firmatur. Unde apostolus dicit ut sciamus quae sit 'altitude', et 'latitude', 'longitude', et 'profundum.' Aues quando uolant ad*

Because of the resemblance to the simple twin-beamed cross, the Greek letter *tau* became an early Christian sign and was thought of as the symbol of the crucified Christ.[57] Moreover, the sign also evoked the words of the prophet Ezekiel (9,4) who stated that God had his believers marked with a *tau* on their front to spare them from the imminent divine punishment of Jerusalem.[58] The *tau* as a salvific sign for true believers also was interpreted as the symbol the Israelites painted on their door-posts to save their first-born children from death during their Egyptian exile (Ex 12,7). This story was well known in the Middle Ages, and Isidore even relates the biblical episode when describing the letter *tau*.[59] Later, the vision of the prophet Ezekiel was also implemented visually, for example in a twelfth-century stained-glass window in the former Cucuphas-Chapel of the Cathedral of Saint-Denis.[60] We can find similar depictions in other stained-glass windows or on enamel plates, mostly dating to the twelfth century and thus proving the ongoing importance and popularity of the scene.[61]

Hence, the *tau* cross was already used in early Christian times as a symbol for the Christian cross and was present in ecclesial contexts in the high Middle Ages. However, this finding cannot be simply transferred to all diagrammatic or cartographic

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ethera formam crucis assumunt. Homo natans per aquas uel orans forma crucis uehitur. Nauis transiens maria antenna cruci similata sufflatur. T tau littera, signum salutis et crucis describitur. See Piotr KO-CHANEK, Die Vorstellung vom Norden und der Eurozentrismus. Eine Auswertung der patristischen und mittelalterlichen Literatur (Veröffentlichungen des Instituts für Europäische Geschichte Mainz 205), Mainz 2004, pp. 215–216.

57 See the impressive collection of citations from patristic sources in KOCHANEK (note 56), pp. 215–216, fn. 191.

58 Ez 9,4: *Et dixit Dominus ad eum: Transi per mediam civitatem, in medio Jerusalem, et signa thau super frontes virorum gementium et dolentium super cunctis abominationibus quæ fiunt in medio ejus.*

59 Isidore of Seville, Etymologiae (note 41), I.3.9.

60 The window, today in the chapel of Sainte-Geneviève, was renewed during restoration works in the nineteenth century under Viollet-le-Duc. However, some older parts from the twelfth century survived and were incorporated into the new window. See Louis GRODECKI, Les vitraux de Saint-Denis (1). Étude sur le Vitraul au XIIᵉ siècle (Corpus vitrearum Medii Aevi – France: Série études 1), Paris 1976, pp. 54 and pp. 103–105.

61 The 'window of redemption' (before 1147) in the cathedral of Saint-Etienne in Châlons-en-Champagne depicts how a man paints a *tau* on a door frame. The motif was also used on enamel crosses, e.g. the base of the cross of Saint-Bertin, which depicts the *tau* as a Christian sign even two times: firstly, on the foot in connection with Ex 12,7 and secondly, on the post in connection with Ez 9,4 (Saint-Omer, Musée de l'Hôtel Sandelin, Inv. 2800 bis (1175–1180, Saint-Omer, Abbey of Saint-Bertin)). See http://collection.musenor.com/application/moteur_recherche/consultationOeuvre.aspx?idOeuvre=394476

(accessed 10.06.2020) and http://www2.culture.gouv.fr/public/mistral/memsmn_fr?ACTION=CHERCHER&FIELD_98=OBJT&VALUE_98=Pied%20de%20croix%20de%20Saint-Bertin (accessed 10.06.2020). Similarly: Typological cross: Brussels, Musée Cinquantenaire, Collection Art mosan et roman, Inv. 2293 (ca. 1150–1175, Meuse region). Reliquary cross: London, British Museum, Inv. 1856, 0718.1 (1160–1170, Belgium, Mosel region). Enamel plate: Baltimore, Walters Art Mus, Inv. 44.616 (Mid-12th c., Mosel region).

representations from the early Middle Ages.[62] To build this bridge, further evidence is needed. Such evidence may, for example, be found in the wall inscriptions in the abbey of Centula in Saint Riquier dating to the mid-ninth century. After praising God and the local scriptorium, a monk named Micon described images of Christ that were presumably painted on the walls of the scriptorium.[63] Micon subsequently reflected on these images which seemed to depict the crucified Christ, the cross itself, and possibly a map of the tripartite world: "Here is seen pictured an image of the world destined to perish / spread out, the world is contained in three parts, / of which the first place is Asia, the second Europe; finally / Africa occupies its end."[64] The close connection between the cross and a map of the tripartite world as described by Micon suggests a drawing according to the T-O scheme. The T-shaped map would then have mirrored the shape of the body of the crucified Christ or, to put it differently, the figure of the crucified Christ invited monks to reflect on the tripartite world order.[65]

The visual similarity between the shape of the Latin letter T, the Greek *tau* and the figure of the crucified Christ is also the background for numerous illuminated T initials. As a letter, they represent a Latin T; as an image, they depict the crucified Christ.[66] We can trace these initials back to the second half of the eighth century, often in manuscripts of the Canon of the Mass, illustrating the first word of the prayer *Te igitur,*[67] but they can also be found in other works and contexts.[68]

Combinations of T-shaped crosses and crucified Christs became increasingly popular in this period.[69] One exceptionally noteworthy example with regard to a

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62 See GARIPZANOV (note 5), p. 16.

63 Carmina Centulensia, in: Poetae Latini aevi Carolini, vol. 3, ed. Ludwig TRAUBE (Monumenta Germaniae Historica Poetae 3), Berlin 1896, pp. 265–368, here pp. 296–2197 (VIII–XII).

64 Ibid., p. 297 (XIII): *Hic mundi species perituri picta videtur, / Partibus in ternis qui spatius inest, / Quarum Asia primumque locum hinc Europa secundum, / Possidet extremum Africa deinde suum.*

65 See Marcia KUPFER, Medieval World Maps. Embedded Images, Interpretive Frames, in: Word & Image 10/3 (1994), pp. 262–288, here p. 265; EDSON, Mapping (note 7), p. 5.

66 ARENTZEN (note 22), pp. 232–236. On the relation between painted initials and diagrams, see Patrizia CARMASSI, Übergänge. Ornamente und Diagramme zwischen Text, Buchstabe und Bild in Handschriften des Frühmittelalters, in: Das Mittelalter 22/2 (2017), pp. 408–430; Kathrin MÜLLER, Formen des Anfangs. Sphärendiagramme aus dem 13. Jahrhundert, in: Horst BREDEKAMP/ Angela FISCHEL (eds.), Diagramme und bildtextile Ordnungen (Bildwelten des Wissens 3,1), Berlin 2005, pp. 85–96.

67 See Rudolf SUNTRUP, Te igitur-Initialen und Kanonbilder in mittelalterlichen Sakramentarhandschriften, in: MEIER-STAUBACH/ RUBERG (note 22), pp. 278–366, here pp. 278–281. An early example is the so-called Sacramentary of Gellone, dating ca. 780, Paris, Bibliothèque nationale de France, Ms lat. 12048, fol. 143v (Meaux or Cambrai ?).

68 See, for example, a manuscript of Gregories *Homiliae in Hiezechielem:* Munich, Bayerische Staatbibliothek, Clm 9511, fol. 24v. (mid-12th c.), or the sacramentary of bishop Abraham of Freising: Munich, Bayerische Staatbibliothek, Clm 6421, fol. 33v (ca. 984–994, Freising).

69 ARENTZEN (note 22), pp. 232–236. Patrizia LICINI hinted to the VD-monograms as a possible parallel to T-O-diagrams: Graphic combinations of the first words of the hymn (*vere dignum et iustum est*)

(later) Christian interpretation of the T-O diagram is a depiction that dates from the thirteenth century and can be found in a copy of Isidore of Seville's encyclopaedia, marking the beginning of the chapter on the earth (fig. 3).[70] Here the T (for *Terra*) is elaborately embellished: a figure stands before a construction, holding with raised arms a circle with an inserted T in which the names of the three continents are inscribed. The figure seems to represent Christ carrying the world.[71] Next to the depiction, an inscription states that "he bears this whole world with [his] stretched out body."[72] The T-initial highlights the close connection between a human figure with outstretched arms (or crucified) and the T-O model – a composition also found in other cartographic depictions, such as the Ebstorf world map or the Psalter-map (and its reverse image of a T-O diagram).[73]

Whereas these famous examples also date to the thirteenth century, there may be an early forerunner of this tradition. During excavations of a Slavic hill fort in Spandau (near Berlin) in 1982, archaeologists found a small clay mould, close to an aisleless church dating from the 980s. The cast from the mould, the so-called 'cross of Spandau', reveals a stylised crucified figure framed by a circle with a diameter of 2,6 cm (fig. 4).[74] The dating of the object is rather difficult and varies between the tenth and eleventh century,[75] and the cast which was presumably used as a Christian

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within the *Exsultet*, a proclamation sung during Easter Vigil, can be found in so-called Exsultet-rolls that were common in southern Italy between the tenth and thirteenth centuries, see Patrizia Licini, A Multilayered Journey. From Manuscript Initial Letters to Encyclopaedic Mappaemundi through the Benedictine Semiotic Tradition, in: Paul D. A. Harvey (ed.), The Hereford World Map. Medieval World Maps and their Context, London 2006, pp. 269–292.

70 Florence, Biblioteca Medicea Laurenziana, Conv. Soppr. 319, fol. 90v.

71 Arentzen (note 22), pp. 235–236. Quite in contrast, Ingrid Baumgärtner, Die Welt in Karten. Umbrüche und Kontinuitäten im Mittelalter, in: Das Mittelalter 22/1 (2017), pp. 55–74, here 65, interprets the figure as a personification of the world (*terra*).

72 Florence, Biblioteca Medicea Laurenziana, Conv. Soppr. 319, fol. 90v: *Baiulat h[ic] mu[n]dum extento corpore totu[m]*.

73 For the Psalter-map, se fig. 1 of the introduction of this volume. The Ebstorf world map dates from ca. 1300 and was destroyed in 1943. However, photographic documentation and several reproductions survive to this day. The Psalter-map and its reverse today are in London, British Library, Add 28681, fol. 9r and 9v. Traditionally, they are dated to ca. 1260, but LaureLee Brott and Heather Gaile Wacha recently showed that the map was glued into a cut out frame of an existing parchment page, which opens up the question of datation, see LaureLee Brott/ Heather Gaile Wacha, Reframing the World: The Materiality of Two Mappaemundi in BL, Add. MS 28681, in: Imago Mundi 72/2 (2020), pp. 148–162.

74 Adriaan von Müller, Das Spandauer Kreuz, in: Alfons Kluck/ Burkard Sauermost (eds.), 75 Jahre Bistum Berlin. Glaube für die Zukunft, Spuren der Geschichte, Konturen des Lebens, Berlin 2005, p. 176.

75 von Müller (note 74), dates the cross to the tenth century. The Museum für Vor- und Frühgeschichte in Berlin, where the cast is preserved today, dates it to the second half of the eleventh century.

Fig. 3: An illuminated T-initial from a thirteenth-century 'Etymologiae' manuscript (Florence, Biblioteca Medicea Laurenziana, Conv Soppr. 319, fol. 90v)

Fig. 4: The 'cross of Spandau' (Berlin, Staatliche Museen zu Berlin, Museum für Vor- und Früh-geschichte, DP 11329 (Photo Claudia Plamp))

pendant, may have adopted earlier (non-Christian) traditions.[76] But with its striking design, the 'cross of Spandau' bears a close resemblance to T-O diagrams, though we cannot know for sure if such a link was intended or made by contemporaries.

Another textual source picks up the same visual impression and reads as a precursor to this tradition of merging circular forms and crucified or circle-holding figures. The text dates to the ninth century and explains and interprets the letter of the Latin alphabet. The anonymous author chose to put the letter T in a cosmological context and wrote that "Christ pulls the whole world to himself with stretched arms."[77] Not only is the T here associated with Christ stretching out his arms, the sur-

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76 One could think of so-called wheel pendants dating back to the Bronze Age, see VON MÜLLER (note 74).

77 Auctores anonymi de litteris, in: Anecdota Helvetica, ed. Hermann HAGEN (Grammatici Latini, Supplementum), Leipzig 1870, pp. 302–308, here p. 306: *T. Extensio brachiorum Christi totum ad se colligit orbem ipso dicente: "cum exaltatus fuero a terra, omnia traham ad me ipsum"* [Joh. 12, 32], *ortatu, quo dicit: "venite ad me omnes qui laboratis et onerati estis et ego vos reficiam"* [Matth. 11, 28].

rounding world is joined to this imaginative picture and shows how widespread this visual representation was by the ninth century.

To sum up: The evidence presented cannot prove that the T in the T-O diagram was *intended* to symbolize a Christian cross. Additional textual evidence, however, suggests that the Greek letter *tau* was *understood* as a symbol of the cross already by the seventh or eighth century, if not earlier. The cross of Spandau, dating to the tenth/eleventh century is the first material hint indicating that the form of the T-O diagram could well be interpreted as an allusion to the figure of Christ encompassing the world. Illuminated T-initials from the eighth century onwards further support this hypothesis, and from this point, contemporaries closely associated the Latin letter T, the *tau* cross and the figure of Christ crucified (or holding the earth) and interpreted these forms as related.

Item #3: The Three Sons of Noah

The religious background of the T-O diagram is commonly argued by virtue of the association of the three continents with the three sons of Noah.[78] According to the bible, Noah's sons became the progenitors of humankind after the deluge (Gen 9 – 10). However, the close connection drawn between the three sons and the continents is not biblical. The book of Genesis only assigns a set of peoples as the descendants to each son, not a clearly bound region, let alone a continent. It was only later that Jewish and Christian commentators linked the three sons and the three continents and thus established a simple and memorable solution: The eldest son Sem was assigned to the biggest part, Asia; Japheth got Europe; and Cham Africa. Again, the chronology of the development is of primary importance.[79]

The first isolated textual examples for a link between both triads emerged in the sixth century and became more common in the eighth century. The connection between the concepts was, however, far from unanimously accepted, as Klaus OSCHEMA has shown.[80] Many medieval authors still attempted to find more accurate descriptions. Isidore, for example, seemed to be torn between both solutions: In his 'Etymologies', he tried to be accurate and to describe the settlement areas in detail;

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78 WOODWARD (note 18), p. 328; GARIPZANOV (note 5), p. 16; EDSON, Mapping (note 7), p. 15; Johannes GIESSAUF, Historische Wissensspeicher: Erinnerte Geschichte(n), in: Wernfried HOFMEISTER (ed.), Mittelalterliche Wissensspeicher. Interdisziplinäre Studien zur Verbreitung ausgewählten 'Orientierungswissens' im Spannungsfeld von Gelehrsamkeit und Illiteratheit (Mediävistik zwischen Forschung, Lehre und Öffentlichkeit 3), Frankfurt/Main et al. 2009, pp. 61– 86, here p. 62.
79 Eva WAJNTRAUB/ Gimpel WAJNTRAUB, Noah and his family on medieval maps, in: HARVEY (note 69), pp. 381– 388; WENZEL (note 52).
80 OSCHEMA (note 20), pp. 112– 117 und 336– 344, here pp. 115– 116.

in his 'History of the Goths', by contrast, he used the simple equation between the three sons and the three parts of the world.[81]

On a graphic level, the first T-O diagrams that include the names of the sons of Noah as inscriptions, again in manuscripts of Isidore's works, date from the ninth century.[82] It is noteworthy that the accompanying text does not indicate this link – Isidore mentions the sons of Noah only in a different chapter.[83] The inclusion of the sons of Noah in the diagram is obviously a later addition, probably from the ninth century, although its intellectual roots can already be traced back to exegetical texts from the sixth and seventh centuries. [84]

By including the names of the three sons, the scribes or copyists transcended the content of Isidore's text. VAN DUZER and SÁENZ-LÓPEZ PÉREZ argue that the names of Noah's sons might have been added to the diagram because readers or scribes perceived them as missing.[85] In this case, the connection between both concepts must have been already quite strong. Indeed, we can trace the quest for a fitting graphic representation of the settlement areas to the early ninth century.

In some manuscripts, we find another, competing graphic solution for this desideratum: the so-called V-in-□ diagram (fig. 5). This slightly odd name was modelled after the designation of the T-O scheme, as the graphic in question consists of a rectangle with an inscribed V-like form. For the sake of simplicity, I will refer to it as V-diagram. The diagram enjoyed very little close analysis until 2012, when Chet VAN

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81 Isidore of Seville, Etymologiae (note 41), IX.2.37: *Haec sunt gentes de stirpe Iaphet, quae a Tauro monte ad aquilonem mediam partem Asiae et omnem Europam usque ad Oceanum Brittanicum possident, nomina et locis et gentibus relinquentes; de quibus postea inmutata sunt plurima, cetera permanent ut fuerunt.* Isidore of Seville, Historia Gothorum, Vandalorum, Suevorum, in: Chronica minora. Saec. IV. V. VI. VII., 3 vol., ed. Theodor MOMMSEN (Monumenta Germaniae Historica Auct. Ant. 9, 11, 13), Berlin 1892–1898, vol. 2, pp. 241–390, here p. 304 (Dedication, Add I): *tres filios Noe, id est Sem, Cham et Iapheth scriptura sacra esse testatur: ab ipsis quippe omnium hominum genus per tripertitam mundi regionem, id est Asiam Europam et Africam, est disseminatum. filii Sem orientalem partem, scilicet Asiam, cum filiis Ioniti filii Noe, qui post diluvium natus est, possederunt: filii Iaphet septentrionalem, scilicet Europam, filii Cham meridionalem, id est Libyam sive Africam, inhabitaverunt, sed tempore procedente terram Chanaan in Asia violenter obtinuerunt.*

82 To cite just some examples: Escorial, Biblioteca Real, Cod. P.I.7, fol. 222v (between 792–842); London, British Library, Harley MS 3941, fol. 177r (2nd half 9th c.; the diagram may be a later addition); Zofingen, Stadtbibliothek, Pa 32, fol. 210v (2nd half 9th c.); Vatican City, Biblioteca Apostolica Vaticana, Pal. lat. 834, fol. 90v (2nd half 9th c.). In Escorial, Real Biblioteca R.II.18, fol. 25r (8th c.), the names of the sons of Noah were added to the diagram (date unclear). Rouen, Bibliothèque municipale, MS 524, fol. 74v (earlier than 811) has a T-O diagram next to a V-diagram. On this see Chet VAN DUZER, A Neglected Type of Medieval *mappamundi* and its re-imagining in the *mare historiarum* (BnF MS lat. 4915, fol. 26v), in: Viator 43 (2012), pp. 277–302. See also note 48 and 49.

83 See Isidore of Seville, Etymologiae (note 41), IX.2.9, 25 and 37 (see note 81 and 89).

84 See note 80.

85 Chet VAN DUZER/ Sandra SÁENZ-LÓPEZ PÉREZ, *Tres filii Noe diviserunt orbem post diluvium*. The World Map in British Library Add. MS 37049, in: World and image 26 (2010), pp. 21–39, here pp. 32–33.
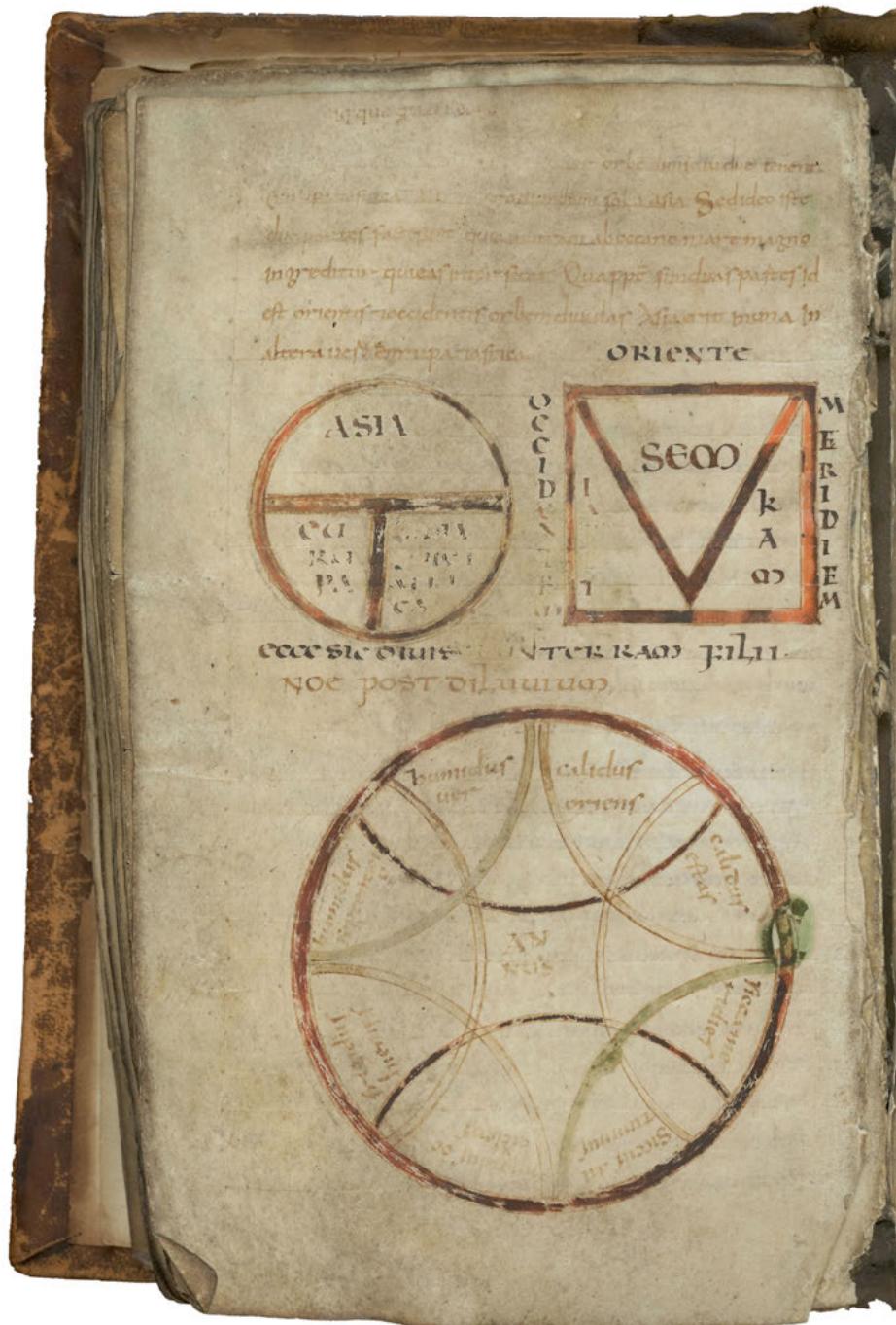
Fig. 5: A V-diagram next to a T-O diagram (dated before 811) (Rouen, Bibliothèque municipal, MS 524, fol. 74v)

Duzer published an article on the type.[86] In most cases, the V-diagram appears right next to a classical T-O diagram, usually in manuscripts of Isidore's 'Etymologies'.[87] The combination of both diagrams indicates that the V-diagram was intended as a supplement to the older T-O diagrams. The first known example of this combination dates to before 811 (fig. 5).[88] Obviously, scribes or copyists found it necessary or desirable to map the areas of settlement and struggled to find an adequate solution. In contrast to the T-O diagram, the V-diagram highlights that the Noachide's areas of settlement were *not* congruent with the continents. Indeed, the text of the 'Etymologies' lists the peoples descending from the three sons in great detail and then sums up that the descendants of Sem occupied the southern region, from the upmost east to the Levant; the people of Cham lived in the region from Sidon (Lebanon) to Gibraltar; and finally that the progeny of Japheth inhabited the land between the Taurus Mountains (in modern day Turkey) and the northern part of Asia, as well as the whole of Europe.[89]

The V-diagram is the result of an effort to precisely map this geographical information. However, the coalescence of the four cardinal directions and the three parts of the world did not work out evenly. Since the fifth century, Europe was commonly associated with the west,[90] thus, the names of the cardinal directions in the V-diagram had to be re-ordered: East is on top, as in the T-O diagram; to the right follows the south; and to the left, the north is replaced by the west (see fig. 5). What van

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86 Van Duzer (note 82), p. 278. The diagram is shortly mentioned by Giessauf (note 78), p. 62; Woodward (note 18), p. 347; Michael C. Andrews, The Study and Classification of Medieval Mappae Mundi, in: Archaeologia 75 (1926), pp. 61–76, here p. 70.

87 Van Duzer (note 82), pp. 280–281, fn. 14, lists three V-diagrams that are neither drawn into manuscripts of the 'Etymologies' nor next to T-O diagrams.

88 Rouen, Bibliothèque municipale, MS 524, fol. 74v (earlier than 811).

89 Isidore of Seville, Etymologiae (note 41), IX.2.9, 25 and 37: *Haec sunt gentes de Sem stirpe descendunt, possidentes terram meridianam ab ortu solis usque ad Phoenices.* [...] *Haec sunt gentes de stirpe Cham, quae a Sidone usque ad Gaditanum fretum omnem meridianam partem tenent.* [...] *Haec sunt gentes de stirpe Iaphet, quae a Tauro monte ad aquilonem mediam partem Asiae et omnem Europam usque ad Oceanum Brittanicum possident.* See van Duzer (note 82), p. 282, shortly refers to this passage but focusses more on Isidore of Seville, Etymologiae (note 41), XIV.2.2. This passage, however, cannot explain the design of the V-diagram sufficiently, as Van Duzer (note 82), pp. 280–281, himself states.

90 See for example the fifth-century Liber generationis, in: Chronica minora (note 81), vol. 1, pp. 78–140, here p. 112: *Filiorum igitur trium Noe tripartitum saeculum divisum et quidem Sem primogenitus accepit orientem, Cham autem mediterraneam, Iafet occidentem.* Similar also Sulpice Sévère, Chroniques. Introduction, texte critique, traduction et commentaire, ed. Ghislaine Senneville-Grave (Sources chrétiennes 441), Paris 1999, p. 98 (I.3.3). The fifth-century bishop of Lyon, Eucherius, included even the names of the continents, Eucherius of Lyon, Instructiones, in: Eucherii Lugdunensis opera 1, ed. Carmelo Mandolfo (Corpus Christianorum, Series Latina 66), Turnhout 2004, pp. 77–216, here p. 87 (I.19): *Notandum uero est tres Noe filios tres post diluuium terrae partes occupasse, Sem namque posteritas in Asiam uel Orientem, Cham in Africam uel Meridiem, Iafeth cum parte Asiae in Europam se Occidentemque porrexit.* See Oschema (note 20), p. 114.

Duzer calls "a strange error"[91] is proof of the diagrammatic flexibility and pragmatism of medieval scribes for whom a close link to the text was more important than the rigorous naming of the cardinal directions. The complex solution of the V-diagram, however, was misunderstood by readers and scribes in the twelfth century, who changed the names of the cardinal directions to the seemingly 'correct' order.[92]

Directly below the first known V-diagram (fig. 5), an inscription explains the relation to the neighbouring T-O-diagram and invites the reader to "see how the earth was divided among the sons of Noah after the deluge."[93] This explanatory legend was copied into many other manuscripts of the 'Etymologies' showing a T-O-Noachide diagram.[94] It suggests that the division of the earth among Sem, Japheth, and Cham seemed (at least in some cases) to be more important than the threefold division of the earth.

The T-O-Noachide diagram – that is, the simple equation of the three parts of the earth and the three sons of Noah – was, however, an easier and more memorable solution to the problem of depicting the settlement areas of the Noachides; it became far more popular and widespread than the V-diagram.[95] The connection between the T-O-Noachide diagram and the work of Isidore of Seville remained closely linked up to the fifteenth century,[96] even if the inclusion of the three sons did not become the norm for T-O diagrams in general (the majority of the diagrams do not include their names). Nevertheless, the inclusion of the sons of Noah into the diagram was one of the most influential Christian framings of the diagram, and it can be clearly traced from the ninth to the fifteenth century.

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91 Van Duzer (note 82), pp. 293 and pp. 278–279. Marcia Kupfer, The Noachide Dispersion in English Mappae Mundi, c. 960 – c. 1130, in: Peregrinations 4/1 (2013), pp. 81–106, here pp. 89–90, fn. 14, states that the design is not a mistake, but that an explanation for this arrangement is missing.
92 See for example Vatican City, Biblioteca Apostolica Vaticana, Reg. lat. 239, fol. 76v (12th c.); Lyon, Bibliothèque municipale, Ms 125, fol. 106v (15th c.). Van Duzer (note 82), p. 281, writes that these 'corrected' diagrams would correspond to Isidore's text (chap. XIV.2.). This, however, does not explain why the majority of the V-diagrams show the divergent way of ordering.
93 Rouen, Bibliothèque municipale, MS 524, fol. 74v: *Ecce sic diuiserunt terram filli noe post diluuium*. Many other V-diagrams have this legend as well: Amiens, Bibliothèque municipale, Ms 221, fol. 134v (12th c.); Douai, Bibliothèque municipale, Ms 318, fol. 112v (3rd quarter 12th c.); Douai, Bibliothèque municipale, Ms 320, fol. 109r (Mid-12th c.); Florence, Biblioteca Medicea Laurenziana, Acq. e doni 80, fol. 189r (14th c.); Munich, Bayerische Staatsbibliothek, Clm 14334, fol. 177r (1442, Regensburg).
94 See for example St. Gall, Stiftsbibliothek, Cod. Sang. 236, fol. 89r (2nd half 9th c.); Paris, Bibliothèque nationale de France, Ms lat. 10293, fol. 139r (11th c.); Auxerre, Bibliothèque municipale, Ms 76, fol. 91v (12th c.); Melun, Bibliothèque municipale, Ms 46, fol. 125r (12th c.). The manuscript Vatican City, Biblioteca Apostolica Vaticana, Vat. lat. 1058, fol. 107r (13th c.) even has the legend, although the names of the Noachides are not inscribed into the diagram.
95 Van Duzer (note 82), p. 279 lists 35 surviving examples.
96 See van Duzer/ Sandra Sáenz-López Pérez (note 85), pp. 32–33.

Final Plea

The T-O diagram depicted the three parts of the known world in a memorable and easily replicable way. It was the most successful (i.e. the most frequently drawn) representation of the medieval world. The origin of the diagram is however still unclear and the subject of continued debate: Some scholars assert that its origins lie in non-Christian, antique traditions, while others argue for its formation within a Christian context. Indeed, the oldest surviving copy is from the seventh or eighth century and the diagram was closely linked to the works of Isidore, bishop of Seville, from its very beginnings. The debate around its origin is therefore directly connected to the question of whether or not the diagram can be interpreted as a Christian sign of the world. This paper has focussed mainly on two questions: first, whether or not the T-O diagram was intended to be a Christian sign; and second – supposing this not to be the case – how far back the diagram can be traceably interpreted as a religious image of the world.

I would argue that the T-O diagram was a genuinely Christian image of the world: the orientation to the east as well as the continents' fixed size ratio of 2:1:1 are features that can be better explained within the context of Christianity rather than non-Christian antiquity. On the one hand, the orientation of the diagram mirrors the importance of the east in early Christian thought and theology. On the other hand, the idea that Asia is twice as big as Africa and Europe is a notion that was famously suggested by Augustine and adopted by many other authors, such as Orosius und Isidore, thereby establishing what would become a widespread medieval tradition. Regarding the T-shaped division of the diagram, it is possible that the form was intended to symbolise a *tau*-cross which had been known and used as a Christian sign since late antiquity.

This hypothesis is based on circumstantial evidence and cannot be proven beyond doubt. What the sources have shown quite clearly is that from the eighth and ninth centuries onwards, the T-O diagram was designed, framed, and understood on different levels as a Christian sign of the world. The top of the diagram (i.e. east) was marked with small crosses, accentuating the religious importance of the east as well as the location of the Christian Paradise. Furthermore, texts and images highlighted that the connection between the form of the letter T and the *tau*-cross was widely known and interpreted as a symbol for the crucified Christ. The T-O form fits quite well into this pattern. Another early Christian addition to the diagram was the inclusion of the names of the three sons of Noah, which shifted the meaning of the diagram from a geographic to a religious level. With this addition, the diagram depicted how the three continents were increasingly linked to areas believed to be settled by the sons of Noah and thus closely more connected the idea of the continents to a biblical passage.

The examples analysed in this paper reveal how the T-O diagram translated geographic and religious ideas into graphic form. The diagrammatic character of this

form made it easy to add further content and thus potentially to alter the meaning of the sign. In the case of the T-O diagram, I would argue that the evidence presented here revealed the original Christian design of the diagram by highlighting several individual features. It is nonetheless surprising that there seems to be no textual source that allows us to make this connection directly. Indeed, one of the rare textual descriptions of the T-O diagram from medieval times can be found in a geographic educational poem dating to the early fifteenth century. The poem is as stripped-down to its essentials as the diagram itself: "A T within an O shows us the image of how the world was divided into three parts."[97]

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97 La Sfera. Libri quattro on ottava rima, scritti nel secolo XIV da F. Leonardo di Stagio Dati, aggiuntovi due altri libri (La Nuova Sfera di F. M. Tolosani da colle; L'america di Raffaello Gualterotti), ed. L'america di Raffaello Gualterotti), ed. Gustavo Camillo GALLETTI (Biblioteca rara), Milan 1865, p. 30 (III.11): *Un T dentro ad un O mostra il desgeno / Come in tre parti fu diviso il Mondo.*