

## Calculating the Synod?

### A network analysis of the synod and the episcopacy in the Register of the Patriarchate of Constantinople in the years 1379–1390

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The Register of the Patriarchate of Constantinople is for us probably the most important source for the practice of management and leadership of the late Byzantine church; it provides us with a large number of decisions of the patriarch and the synod of the metropolitans, archbishops and bishops who were present in the capital on many aspects of the church, but also of the political, economic and social life of the Byzantine Empire and the entire Orthodox Commonwealth. These decisions of the supreme bodies of the church are connected in the documents with more or less detailed justifications, which often draw from the rich treasure of Byzantine rhetorics; that many unpleasant facts were either not presented or in disguised form, Herbert Hunger made clear in his paper on the "the apparent nonchalance of the language of the patriarchal chancellery" in the second volume of the studies on the Register of the Patriarchate.<sup>1</sup>

With regard to the decision-making of the Patriarch and the Synod for instance, we learn mostly only which "archpriests and hypertimoi, in the Holy Spirit beloved brothers and co-priests of our modesty" gathered around the Patriarch<sup>2</sup>, in order to achieve a consensus decision in the sign of brotherly unity. At least this ideal is often invoked in the Register of

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<sup>1</sup> H. HUNGER, Zur scheinbaren Nonchalance der Kanzleisprache des Patriarchatsregisters. Verschleierung, Absicherung und Ironie in Urkunden des Patriarchats von Konstantinopel, in: H. HUNGER – O. KRESTEN (Hrsg.), *Studien zum Patriarchatsregister von Konstantinopel II (Österreichische Akademie der Wissenschaften, philosophisch-historische Klasse, Sitzungsberichte, 647. Band)*. Wien 1997, 11–43.

<sup>2</sup> Cf. for instance MM II, 77 (Nr. 374); DARROUZÈS, Reg. 2819: Ὁ ἱερώτατος μητροπολίτης Σερρών καὶ ὑπέρτιμος, ἐν ἀγίῳ πνεύματι ἀγαπητὸς ἀδελφὸς τῆς ἡμῶν μετριότητος καὶ συλλειτουργὸς, συνεδριάζων τῇ ἡμῶν μετριότητι, προκαθημένη συνοδικῶς, συνεδριαζόντων αὐτῇ καὶ ἄλλων ἀρχιερέων καὶ ὑπερτίμων ...

the Patriarchate, even more so since the hierarchy of the church claimed to reflect the heavenly order. This also applies to the documents from the Patriarchate of Neilos Kerameus (March/April 1380–February 1388), which constitute the bulk of the documents that were re-examined for the fifth volume of the edition.<sup>3</sup> A tabulary summary of all 28 synodal sessions recorded in the period from September 1379 to November 1387 yields 45 metropolitans, archbishops and bishops, who attended at least one synodal sessions (see tables 1 and 2); the number of participants in the different sessions varies between 4 and 12 (see fig. 1; en passant: the twelve represented the canonically required minimum number for the deposition of a bishop). If we consider that the *Notitiae episcopatum* at that time still listed about 150 metropolitan sees and archbishoprics in the dioceses of the Patriarchate, and although many churches in *partibus infidelium* probably did not have a bishop, it is clear that only a relatively small number of hierarchs was involved in the decision-making.<sup>4</sup>

But can we assume that even this group of up to a dozen pastors always decided in unanimity? Even the earliest councils of the Church laid down rules for the case that this ideal state was not reached in church meetings; the Canon nr 6 of the Nicaenum I explained with regard to the election of bishops, among other things<sup>5</sup>: “If, however, two or three bishops shall from natural love of contradiction, oppose the common suffrage of the rest, it being reasonable and in accordance with the ecclesiastical law, then let the choice of the majority prevail”<sup>6</sup> A similar wording regarding the election of bishops is found in Canon nr 19 of the Synod of Antioch.<sup>7</sup> Both canons consider the majority decision primarily a mean to prevent the blockade of decision-making by the contentiousness of a minority, not a sign of a “democratic” constitution of the synod. A similar view is expressed also by Zonaras in his commentary on the sixth canon of the Nicaenum I.<sup>8</sup> More “technically” Theodoros Balsamon commented on the canon of the Synod of Antioch: καὶ ὅτι, τῶν ψηφιζομένων

<sup>3</sup> These are the documents MM II, 1–111 (Nr. 332–399); PRK V, Nr. 426–515; DARROUZÈS, Reg. 2696–2829.

<sup>4</sup> Cf. the tables in J. DARROUZÈS, *Le registre synodal du patriarcat byzantin au XIVe siècle. Étude paléographique et diplomatique (Archives de l’Orient chrétien 12)*. Paris 1971, 344–388; the lists of episcopal sees are edited in J. DARROUZÈS, *Notitiae episcopatum ecclesiae Constantinopolitanae*. Paris 1981.

<sup>5</sup> Cf. also N. MILAŠ, *Das Kirchenrecht der morgenländischen Kirche. Nach den allgemeinen Kirchenrechtsquellen und nach den in den autokephalen Kirchen geltenden Spezial-Gesetzen*. Mostar<sup>2</sup>1905, 357–358.

<sup>6</sup> *COGD* I, 23, 135–157, esp. 153–157: Ἐὰν μὲντοι τῇ κοινῇ πάντων ψήφῳ, εὐλόγῳ οὕσῃ καὶ κατὰ κανόνα ἐκκλησιαστικόν, δύο ἢ τρεῖς δι’ οἰκειαν φιλονεικίαν ἀντιλέγῳσι, κρατεῖτω ἡ τῶν πλειόνων ψήφος.

<sup>7</sup> JOANNOU I/2, 119, 1–25, esp. 24–25: Εἰ δὲ κατὰ τὸν ὠρισμένον κανόνα γίνοιτο ἡ κατάστασις, ἀντιλέγοιεν δὲ τινες δι’ οἰκειαν φιλονεικίαν, κρατεῖν τὴν τῶν πλειόνων ψήφον.

<sup>8</sup> G. A. RALLES – M. POTLES, *Σύνταγμα τῶν θείων καὶ ἱερῶν κανόνων*. Athen 1852–1859, II, 128–129.

μεριζομένων εἰς διαφόρους γνώμας, ἢ τῶν πλειόνων ψήφος νικᾷ.<sup>9</sup> And also Metropolitan Symeon of Thessalonica stated in his work on the Holy Orders at the beginning of the 15<sup>th</sup> Century that according to the canones ἢ τῶν πλειόνων ψήφος prevailed if the synod could not agree on one candidate for a bishopric.<sup>10</sup>

The Synod therefore could use these canons when it did not come to a decision by unanimity, and two examples of the practical application of this regulation are found in the documents from the Patriarchate of Neilos Kerameus: In June 1380, the Synod was chaired by the only recently elected Patriarch Neilos Kerameus, when a difficult case occurred, which shook the important Russian Church, which was always affected by political disputes. After the death of the Metropolitan Aleksej of Kiev the Grand Duke Dmitrij of Moscow sent a candidate for the vacant throne to Constantinople. But in 1375 (still under Philotheos Kokkinos) at the request of the Lithuanian Grand Duke Olgerd the Patriarch's legate Kyprianos had been appointed Metropolitan of a part of the Russian diocese and it had been promised to him that he would take over the entire Russian church after the death of Aleksej. The synod which was assembled around Neilos Kerameus wanted to annul this earlier decision and to elect the candidate of Moscow.<sup>11</sup> In this delicate situation, the hierarchs sought also the approval of one of the most prominent members of the synod in the two preceding dec-

<sup>9</sup> RALLES – POTLES, Σύνταγμα II, 129–130 (the comment of Theodoros Balsamon) u. III, 161–162 (on canon nr. 19 of Antiocheia); Theodoros Balsamon also mentions a new law issued by Emperor Manuel I Komnenos in March 1166, which prescribed that in court sessions that opinion should prevail which the chairman of the court followed if there occurred a tie or a disagreement. Some wanted now to apply this new rule also in church meetings, but met with resistance - even Balsamon himself considered it to be in conflict with the Canons.; on this law of Manuel I Komnenos cf. DÖLGER, Reg. 1465 (ed. ZEPOS I, col. IV, n. 66); R. MACRIDES, Justice under Manuel I Komnenos: Four Novels on Court Business and Murder, in: D. SIMON (ed.), *Fontes Minores VI (Forschungen zur byzantinischen Rechtsgeschichte 11)*. Frankfurt am Main 1984, 99–204, esp. 126, 69–72 (Greek text) and 175. On Balsamon's opinion on the relation between imperial legislation and Canon law see S. N. TROIANOS, Nomos und Kanon in Byzanz, in: IDEM., *Historia et Ius II* (1989–2004). Athens 2004, 217–219.

<sup>10</sup> Symeon of Thessalonike, *De sacris ordinationibus*, in: *PG* 155, 404 A.

<sup>11</sup> Cf. D. OBOLENSKY, *The Byzantine Commonwealth. Eastern Europe 500–1453*. London 2000 (originally 1971), 260–264 (also on the sources on Russian as well as Lithuanian bribe money which influenced synodal and imperial decision-making in Constantinople); J. MEYENDORFF, *Byzantium and the Rise of Russia. A Study of Byzantino-Russian Relations in the Fourteenth Century*. New York 1989; F. TINNEFELD, Byzantinisch-russische Kirchenpolitik im 14. Jahrhundert. *BZ* 67 (1974) 359–384; D. OBOLENSKY, *A Philorhomaioi Anthropos: Metropolitan Cyprian of Kiev and all Russia (1375–1406)*. *DOP* 32 (1978) 79–98; M. SALAMON, Cyprian (Kyprianos, Kiprian) the Metropolitan of Kiev and Byzantine Policy in East Central Europe, in: G. PRINZING – M. SALAMON, with the assistance of P. STEPHENSON (eds.), *Byzantium and East Central Europe (Byzantina et Slavica Cracoviensia 3)*. Cracow 2001, 221–236 (with further literature); J. PREISER-KAPPELLER, „Konfessionswechsel“ als Drohung. Beobachtungen zum Aufstieg des Kyprianos zum Metropoliten von Kiev und Litauen (1375) im Kontext der Politik des Patriarchats von Konstantinopel an Kontaktzonen zur Westkirche im 13. und 14. Jahrhundert, in: Ch. GASTGEBER – I.-A. POP – O. J. SCHMITT – A. SIMON (eds.), *Worlds in Change: Church Union and Crusading in the Fourteenth and Fifteenth Centuries (Transylvanian Review, Vol. XVIII, suppl. No. 2)*. Cluj-Napoca 2009, 253–277.

ades, the Metropolitan Theophanes of Nikaia, who was absent for health reasons. Several times delegations consisting of Metropolitans and ecclesiastics were sent to Theophanes, but he rejected the proposal to annul the former regulation for Kyprianos which he considered to be correct. But finally he gave in and we read his statement in the document in the Register; he said: "I do not isolate (...) myself from the Synod, but because the canons state that the decision of the majority prevails, may the (the regulation) of the canon be valid; but with regard to the earlier synodal decision (...) I consider it to be canonical. But because the archpriests who have created it with me all together decide that it was illegal and not in compliance with the canons, I as well do not contradict."<sup>12</sup> For Theophanes of Nicaea the canons on the majority decision made it possible to accept this decision of the synod, even without a proper ballot – since Theophanes himself never came to the synod, and after his statement "nobody disagreed", so that there was no formal count of votes.<sup>13</sup>

Unlike Theophanes of Nicaea Metropolitan Makarios of Sebasteia responded to a voting defeat: in 1375/1376 the Synod came together under Patriarch Philotheos Kokkinos to elect a new metropolitan for the city of Serrhai in Macedonia; as the then elected Matthaios Phakrases informs us in a document from the time of Neilos Kerameus, this choice was opposed by Makarios, at that time Metropolitan of Sebasteia, along with two other metropolitans. The decision of the majority prevailed and Matthaios Phakrases was elected, although Makarios further opposed.<sup>14</sup> The number of those who contradicted the majority (three) was not so small if we look at the above mentioned figures for the average number of participants (see fig. 1). But again the regulations on the decision of the majority were pivotal. It was only when Makarios succeeded to the patriarchal throne in June 1377 as a favorite of Andronikos IV Palaiologos (after his coup) that he got the opportunity to annul this deci-

<sup>12</sup> MM II, 16–17 (Nr. 337); PRK V, Nr. 432; DARROUZÈS, Reg. 2705 (statement of Theophanes of Nikaia): "ὁ δὲ ἀβίαστόν τι τὴν γνώμην", εἶπεν, "εἶναι νομίζω, διὰ τοῦτο καὶ περὶ μὲν τοῦ προκειμένου προσώπου οὐ βούλομαι δοῦναι γνώμην δι' αἰτίας τινὰς ἐμοὶ δοκούσας εὐλόγους, οὐ μὴν δὲ καὶ ἀποσχίζομαι τῆς συνόδου, ἀλλὰ τῶν κανόνων λεγόντων, τὴν τῶν πλείωνων ψῆφον νικᾶν, γενέσθω τὸ τοῦ κανόνος, περὶ δὲ τῆς συνοδικῆς πράξεως ἐγὼ μὲν, φησί, κανονικὴν αὐτὴν ἐνόμιζον καὶ νομίζω. ἐπειδὴ δὲ οἱ σὺν ἐμοὶ αὐτὴν πεπραχότες ἀρχιερεῖς ὁμοῦ πάντες ἄθεσμον αὐτὴν καὶ ἀκανόνιστον εἶναι ψηφίζονται, οὐδὲ αὐτὸς ἀντιλέγω".

<sup>13</sup> MM II, 17 (Nr. 337); PRK V, Nr. 432; DARROUZÈS, Reg. 2705: ταῦτ' ἄρα καὶ μηδενὸς ὄντος τοῦ ἀντιλέγοντος (...).

<sup>14</sup> MM II, 78 (Nr. 374); PRK V, Nr. 483; DARROUZÈS, Reg. 2819 (election of Matthaios Phakrases): Ἀναγνωσθέντων τοῖνυν, ἐρωτηθεὶς ὁ Σερρῶν ἀπεκρίνατο οὕτως· ὅτι „πρῶτον μὲν οὐδεὶς“, φησί, „ἀγνοεῖ, πῶς διέκειτο πρὸς ἐμὲ ὁ χρηματίσας πατριάρχης, ὅτε γὰρ ἐχειροτονήθη μητροπολίτης Σερρῶν ψήφῳ συνοδικῇ παρὰ τοῦ τρισμακαρίστου καὶ αἰοιδίμου καὶ ἀγιωτάτου πατριάρχου, κυροῦ Φιλοθέου, ἐκεῖνος μητροπολίτης ὢν Σεβαστείας, ἔχων καὶ ἄλλους δύο τῶν ἀρχιερέων συνεργούς, οὐκ ἠθέλησε δοῦναι γνώμην, καὶ ἐγὼ μὲν νικησάσης τῆς τῶν πλείωνων ψήφου κανονικῶς ἐχειροτονήθη, οἱ δὲ φιλονείκως ἀντιλέγοντες κατὰ τὸν κανόνα παρωράθησαν.“

sion by other means and to try to depose Matthaïos Phakrases as Metropolitan with false allegations.<sup>15</sup>

Given the possibility of such continuing discord among the hierarchs, the synod usually made an effort to achieve a consensus among its members not only because of the ideal of fraternal harmony.<sup>16</sup> But as already mentioned, the documents of the Register of the Patriarchate rarely grant insight into the deliberations and votes of the Synod, which preceded a decision. One of the most relevant documents in this regard was already edited in Volume III of the PRK with detailed comments; it is again a case of disagreement within the synod from the second Patriarchate of Kallistos I.<sup>17</sup> When the synod in 1361 disputed over the treatment of offenses against marriage law, the Synod decided to log the vote (the *gnome*) of each individual hierarch verbatim. If one follows this protocol, then the metropolitans gave their opinion successively in the hierarchical order of their seats, as it was found in the *Notitiae Episcopatum*, the most senior Metropolitan (in this case the one of Herakleia in Thrace) as the first. That this procedure is not the exception, but apparently the rule is confirmed in a document from May 1401, where it is described that "according to the habit" (*kata to ethos*) the Megas Chartophylax questioned the four metropolitans then present in the Synode – again in their hierarchical order; the statements of the hierarchs were also recorded in that order.<sup>18</sup> A parallel testimony also offers Symeon of Thessalonica, who describes that for the election of bishops the votes were registered according to the hierarchical rank of the participants (*kata taxin*) by the Chartophylax.<sup>19</sup>

This procedure of decision making could provide for the higher-ranking metropolitan probably also a certain influence on the opinion of the following hierarchs. In the above mentioned synodal session of the year 1361 for instance, the Metropolitan of Pontoherak-

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<sup>15</sup> MM II, 78 (Nr. 374); PRK V, Nr. 483; DARROUZÈS, Reg. 2819; PLP Nr. 29584; J. PREISER-KAPPELLER, *Der Episkopat im späten Byzanz. Ein Verzeichnis der Metropoliten und Bischöfe des Patriarchats von Konstantinopel in der Zeit von 1204 bis 1453*. Saarbrücken 2008, 405.

<sup>16</sup> On this "principle of consensus" in decision-making bodies in premodern times cf. E. FLAIG, *Das Konsensprinzip im Homerischen Olymp. Überlegungen zum göttlichen Entscheidungsprozeß Ilias 4.1–72*. *Hermes* 122/1 (1994) 13–31, and especially for the Late Byzantine synod J. PREISER-KAPPELLER, *Hē tōn pleionōn psēphos*. Der Mehrheitsbeschluß in der Synode von Konstantinopel in spätbyzantinischer Zeit, in: E. FLAIG (ed.), *Genesis und Dynamiken der Mehrheitsentscheidung (Schriften des Historischen Kollegs. Kolloquien 85)*. Munich 2011 (forthcoming)

<sup>17</sup> PRK III, 492–514 (Nr. 257) with comments, and esp. lns. 72–144 in the Greek text.

<sup>18</sup> MM II, 489–490 (Nr. 643); DARROUZÈS, Reg. 3207.

<sup>19</sup> Symeon of Thessalonike, *PG* 155, 401 D–404 A; cf. also MILAŠ, *Das Kirchenrecht der morgenländischen Kirche* 360–361.

leia concluded his statement with the words: "I agree in all respects fully with the view of the Lord (Metropolitan) of Heraclea (...)", who according to the *taxis* had taken on the word first.<sup>20</sup>

Overall, the question arises whether all the votes of "our in the Holy Spirit beloved brothers and co-priests" de facto possessed the same weight in the decision-making of the Synod. The answer must probably be "no". For why were Patriarch Neilos Kerameus and the other members of the synod induced to seek also the opinion of the absent Theophanes of Nicaea for the the termination of the previous decision for Kyprianos? Probably because Theophanes could be regarded as the "doyen" of the Synod, who had influenced its decisions since the time of Philotheos Kokkinos, who had ordained his disciple Theophanes as metropolitan shortly after his second enthronement. Theophanes was a close confidant of Philotheos Kokkinos; for instance, he arranged in 1368 to 1370 the agreement with the despot Ioan Mrnjavcević Uglješa of Serrhai in order to end the schism between Constantinople and a part of the Serbian Church. Hence he symbolised also the continuity of church leadership from the period of the Holy Patriarch Philotheos Kokkinos during the problematic years of the first term of the deposed Patriarch Makarios. That we find him awarded with the *topos* of Kaisareia since 1380 and therefore with the first rank among the hierarchs indicates further his prominent position in the synod.<sup>21</sup> Even more problematic was his opposition against the annulment of the synodal decision from the year 1375 because it was a decision that had been made under Philotheos Kokkinos, and not one of those decisions from the time of Makarios, which under Neilos Kerameus were terminated in greater number. This made the consent of Theophanes for the legitimisation of the new regulation so important. At the same time, several other participants in the Synod in June 1380 had been involved in the original decision-making of the year 1375; this continuity of the synod since the last years of Philotheos Kokkinos becomes also evident in the statement of Theophanes of Nicaea, when he observes: "But because the archpriests who have created it (=

<sup>20</sup> PRK III, 87–88 (Nr. 257) (p. 502): Ὁ Ποντοηρακλείας εἶπεν ὅτι· „στοιχῶ κατὰ πάντα ἐπὶ πᾶσι τούτοις τῇ γνώμῃ τοῦ δεσπότη τοῦ Ἡρακλείας„

<sup>21</sup> E. TRAPP, Die Metropoliten von Nikaia und Nikomedeia in der Palaiologenzeit. *OCP* 35 (1969) 186; I. D. POLEMIS, Theophanes of Nicaea: His Life and Works (*WBS* 20). Wien 1996, 25–30; A. RIGO, La missione di Teofane di Nicaea a Serre presso Giovanni Uglješa, in: *Opora. Studi in onore di Mons. Paul Canart per il suo 70 compleanno*, a cura di L. PERRIA – S. LUCA. Rom 1997, 120–126; J. PREISER-KAPPELLER, Das Patriarchat von Konstantinopel und das politische und religiöse Umfeld des 14. Jh.s im Spiegel ausgewählter Urkunden des Patriarchatsregisters von Konstantinopel. *Ostkirchliche Studien* 58/2 (2009) 231–232.

the former decision) with me all together decide that it was illegal and not in compliance with the canons, even I do not contradict."

A comparison of the recorded participants in the synod between 1379 und 1387 with the composition of the Synod in the last years of Philotheos Kokkinos confirms these findings in relation to a number of "prominent" members of the synod.<sup>22</sup> If we also take into consideration that the first two sessions in our sample took place in September 1379 prior to the election of Neilos in the time of the vacancy after the ousting of Makarios, then we have therefore probably also the Synod before us which had been operating under Makarios in the previous two years. Theophanes of Nicaea, Joseph of Heraclea or Sebasteianos of Ionnina (later Cyzicus) guaranteed synodal continuity under changing regimes and patriarchs until the first two years of Neilos Kerameus. But a glance at the table (see table 1) also makes evident the generation change which took place in the synod during the patriarchate of Neilos (from top left to bottom right on our table, as the participants are listed in the order in which they occurred for the first time in the synodal presence lists). And even within this new group we can again observe a certain continuity, from the Patriarchate of Neilos out into the first term of Antonios IV and especially in the second, short term of Makarios; so we find among those metropolitans who in August 1390 confirmed with their signatures the innocence of Makarios as he returned to the patriarchal throne such prominent participants in the synod under Neilos Kerameus as Joseph of Monembasia or Makarios of Nicomedia, but interestingly also Matthaios Phakrases of Serrhai. And with veterans such as Joseph of Heraclea or Alexius of Varna/Nicaea even a personal continuity to the first incumbency of Makarios and the Patriarchate of Philotheos Kokkinos was established.<sup>23</sup>

One may now assume a certain pragmatism of the synod in its dealing with the emperors and patriarchs in this time, but it was also a period when after the victory of Palamism no great theological debates in the ranks of the archpriests were fought, which had caused the removal of defeated groups from the episcopate in the late 13<sup>th</sup> century (dispute about the

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<sup>22</sup> Cf. DARROUZÈS, Reg. 2622 (May 1371), 2648 (April 22<sup>nd</sup> 1372), 2649 (after April 1372), 2652 (June 1372), 2654 (August 1372).

<sup>23</sup> MM II, 147 (Nr. 417); PRK V, Nr. 538; (signature of Phakrases); DARROUZÈS, Reg. 2879. Cf. also DARROUZÈS, Reg. 2847 (February 1389), 2848 (Februar 1389), 2849 (February 1389), 2851 (March 17<sup>th</sup> 1389), 2853 (April 1389), 2861 (July 1389), 2863 (July 1389).

Union with the Western Church) oder in the 1340s and 1350s (Palamism)<sup>24</sup>; mere political and ecclesiastical changes of regime may have been easier to accept, especially if also the new incumbents were "orthodox".

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The relatively high density of evidence from the Register of the Patriarchate of Constantinople enables us also to use quantitative methods for the analysis of the Register and of the body of hierarchs in Constantinople and their decision-making. On a basic level, this was already done by Jean Darrouzès, who in 1971 provided in his book on the Register several "tableaus", which listed the various metropolitans and archbishops who took part in the sessions of the synod during the respective Patriarchates. On the basis of our new edition, we corrected and augmented the information collected by Darrouzès for the Patriarchate of Neilos Kerameus and created a new table (see table 1) for a totality of 28 synodal sessions for the period from September 1379 (in the vacancy between the Patriarchates of Makarios and Neilos) to November 1387 (the last session registred for the incumbency of Neilos; see table 2).

As we have seen above, it is possible to answer some relevant questions already on the basis of merely counting and registering the evidence from the documents, for instance: How many bishops participated in the *synodos endemusa*? (The arithmetic mean for this period is 8 participants, see fig. 1). Which hierarchs were present in the synod and how often? (The arithmetic mean for the number of sessions visited by the individual bishops is 5, see table 3 and fig. 2)

However, this data enables us to use even more sophisticated tools from contemporary social sciences and statistical analysis for the study of the synod. If we presume that the joint participation in a session of the synod created a tie of collaboration between two hierarchs, we are able to construct a network of interaction between the bishops for each session and for the totality of 28 sessions from the period of Neilos Kerameus. The tools of social network analysis, which have already been used for the analysis of various communities and

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<sup>24</sup> Cf. for an overview PREISER-KAPPELLER, *Episkopat LXXIII–LXXXVIII* and the tables on p. XCII.



institutions in (western) medieval history with impressive results<sup>25</sup>, but so far – with the exception of Margaret Mullett's book on Theophylact of Ochrid and Giovanni Ruffini's recent study on 6<sup>th</sup> century Egypt<sup>26</sup> – never for the Byzantine period, allow us to re-construct these networks, to visualise and to analyse them.

If we look at the network created on the basis of all 28 sessions for the period between 1379 and 1387, we receive a network of 46 nodes (all participants in the synod including the patriarch; see fig. 3) – each link symbolising the joint participation of two individual hierarchs in one synodal session.<sup>27</sup> As already the visualisation makes evident, there exist differences between the nodes concerning the number of their links to other nodes and their positions within this network of interaction. These differences could be expected already on the basis of the different numbers of synodal sessions each hierarch took part in (see table 3). But network analytical tools allow us to identify more differences within the body of the synod.

A relatively simple, but highly relevant quantity of reference for the evaluation of a node's importance is its degree, or simply: the number of nodes with which an actor is directly connected – in our case, the number of individual hierarchs with whom together an actor at least once participated in the synod. It can be calculated in absolute numbers or in relative percentages (1 = a direct connection with all other nodes; 0.5 = a direct connection with half the nodes).<sup>28</sup> If we compare the absolute figures for the degree of our 45 hierarchs (see

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<sup>25</sup> Cf. P. BEARMAN, *Relations into Rhetorics: Local Elite Social Structure in Norfolk, England: 1540–1640*. Piscataway, New Jersey 1993; Qu. VAN DOOSSELAERE, *Commercial Agreements and Social Dynamics in Medieval Genoa*. Cambridge 2009; in general cf. R. V. GOULD, *Uses of Network Tools in Comparative Historical Research*, in: J. MAHONEY – D. RUESCHEMEYER (eds.), *Comparative Historical Analysis in the Social Sciences*. Cambridge 2003, 241–269. A "classic" study is J. F. PADGETT – Ch. K. ANSELL, *Robust Action and the Rise of the Medici, 1400–1434*. *The American Journal of Sociology* 98/6 (1993) 1259–1319. Cf. also P. D. MCLEAN, *The Art of the Network. Strategic Interaction and Patronage in Renaissance Florence*. Durham and London 2007

<sup>26</sup> M. MULLETT, *Theophylact of Ochrid. Reading the Letters of a Byzantine Archbishop (Birmingham Byzantine and Ottoman Monographs 2)*. Aldershot 1997, esp. 163–222; see also her observation in IDEM., *Byzantium: A Friendly Society? Past & Present* 118 (1988) 3–24; G. R. RUFFINI, *Social Networks in Byzantine Egypt*. Cambridge 2008, esp. 1–40 (for an introduction in some aspects of network analysis in historical studies).

<sup>27</sup> For the construction of this network and its analysis we have used the software-package Pajek, cf. W. DE NOOY – A. MRVAR – V. BATAGELJ, *Exploratory Social Network Analysis with Pajek (Structural Analysis in the Social Sciences)*. Cambridge 2005, esp. 101–118 on the category of "affiliation networks" to which the synodal network belongs.

<sup>28</sup> St. WASSERMANN – K. FAUST, *Social Network Analysis: Methods and Applications (Structural Analysis in the Social Sciences)*. Cambridge 1994, 100–104; J. SCOTT, *Social Network Analysis. A Handbook*. London 2000, 67; DE NOOY – MRVAR – BATAGELJ, *Exploratory Social Network Analysis* 125–126; D. JANSEN, *Einführung in die Netzwerkanalyse. Grundlagen, Methoden, Forschungsbeispiele*. Wiesbaden <sup>3</sup>2006, 103–105; M. O. JACKSON, *Social and Economic Networks*. Princeton 2008, 38–39, 59–65. Cf. also MULLETT, *Theophylact of Ochrid* 165, on the relevance of the "degree".

table 4) with the number of synodal sessions they took part in (see table 3 and fig. 2), it becomes clear that, with the exception of the Patriarch, those hierarchs with the highest number of attended sessions are not necessarily those with the highest degree within the network of synodal interactions. Of course, there exists a significant correlation between these two figures; a standard OLS-Regression of the degree on the number of sessions on logarithmic scale produces a correlation coefficient of 0.83. Still, this means that the differences in number of sessions cannot explain all variances in the number of synodal interaction-links between the hierarchs; obviously, to create such links to a high number of hierarchs it was not only important how many sessions a metropolitan took part in but also in which sessions he participated, namely in those with a high number as well as a high variance of participants (see also the number of synodal interaction links of each individual hierarch, table 5). Thus, we can identify hierarchs who obviously possessed a position within the synodal network which was more relevant than the number of the sessions they took place in alone would have suggested. The metropolitan with the highest degree after the Patriarch for instance is Joseph of Herakleia (in Thrace), who took part in 12 sessions, whereas the hierarch with the second highest degree, Anthimos of Ungroblachia, is also the front-runner in the number of synodal sessions, with 20 (see fig. 2). Also the metropolitans with the third- and fourth-ranking degree, Alexios of Varna (later Nicaea) and Sebasteianos of Ioannina (later Kyzikos) visited significantly fewer sessions than Anthimos (13 and 14 respectively). What the four have in common is that they all had received their episcopal consecration from the hands of Patriarch Philotheos Kokkinos; thus, they were long serving, experienced participants in the synod who at the same time symbolised a continuity of the synodal body beyond the problematic incumbency of Makarios to the time of the venerated Philotheos Kokkinos.<sup>29</sup> Therefore, the basis of their influential position in the synodal network is easier to understand; but they obviously had different approaches to the exercise of this influence. While Anthimos of Ungroblachia was almost constantly present in the capital, Joseph of Herakleia, residing near to Constantinople, preferred to join the synod on occasions of special importance, when many hierarchs were present. Characteris-

<sup>29</sup> Cf. *PLP* Nr. 614, 9030, 13811, 25063; PREISER-KAPPELLER, *Episkopat* 56, 143, 166–167, 321–322, 480. In 1373/1374 for instance, Alexios of Varna and Sebasteianos of Ioannina together were dispatched as delegates to the Peloponnese by Patriarch Philotheos Kokkinos, cf. *MM* II, 135 (Nr. 409); *PRK* V, Nr. 527; *DARROUZÈS*, *Reg.* 2657, 2658.

tically, Joseph was the highest-ranking metropolitan who – most probably at the instigation of Emperor John V Palaiologos – in October 1384 came to Constantinople and advocated for a revision of the verdict against the emperor’s former *protopapas* Konstantinos Kabasilas. Also Sebasteianos of (then) Kyzikos (likewise one of the most relevant actors in the network) as well as the metropolitan of Kerasus and the bishop of Athyra came to the synod as intermediators for Kabasilas; while we do not possess any further information on the hierarchy from Kerasus, the bishop of Athyra most probably acted at the instigation of Ioseph of Herakleia, who was his superior metropolitan.<sup>30</sup> This suggests an even more important role of Ioseph in the attempt to rehabilitate the deposed *protopapas*.

Another important characteristic of a node’s position in the network is its “betweenness”, which measures the percentage of nodes for which a particular node lays on the shortest path to any other node and indicates its importance for bridging connection between other nodes<sup>31</sup>, in our case between hierarchs who never participated together in one synodal session during the period we are discussing. Once again, Ioseph of Herakleia’s betweenness is significantly higher than that of Anthimos of Ungroblachia and only second to the value of the Patriarch (see table 6); the same holds true with regard to the “clustering coefficient” which indicates the probability that two nodes connected with a node are also connected to each other<sup>32</sup> (in our case: that two hierarchs who at one time participated together with a hierarch in the synod took also part together in the synod at one time; see table 7). The clustering coefficient of Joseph of Herakleia is the second lowest after the Patriarch; this

<sup>30</sup> MM II 56 (Nr. 361/3); PRK V, Nr. 466; DARROUZÈS, Reg. 2778; 27. October 1384: „ἐπεὶ παρήσαν καὶ ἄλλοι τῶν ἀρχιερέων, οἱ μὴ παρόντες τότε, ὁ Ἡρακλείας, ὁ Κυζίκου, ὁ Κερασσοῦντος καὶ ὁ ἐπίσκοπος Ἀθύρα, οἷς καὶ μεσίταις χρησάμενος ὁ παπᾶς Κωνσταντῖνος ὁ Καβάσιλας ἤξιου συμπαθείας τυχεῖν“ (see also table 1). On this case cf. Ch. KRAUS, Der Fall des Priesters Konstantinos Kabasilas. Historische Bemerkungen zu einem Urkundenkomplex im Patriarchatsregister von Konstantinopel aus den Jahren 1383–1385, in: W. HÖRANDNER – J. KODER – M. A. STASSINOPOULOU (eds.), Wiener Byzantinistik und Neogräzistik. Beiträge zum Symposium Vierzig Jahre Institut für Byzantinistik und Neogräzistik der Universität Wien im Gedenken an Herbert Hunger (Wien, 4.–7. Dezember 2002). Wien 2004, 248–263; IDEM, Kleriker im späten Byzanz. Anagnosten, Hypodiakone, Diakone und Priester 1261–1453 (*Mainzer Veröffentlichungen zur Byzantinistik* 9). Wiesbaden 2007, 308–311, and K. PITSAKIS, Les affaires pénales des révérends pères Constantin Kabasilas et Andronic Basilikos: Petit commentaire juridique (in this volume). On Athyra cf. PREISER-KAPPELLER, Episkopat 144–145, and A. KÜLZER, Ostthrakien (Europè) (*TIB* 12). Wien 2008, 271–272.

<sup>31</sup> WASSERMANN – FAUST, Social Network Analysis 189–191; SCOTT, Social Network Analysis 86–87; DE NOOY – MRVAR – BATAGELJ, Exploratory Social Network Analysis 131–132; JANSEN, Einführung in die Netzwerkanalyse 134–137; JACKSON, Social and Economic Networks 38–39, 59–65

<sup>32</sup> JACKSON, Social and Economic Networks 34–37. Cf. also D. J. WATTS, Small Worlds. The Dynamics of Networks between Order and Randomness (*Princeton Studies in Complexity*). Princeton – Oxford 1999, 32–33; D. EASLY – J. KLEINBERG, Networks, Crowds, and Markets. Reasoning about a Highly Connected World. Cambridge 2010, 44–45.

again indicates that his network of synodal interactions shows a greater variety than that of other hierarchs. Thus, it becomes even more comprehensible why the supporters of Konstantinos Kabasilas in 1384 chose Joseph as their leading advocate in the synod; from a network analytical point of view he was the second best choice for an attempt to achieve a certain outcome in the synod after the Patriarch himself - although Joseph in the end attached himself to the prevailing consensus (ὡς ἐκ κοινῆς γνώμης, as we read in the document) against Kabasilas, obviously as he recognised that it was impossible to achieve a change of opinion among a majority of hierarchs; acting otherwise would have certainly weakened his position in the synod.<sup>33</sup>

In addition, we can also count the number of joint synodal sessions of any two hierarchs by calculating the values of the links between the nodes (see table 8)<sup>34</sup>; this gives us hints at the intensity of interactions within the synodal network. The frequency of joint participation may have influenced the familiarity among hierarch and therefore also decision-making and voting in the synod. We learn for instance, that Ioseph of Herakleia participated together with Sebasteianos of Ioannina/Kyzikos in the synode in eight of the 12 sessions he took part in or that Sebasteianos and Alexios of Varna/Nikaia participated ten times together in the synod. As Egon Flaig has made clear, a "continuous decision context" with regard to objects and personnel was a necessity for the operation of decision-making bodies such as the synod<sup>35</sup>; the results of network analysis clearly demonstrate this continuity with regard to the interaction of the most active and dignified members of the synod. Similarly revealing results we receive if we limit our network analysis to the time period between September 1379 and June 1380 (the first seven sessions from our sample)<sup>36</sup>, during which Theophanes of Nicaea was still active; the emerging network is of course smaller (21 nodes). As the first two of this sessions took place during the vacancy between the

<sup>33</sup> Cf. MM II 56 (Nr. 361/3); PRK V, Nr. 466; DARROUZÈS, Reg. 2778: ἀνεγνώσθη καὶ αὐθις ἡ ἐξέτασις ἢ περὶ αὐτοῦ καὶ ἡ συνοδικὴ ἀπόφασις καὶ ἡ προτέρα καὶ ἡ ὑστέρα, ὥστε τοὺς μὲν τότε παρόντας τῶν ἀρχιερέων ἀναμνησθῆναι τῶν λαληθέντων, τοὺς δὲ ἀπόντας τότε καὶ νῦν παρόντας μαθεῖν τὴν ὑπόθεσιν καὶ τὴν συνοδικὴν ἀπόφασιν, καὶ μετὰ τὴν ἀνάγνωσιν τούτων πάντες ὡς ἐκ κοινῆς γνώμης ἀπερήναντο, δικαίως γενέσθαι τὴν κατ' αὐτοῦ ἀπόφασιν καὶ κανονικῶς (...). Cf also FLAIG, *Das Konsensprinzip*, and PREISER-KAPPELLER, *Hē tōn pleionōn psēphos* (forthcoming). On the function of such routines (in our case: of decision-making by consensus) for institutions and the effect of their infringement on the position of members of the institution cf. also P. WALGENBACH – R. E. MEYER, *Neoinstitutionalistische Organisationstheorie*. Stuttgart 2008, 44 and 123–131.

<sup>34</sup> DE NOOY – MRVAR – BATAGELJ, *Exploratory Social Network Analysis* 104–106.

<sup>35</sup> FLAIG, *Das Konsensprinzip* 15–17. Cf. also MULLETT, *Theophylact of Ochrid* 164, on the relevance of the frequency of interaction within a network.

<sup>36</sup> DARROUZÈS, Reg. 2696 (I), 2696 (II), 2704, 2705, 2706 (I), 2706 (II) and 2707 (see below, tables 1 and 2).

deposition of Makarios and the election of Neilos Kerameus, the seven most active hierarchs even exceed the Patriarch in their values for degree (see table 9) and betweenness (see table 10); these are Theophanes of Nicaea, Alexios of Varna, Sebasteianos of Ioannina, Neilos of Sozopolis<sup>37</sup>, Paulos of Derkos<sup>38</sup>, Michael of Amaseia<sup>39</sup> and Ioseph of Herakleia, of whom at least six (and maybe all of them, cf. fn. 38) had been ordained by Philotheos Kokkinos; these were “the archpriests who had formulated the former decision (on Russia in 1375) with me” mentioned by Theophanes of Nicaea (see above), the “old guard” of the hierarchs, who strongly influenced decision-making in the synod since the time of Kokkinos until the early years of Neilos Kerameus. But since we can calculate these quantities of reference for each of the 28 sessions, it is also possible to observe the development of a node’s relevance in time during the Patriarchate of Neilos. As the charts for degree indicates, the values for our seven front men for the period 1379–1380 actually decreased or ended (Theophanes of Nicaea, Neilos of Sozopolis, Paulos of Derkos and Sebasteianos of Kyzikos all died in the 1380s; see fig. 4) during this period, while the values for other “younger” hierarchs such as Matthaios of Adrianople (transferred to this metropolis in June 1380)<sup>40</sup>, Ioseph of Monembasia (elected in 1383)<sup>41</sup>, Nikandros of Ganos (Metropolitan since 1383)<sup>42</sup> or Makarios of Nikomedeia (ordained in 1385)<sup>43</sup> increased (see fig. 5).<sup>44</sup> In this case, we are able to make “visible” the already mentioned “generation change” in the synod during these years with network analytical tools.

<sup>37</sup> In 1365 Neilos was ordained as Metropolitan of Milet by Philotheos Kokkinos, in 1369 transferred to Sozopolis and in 1380 awarded the *topos* of Amaseia; he most probably died soon afterwards, cf. *PLP* Nr. 20045, and PREISER-KAPPELLER, *Episkopat* 423.

<sup>38</sup> Paulos of Derkos first appears in the Synod in the 1379, but maybe he can be identified with an anonymous Archbishop of Derkos who was ordained by Philotheos Kokkinos in 1365 and present in the synod throughout the incumbency of Kokkinos; therefore, he would have been promoted to Metropolitan later. This would rank Paulos within the same group as the other prominent actors in the synod at the beginning of Neilos’ Patriarchate; maybe he was active until 1384, cf. *PLP* Nr. 22119, and PREISER-KAPPELLER, *Episkopat* 91–92.

<sup>39</sup> Michael was ordained Metropolitan of Amaseia by Philotheos Kokkinos in late 1369; in 1371 he received Neokaisarea as *epidosis*, in 1379 Medeia in Thrace, since he was not able (or willing) to reside in Asia Minor. He was active in the synod until 1387, maybe until 1389. Cf. *PLP* Nr. 19062, and PREISER-KAPPELLER, *Episkopat* 24.

<sup>40</sup> *PLP* Nr. 17363, and PREISER-KAPPELLER, *Episkopat* 8.

<sup>41</sup> *PLP* Nr. 9036, and PREISER-KAPPELLER, *Episkopat* 290.

<sup>42</sup> *PLP* Nr. 20248, and PREISER-KAPPELLER, *Episkopat* 128.

<sup>43</sup> *PLP* Nr. 16268, and PREISER-KAPPELLER, *Episkopat* 327.

<sup>44</sup> In October 1386 for instance, Ioseph of Monembasia and Makarios of Nikomedeia together with two other prominent hierarchs, Anthimos of Ungroblachia and Isidoros of Thessalonike, and Patriarch Neilos Kerameus, attested the authenticity of a copy of a document issued by the Patriarch for the monastery of Kutlumus on Mount Athos, cf. *Actes de Kutlumus II*<sup>2</sup>, ed. by P. LEMERLE (*Archives de l’Athos*). Paris 1988, 145 (nr. 38; many thanks to Dr. Christian Gastgeber [Vienna], who brought this document to my attention).

In addition, network analysis allows us to study several characteristic figures of the entire network of the synod; as a benchmark, it is usual to construct a random networks with the same number of nodes and the same average degree.<sup>45</sup> This comparison gives us some hints on the structure of the synodal interaction network in general (see table 11); while the “density” (which measures the proportion of the maximal possible links which is actually present in the network<sup>46</sup>) of the networks is almost equal (ca. 40 % of all possible connections are realised), the centrality measures<sup>47</sup> are significantly higher than for a randomized distribution of links, while the average clustering coefficient is only half as high. This is well in accordance with our observations so far: that the synodal interaction network is centred around a smaller number of important actors (hubs), while a majority of hierarchs took part in the decision-making process on a more casual basis. This impression is supported by a view on the general frequency distribution of “degree” (that is, how often a certain value of degree occurs within the total sample) within the totality of nodes; while the values for degree in the random network are more equally distributed around the average (see fig. 7), the range for the synodal distribution of the years 1379 to 1387 is far more wider, with some outliers (= the hubs) to higher values which we do not observe for the random distribution (see fig. 6). The results of this benchmark are very well comparable with those of comparisons between modern-day real world networks and their random counterparts; this can also be interpreted as indicator for the consistency between a network model and reality.<sup>48</sup> As a second benchmark, we used the synodal interaction network for the second Patriarchate of Kallistos I (spring 1355–August 1363; data from 12 synodal sessions), which we have constructed for an other study (see table 11).<sup>49</sup> This network is smaller (33 nodes), therefore, its density is higher than the one of the network for 1379 – 1387 (the lower the number of actors the higher their ability to establish all possible interaction links within the network<sup>50</sup>). At the same time, although the “Kallistos-

<sup>45</sup> On this method cf. R. ALBERT – A.-L. BARABÁSI, *Statistical Mechanics of Complex Networks*. *Reviews of Modern Physics* 74 (2002) 48–97 (cf. <http://arxiv.org/abs/cond-mat/0106096v1>; retrieved on August 2<sup>nd</sup> 2010); JACKSON, *Social and Economic Networks* 77–109; RUFFINI, *Social Networks in Byzantine Egypt* 235–236.

<sup>46</sup> WASSERMANN – FAUST, *Social Network Analysis* 100–103; SCOTT, *Social Network Analysis* 78; DE NOOY – MRVAR – BATAGELJ, *Exploratory Social Network Analysis* 62–63; JANSEN, *Einführung in die Netzwerkanalyse* 94–95; JACKSON, *Social and Economic Networks* 29. Cf. also MULLETT, *Theophylact of Ochrid* 165.

<sup>47</sup> Cf. SCOTT, *Social Network Analysis* 90.

<sup>48</sup> ALBERT – BARABÁSI, *Statistical Mechanics of Complex Networks*; JACKSON, *Social and Economic Networks* 56–109

<sup>49</sup> PREISER-KAPPELLER, *Hē tōn pleionōn psēphos* (forthcoming).

<sup>50</sup> Cf. the literature in fn. 46.

network” is less centralised than the “Neilos-network” with regard to degree and betweenness, the interaction links are still more concentrated around the most active nodes than would be the case in a random network; also the cumulative degree distribution of the 1355–1363 synodal network shows more similarities with the one of the 1379–1387 network than with a randomised network (see fig. 8). Thus, an unequal distribution of activity and interaction links around a smaller number of hierarchs could be considered a general characteristic of the synod (although only a complete analysis of the entire material from the PRK would provide stronger evidence); obviously, not only a comparatively small number of hierarchs (in relation to the totality of the episcopacy) participated in the synod (as mentioned above), but also participation (and accordingly potential influence on decision-making) was unequally distributed among the archpriests. The quantitative data and results of network analysis very much support our impression concerning the unequal influence distribution within the synod which we gained from “classic” analysis of the documents in the PRK for the period of Neilos Kerameus (and beyond).

But of course, the synod also acted in this time not in isolation from the political and social environment within and outside of the Byzantine Empire, and we have to account for various links to individual members or cliques that go beyond the synod.

An illustrative example is Matthaïos, Bishop of Kernitza in the Peloponnese: He succeeded in 1376 to obtain, prior to the coup of Andronikos IV Palaiologos, a *prostagma* from the hands of Emperor Ioannes V Palaiologos that promoted his see from a suffragan of the Metropolis Palaiai Patrai to the rank of a metropolis itself.<sup>51</sup> He also had the support of the governor of the Byzantine Morea, the despot Manuel Palaiologos Kantakuzenos (who died

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<sup>51</sup> Cf. the information in MM II 9–11 (Nr. 335); PRK V, Nr. 430; DARROUZÈS, Reg. 2704 (June 1380). DÖLGER, Reg. 3148; by Dölger, this *prostagma* is dated to the years 1376–1379, which would be the reign of Andronikos IV Palaiologos, who overthrew his father Ioannes V Palaiologos in August 1376; but the issuer of this *prostagma* most probably was Ioannes V Palaiologos, who returned to power after the ejection of Andronikos IV on July 1<sup>st</sup> 1379. Andronikos IV. Palaiologos took refuge in Genoese Galata, from where he continued to fight against his father; only in May 1381, they two came to an arrangement which included the recognition of Andronikos IV as co-emperor and heir to the throne (DÖLGER, Reg. 3171; cf. the affirmation of this agreement by Patriarch Neilos Kerameus and the Synod, MM II 25–27 (Nr. 344); PRK V, Nr. 440; DARROUZÈS, Reg. 2717). Therefore, Patriarch Neilos in Spring 1380 before the arrangement of May 1381 would not have referred to a charter issued by Andronikos IV as *σεπτὸν πρόσταγμα τοῦ κρατίστου καὶ ἁγίου μου αὐτοκράτορος*. Thus, the promotion of Kernitza to a metropolis must have been an act of Ioannes V Palaiologos from the time shortly before August 1376, which was then confirmed by Patriarch Makarios. On the dating of the political events cf. also D. M. NICOL, *The Last Centuries of Byzantium 1261–1453*. Cambridge <sup>2</sup>1993, 279–282; DÖLGER, Reg. I, V, p. 64; DARROUZÈS, Reg. VI, p. 3.

in April 1380), as we learn from a later document.<sup>52</sup> Matthaïos then received a confirmation of the imperial *prostagma* by the Synod during the first Patriarchate of Makarios.<sup>53</sup> Matthaïos afterwards remained in Constantinople and in June 1380 was confirmed as Metropolitan of Kernitza by the Synod under Neilos Kerameus – against the claims of the Metropolitan of Palaiai Patrai.<sup>54</sup> In the same month Matthaïos together with Sebasteianos of Ioannina was sent by the synod to Theophanes of Nicaea in order to obtain his agreement to re-arrange the administration of the Russian Church.<sup>55</sup> But then the Metropolitan of Palaiai Patrai apparently succeeded with his objections against the promotion of Kernitza to Metropolis; shortly before March 1381 the Emperor annulled his earlier *prostagma* with a new document, and in March 1381 also the Synod under Neilos Kerameus abrogated the promotion of Kernitza and placed it again under the control of Palaiai Patrai. Matthaïos of Kernitza in contrast presented himself now already as a confidant of another potentate: in September 1380 he confirmed in the Register of the Patriarchate that the document which he had written for the Albanian prince Sguros Bua Spata (who had taken possession of the city of Naupactus)<sup>56</sup> and delivered to the Emperor and Patriarch and Synod completely corresponded with the will of Bua Spata.<sup>57</sup> Therefore, the transfer of Matthaïos as Metropolitan from Kernitza to Ioannina, which precedes the demotion of Kernitza in March 1381, was no coincidence, since the Metropolitan of Ioannina since longer time also administrated the diocese of Naupactus and resided during the reign of Thomas Preljubović. who would not tolerate any Metropolitan sent from Constantinople in Ioannina (also Matthaïos could stay there in 1382 only for a short time before he was displaced) in Arta in the power centre of the brother of Sguros Bua Spata, Gjin Bua Spata.<sup>58</sup>

If we construct a so-called “Ego-Network”<sup>59</sup> for Matthaïos on the basis of this information (see fig. 9), we recognise how he had positioned himself in a network of relations to the secular and ecclesiastical powerful within and beyond the borders of the Byzantine Em-

<sup>52</sup> MM II 23–25 (Nr. 342); PRK V, Nr. 437; DARROUZÈS, Reg. 2714 (März 1381). Cf. *PLP* Nr. 10981.

<sup>53</sup> The installation of Patriarch Makarios took place in June 1377 (DARROUZÈS, Reg. 2682), the confirmation of Matthaïos’ promotion to metropolitan most probably in the first month of Makarios’ incumbency; this is also the opinion of DARROUZÈS, Reg. 2686.

<sup>54</sup> MM II 9–11 (Nr. 335); PRK V, Nr. 430; DARROUZÈS, Reg. 2704.

<sup>55</sup> MM II 12–18 (Nr. 337); PRK V, Nr. 432; DARROUZÈS, Reg. 2705.

<sup>56</sup> *PLP* Nr. 26527.

<sup>57</sup> MM II 11–12 (Nr. 336); PRK V, Nr. 431; vgl. DARROUZÈS, Reg. 2708.

<sup>58</sup> MM II 23–25 (Nr. 342); PRK V, Nr. 437; DARROUZÈS, Reg. 2714 (März 1381); *PLP* Nr. 26523.

<sup>59</sup> Cf. SCOTT, Social Network Analysis 69–72.



pire; he even acted as "broker" of information<sup>60</sup> between Constantinople and the local Albanian potentates in northwestern Greece. Such "multiplex" interweavements of hierarchs we observe in many cases, especially in dioceses beyond the political borders of the shrinking Byzantine Empire; they made it possible for bishops to establish and preserve their often delicate position in these areas and at the same time allowed the Emperor or the Patriarch to deploy them as middlemen to foreign powers as in the case of Matthaïos of Kermitza.<sup>61</sup> The concepts and tools of network analysis permit us to understand, analyse and visualise these phenomena, especially relations between different political and religious communities and authorities, in a better way than within the framework of classic international relations for instance, which is based on the modern concept of the nation state, as Daniel H. Nexon also has demonstrated in his recent study on "The Struggle for Power in Early Modern Europe".<sup>62</sup>

And while we identify for Matthaïos especially connections to secular rulers, we observe for other hierarchs monastic linkages that favored their rise to the rank of metropolitans, such as in the case of Matthaïos of Kyzikos, who later became Patriarch Matthaïos I; he was a monk in the Charsianites Monastery in Constantinople, whose abbot Neilos Kerameus remained also during his patriarchate, before he became principal of the Patriarch's *kellion* and then metropolitan.<sup>63</sup> There existed also networks through kinship, through student-teacher relationships, through allegiance or economic cooperation, which we have to account for the hierarchs in order to receive a more realistic picture of the linkages and groupings within the highest clergy, which were the background for many decision of which we learn from the documents in the Register of the Patriarchate of Constantinople. The idea to conceive groups within the Byzantine society as networks, is of course not new; Klaus-Peter Matschke and Franz Tinnefeld wrote in the introduction to their work on the

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<sup>60</sup> On "brokerage" in networks cf. R. S. BURT, *Brokerage and Closure. An Introduction to Social Capital*. Oxford 2007, 11–28; EASLY – KLEINBERG, *Networks, Crowds, and Markets* 46–47.

<sup>61</sup> Cf. for instance the case of Metropolitan Kyprianos of Russia, who served as envoy of the Emperor to Eastern Europe in 1387: MM II 98–99 (Nr. 393); PRK V, Nr. 508; DARROUZÈS, Reg. 2822, and J. PREISER-KAPPELLER, *Networks and Hierarchs. Structures and mechanisms of the "foreign policy" of the Patriarchate of Constantinople in late 14<sup>th</sup> century Eastern Europe* (forthcoming).

<sup>62</sup> D. H. NEXON, *The struggle for power in early modern Europe. Religious conflict, dynastic empires and international change (Princeton studies in international history and politics)*. Princeton – Oxford 2009, 20–66; cf. also H. KLEINSCHMIDT, *Das Mittelalter in der Theorie der internationalen Beziehungen*. Hamburg 2007.

<sup>63</sup> MM II 108–111 (Nr. 399); PRK V, Nr. 515; DARROUZÈS, Reg. 2829 (November 1387); *PLP* Nr. 17387; PREISER-KAPPELLER, *Episkopat* 216.

society in late Byzantium: "it becomes visible (...) that none of the major social groups can be understood as mono-causal and one-dimensional, but that they possess a whole network of relationships and are embedded in a great fabric (...)".<sup>64</sup> But network analysis allows us to perceive this concept in a novel way and to combine it with the analysis of sources to gain quantitative data directly on the basis of our evidence in order to achieve a deeper understanding of the linkeages and mechanisms within Byzantine institutions and groups, as the results presented in this paper demonstrate. Already in 1982, Alexander Kazhdan and Giles Constable have made some illuminating remarks on the potential, but also the pitfalls of such methods: "Neither simple human calculations nor the more intricate and sophisticated work of a computer can provide a completely objective picture or create a secondary source of unshakable significance. But despite its many limitations and restrictions, statistical evidence provides better, clearer, and more reliable conclusions than the accumulation of occasional and separate examples. Scholars must crosscheck statistical results lest they be deceived by the apparent persuasiveness of statistics. It is necessary to grasp the social or historical sense of the numbers and to ascertain whether this sense coincides with conclusions drawn from other sources of information."<sup>65</sup> We consider network analysis a method which enables us to take into account Kazhdan's and Constable's warning and at the same time to put into effect the chances they saw for a combination of historical research with such tools.

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<sup>64</sup> K.-P. MATSCHKE – F. TINNEFELD, *Die Gesellschaft im späten Byzanz. Gruppen, Strukturen und Lebensformen*. Vienna 2001, 7.

<sup>65</sup> A. KAZHDAN – G. CONSTABLE, *People and Power in Byzantium*. Washington, D.C. 1982, 177. For further aspects of this combination of "classic" historical research with methods from social and complexity studies cf. J. PREISER-KAPPELLER, *Calculating Byzantium? Social Network Analysis and Complexity Sciences as tools for the exploration of medieval social dynamics*. Working Paper (July 2010) (<http://www.oeaw.ac.at/byzanz/historicaldynamics.htm>).

Participants in the synod besides the Patriarch (d.g. = <i>dia gnomē</i> ; the number indicates the hierarchical rank of the participant in the respective session after the Patriarch)	Dar.Reg. 2696 (I) Sept. 1379	Dar.Reg. 2696 (II) Sept. 1379	Dar.Reg. 2704/ June 1380	Dar.Reg. 2705/ June 1380	Dar.Reg. 2706 (I) June 1380	Dar.Reg. 2706 (II) June 1380	Dar.Reg. 2707/ June 1380	Dar.Reg. 2716/ before March 1381	Dar.Reg. 2714/ March 1381	Dar.Reg. 2717/ May 1381	Dar.Reg. 2718/ July 1381	Dar.Reg. 2728/ 23. Nov. 1381	Dar.Reg. 2741/ Sept. 1382	Dar.Reg. 2745/ Nov. 1382	Dar.Reg. 2749/ 20. January 1383	Dar.Reg. 2756/ 24. Aug. 1383	Dar.Reg. 2759/ Sept. 1383	Dar.Reg. 2767/ May 1384	Dar.Reg. 2778/ 27. Oct. 1384	Dar.Reg. 2791/ 16. Oct. 1385	Dar.Reg. 2792/ 1385/ Beg. March 1386	Dar.Reg. 2796/ 1389/ Beg. May 1387	Dar.Reg. 2820/ 20. od. 27. May 1387	Dar.Reg. 2822/ 29. May 1387	Dar.Reg. 2823/ June 1387	Dar.Reg. 2826/ Sept. 1387	Dar.Reg. 2829/ Nov. 1387	Participants in the synod besides the Patriarch (d.g. = <i>dia gnomē</i> ; the number indicates the hierarchical rank of the participant in the respective session after the Patriarch)		
Theophanes of Nikaia (1365-after June 1380)			1	1			1																							Theophanes of Nikaia (1365-after June 1380)
Ioseph of Herakleia (1368/1369-1394)	2	2	2	1	2	2																						2	Ioseph of Herakleia (1368/1369-1394)	
Polykarpos of Adrianopolis (1365-before June 1380)	3 (d.g.)		3																											Polykarpos of Adrianopolis (1365-before June 1380)
Sebastianos of Ioannina (March 1365-before March 1381/after Kyzikos/after March 1381-after March 1386)	4	4	4	3	4	4	3	1	1	1	1	1	1																	Sebastianos of Ioannina (March 1365-before March 1381/after Kyzikos/after March 1381-after March 1386)
Michael of Amaseia (December 1369-May 1387/February 1389)	5	5	5	4	5	5	4			3	3	4	3																	Michael of Amaseia (December 1369-May 1387/February 1389)
Neilos of Sozopolis (Sept. 1369-June 1380)	6	6	8	6 (d.g.)	5	4																								Neilos of Sozopolis (Sept. 1369-June 1380)
Ioaikim of Pontoherakleia (Sept. 1379-July/November 1381)	8	10 (d.g.)	8 (d.g.)	8 (d.g.)	10	4			5	5	7	6																		Ioaikim of Pontoherakleia (Sept. 1379-July/November 1381)
Kyprianos of Russia/Lithuania and Little Russia (1375-1406)	9	8		8 (d.g.)																										Kyprianos of Russia/Lithuania and Little Russia (1375-1406)
Paulos of Derkos (Sept. 1379-May 1384)	10	9	12	11	10	10	11																							Paulos of Derkos (Sept. 1379-May 1384)
Gregorios of Chama (1379-1390)	11	10														5	5	present?												Gregorios of Chama (1379-1390)
Alexios of Varna (July 1370?-before March 1381/of Nikaia (March 1381-after May 1395))	7	11	9	7	8	7	7	2	2	3																	4	4	Alexios of Varna (July 1370?-before March 1381/of Nikaia (March 1381-after May 1395))	
Isidoros of Thessalonike (May 1380-Sept. 1384 & Sept./Oct. 1385-Jan. 1396)			3	2	3	3	2										12?	2	2	1	1	1	1	1	1	1	1	1	Isidoros of Thessalonike (May 1380-Sept. 1384 & Sept./Oct. 1385-Jan. 1396)	
Chariton of Ungroblachia (1372-after June 1380)			6		6	5																								Chariton of Ungroblachia (1372-after June 1380)
Anthimos of Ungroblachia (Oct. 1370-after July 1389)			7	5	7	6	6	2	4	4	2	2	2	2	1	1	1	2	present?	3?	5									Anthimos of Ungroblachia (Oct. 1370-after July 1389)
N. N. of Keltzene (1380)			11	9		8																								N. N. of Keltzene (1380)
Matthaios of Kernitza (1377/1378-March 1381)/of Ioannina (March 1381-1385/1386)				10	9	8	9																							Matthaios of Kernitza (1377/1378-March 1381)/of Ioannina (March 1381-1385/1386)
Archb. Ioseph of Anchialos (June 1380-November 1381)			13	12	11					8	11																			Archb. Ioseph of Anchialos (June 1380-November 1381)
Pomen of Kiev and Megale Rosa (June 1380-1388)					9																									Pomen of Kiev and Megale Rosa (June 1380-1388)
Matthaios of Adrianopolis (June 1380-1391)																														Matthaios of Adrianopolis (June 1380-1391)
Antonios of Mesembria (April 1372-1381)										6	8																			Antonios of Mesembria (April 1372-1381)
N. N. of Varna (July 1381)										9																				N. N. of Varna (July 1381)
Archb. N. N. of Lemnos (July 1381-Oct. 1385)										10																				Archb. N. N. of Lemnos (July 1381-Oct. 1385)
Makarios of Laodikeia (November 1381-after August 1384)													4	3	3	2	4	4	3	present?										Makarios of Laodikeia (November 1381-after August 1384)
Theophilos of Pergé and Attaleia (November 1381)													5																	Theophilos of Pergé and Attaleia (November 1381)
Markos of Ainos (November 1381)													7																	Markos of Ainos (November 1381)
N. N. of Kotyaion (before Sept. 1382-Nov. 1382)/of Philadelphia (since Nov. 1382)																														N. N. of Kotyaion (before Sept. 1382-Nov. 1382)/of Philadelphia (ab Nov. 1382)
Theodosios of Gothia (ca. 1376-1385)																														Theodosios of Gothia (ca. 1376-1385)
N. N. of Ikonion (Nov. 1382-June 1385)																														N. N. of Ikonion (Nov. 1382-June 1385)
Thaddaios of Cherson (after 1371-after 1394)																														Thaddaios of Cherson (after 1371-after 1394)
Theoktistos of Sugdaia (Nov. 1382-1394)																														Theoktistos of Sugdaia (Nov. 1382-1394)
N. N. of Zekeia (Sept.-Nov. 1382)																														N. N. of Zekeia (Sept.-Nov. 1382)
Matthaios of Myra (January 1383-before Oct. 1393)																														Matthaios of Myra (January 1383-before Oct. 1393)
Ioseph of Monembasia (Aug. 1383-1394)																														Ioseph of Monembasia (Aug. 1383-1394)
N. N. of Kerasus (Oct. 1384)																														N. N. of Kerasus (Oct. 1384)
Bish. N. N. (Theophanes?) of Athyra (Oct. 1384)																														Bish. N. N. (Theophanes?) of Athyra (Oct. 1384)
Makarios of Nikomedeia (Oct. 1385-1397)																														Makarios of Nikomedeia (Oct. 1385-1397)
N. N. of Palaiiai Patrai (March 1386)																														N. N. of Palaiiai Patrai (March 1386)
N. N. of Ephesos (March 1386-after Nov. 1387)																														N. N. of Ephesos (March 1386-after Nov. 1387)
Matthaios Phakrasos of Serres (1376-1409)																														Matthaios Phakrasos of Serres (1376-1409)
Nikandros of Ganos (1383-1391)																														Nikandros of Ganos (1383-1391)
N. N. (Damianos?) of Philippopolis (Sept. 1387)																														N. N. (Damianos?) of Philippopolis (Sept. 1387)
N. N. of Lakedaimonia (Sept. 1387)																														N. N. of Lakedaimonia (Sept. 1387)
Ioseph of Derkos (Sept. 1387-1400)																														Ioseph of Derkos (Sept. 1387-1400)
N. N. of Staurupolis (1387)																														N. N. of Staurupolis (1387)
N. N. of Mesembria (1387-1391)																														N. N. of Mesembria (1387-1391)

Table 2: The 28 synodal sessions between September 1379 and November 1387

Darrouzès, Reg. Nr.	Document	Date	Content	Number of participants (without the Patriarch)
2696 (I)	MM II 1–6 (Nr. 332)	Sept. 1379	The Synod discusses during the vacancy after the dismissal of the Patriarch Makarios the allegations against Metropolitan Markellos of Ikonion (first session)	10 (Vacancy)
2696 (II)	MM II 1–6 (Nr. 332)	Sept. 1379	The Synod discusses during the vacancy after the dismissal of the Patriarch Makarios the allegations against Metropolitan Markellos of Ikonion (second session)	11 (Vacancy)
2704	MM II 9–11 (Nr. 335)	June 1380	Neilos Kerameus and the Synod confirm the promotion of the bishopric of Kernitza to the rank of a Metropolis	12
2705	MM II 12–18 (Nr. 337)	June 1380	Neilos Kerameus and the Synod appoint the priest monk Pimen as Metropolitan of Kiev and Great Russia and restrict the jurisdiction of the Metropolitan of Kiev and Lithuania Kyprianos to the district of Lithuania and Little Russia	11
2706 (I)	MM II 6–8 (Nr. 332)	June 1380	Neilos Kerameus and the Synod discuss the allegations against Metropolitan Markellos of Ikonion	11
2706 (II)	MM II 6–8 (Nr. 332)	June 1380	Neilos Kerameus and the Synod discuss the allegations against Metropolitan Markellos of Ikonion and depose him	10
2707	MM II 18–20 (Nr. 338)	June 1380	Neilos Kerameus and the Synod transfer Bishop Matthaïos of Poïmanenon to the Metropolis Adrianopolis	11
2716	MM II 25 (Nr. 343); TRAPP, Nik. 187–188	before March 1381	Neilos Kerameus and the Synod transfer the Metropolitan Alexios of Varna in the Metropolis of Nikaia and grant him the administration of the Metropolis Prusa for life	4
2714	MM II 23–25 (Nr. 342)	March 1381	Neilos Kerameus and the Synod put the bishopric of Kernitza again under the control of the Metropolitan of Palaiai Patrai	5
2717	MM II 25–27 (Nr. 344)	May 1381	Neilos Kerameus and the Synod reaffirm and confirm the sworn agreements between Emperor Ioannes V Palaiologos and Andronikos IV Palaiologos	5
2718	MM II 28–30 (Nr. 345)	July 1381	Neilos Kerameus and the Synod appoint the priest monk Kasianos as Metropolitan of Vidin	10
2728	MM II 37–39 (Nr. 353)	23. Nov. 1381	Neilos Kerameus and the Synod depose Metropolitan Dorotheos of Peritheorion who had brought himself with the help of the Turks back into the possession of his church	11
2741	MM II 42–44 (Nr. 355)	Sept. 1382	Neilos Kerameus and the Synod settle the dispute between the Metropolitan Thaddaios of Cherson and the Metropolitan of Sugdaia and Phulloi concerning the rights in the area of Elissos	6
2745	MM II 45–47 (Nr. 357)	Nov. 1382	Neilos Kerameus and the Synod transfer the Metropolitan of Kotyaeion to the Metropolis Philadelpheia that has taken the position of the Metropolis Sardis	8
2749, 2750, 2751, 2752, 2753	MM II 48–51 (Nr. 360/I–V)	23. Jan. 1383	Neilos Kerameus and the Synod punish several priests because of various offenses	5
2756	MM II 51–54 (Nr. 361/1)	24. Aug. 1383	Neilos Kerameus and the Synod depose the imperial Protopapas Konstantinos Kabasilas because of a series of offenses	5
2759	MM II 54–56 (Nr. 361/2)	Sept. 1383	Neilos Kerameus and the Synod confirm the deposition of the former imperial Protopapas Konstantinos Kabasilas	5
2767	Archiv von Patmos	May 1384	Neilos Kerameus and the Synod appoint the Hieromonachos Matthaïos as Metropolitan of Myra	6
2778	MM II 56 (Nr. 361/3)	27. Oct. 1384	Neilos Kerameus and the Synod again confirm the deposition of the former imperial Protopapas Konstantinos Kabasilas	9
2791	MM II 56–59 (Nr. 361/4)	16. Oct. 1385	Neilos Kerameus and the Synod examine at the request of Emperor Ioannes V Palaiologos again the case of the deposed imperial Protopapas Konstantinos Kabasilas and confirm his deposition	7
2792	MM II 60 (Nr. 361/5)	1385/ Beginning of 1386	Neilos Kerameus and the Synod reject the request of Emperor Ioannes V Palaiologos to allow the deposed imperial Protopapas Konstantinos Kabasilas the wearing of priestly regalia and the exercise of some priestly activities, as uncanonical	7
2796	MM II 71–74 (Nr. 370)	March 1386	Neilos Kerameus and the Synod confirm for Metropolitan Antonios of Gotthia the terms of the division of the area of Kinsansus between Cherson and Gotthia and take measures for the case that the Metropolitan of Cherson Thaddaios tries to disrupt the scheme again	8

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2819	MM II 77–79 (Nr. 374)	Beginning of May 1387	Neilos Kerameus and the Synod rehabilitate the Metropolitan Matthaïos Phakrases of Serres and declare the charges collected against him by the former Patriarch Makarios null and void	4
2820	MM II 96 (Nr. 390/1)	20. or 27. May 1387	Neilos Kerameus and the Synod discuss the solution of the dispute between the Metropolitan Dionysios of Smyrna and the Metropolitan N. N. of Ephesus over the rights in Ambrüla	8
2822	MM II 98–99 (Nr. 393)	29. May 1387	Neilos Kerameus and the Synod allow Metropolitan Kyprianos of Lithuania and Little Russia, who is under indictment, to leave Constantinople for a year under certain conditions for carrying out a mission for Emperor Ioannes V Palaiologos	8
2823	MM II 99–102 (Nr. 395/1)	June 1387	Neilos Kerameus and the Synod declare the deacon Ioannes-Joseph, who had been ordained by Metropolitan Alexios of Nikaia, unworthy of the priesthood and deposed	7
2826	MM II 103–106 (Nr. 397)	Sept. 1387	Neilos Kerameus and the Synod at the request of the Metropolitan Myron of Ephesos degrade the Metropoleis Pyrgion and Pergamon to the rank of bishoprics and put them under the control of the Metropolis Ephesos	12
2829	MM II 108–111 (Nr. 399)	Nov. 1387	Neilos Kerameus and the Synod appoint the priest monk and confessor Matthaïos as Metropolitan of Kyzikos and give to him the Metropolis of Chalcedon, with all its rights as Epidosis; the patriarch grants him in addition the patriarchal rights in Hyrtakion and the administration of all patriarchal rights in Hellespont and Bithynia	11

Table 3: Number of synodal sessions visited by the individual hierarchs between September 1379 and November 1387

Number of synodal sessions	Hierarch
26	PATRIARCH NEILOS KERAMEUS (PLP 11648)
20	Anthimos of Ungroblachia (PLP 13811)
14	Isidoros Glabas of Thessalonike (PLP 4233)
14	Sebasteianos of Ioannina/Kyzikos (PLP 25063)
13	Alexios of Varna/Nikaia (PLP 614)
12	Ioseph of Herakleia (PLP 9030)
12	Ioseph of Monembasia (PLP 9036)
11	Michael of Amaseia (PLP 19062)
9	Paulos of Derkos (PLP 22119)
9	Makarios of Nikomedeia (PLP 16268)
8	Makarios of Laodikeia (PLP 16262)
8	Ioakeim of Pontoherakleia (PLP 8368)
8	Matthaïos of Adrianupolis (PLP 17363)
6	Theophanes of Nikaia (PLP 7615)
6	Gregorios of Chama (in Syria; PLP 4548)
6	Neilos of Sozopolis (PLP 20045)
5	Poimen of Russia (PLP 23459)
5	AB Ioseph of Anchialos (PLP 8986)
5	Theodosios of Gotthia (PLP 7158)
4	Matthaïos of Myra (PLP 17368)
4	N. N. of Ephesos (PREISER-KAPPELLER, Episkopat 111)
4	Matthaïos Phakrases of Serrhai (PLP 29584)
4	Nikandros of Ganos (PLP 20248)
4	Matthaïos of Kernitza/Ioannina (PLP 17364)
3	Theoktistos of Sugdaia (PLP 7493)
3	AB N. N. of Lemnos (PREISER-KAPPELLER, Episkopat 243)
3	N. N. of Keltzene (PREISER-KAPPELLER, Episkopat 184)
3	Chariton of Ungroblachia (PLP 30649)
3	N. N. of Ikonion (PREISER-KAPPELLER, Episkopat 163)
2	Kyprianos of Russia (PLP 13925)
2	Ioseph of Derkos (PLP 9028)
2	Antonios of Mesembria (PLP 1099)
2	N. N. of Zekchia (PREISER-KAPPELLER, Episkopat 486)
1	Polykarpos of Adrianupolis (PLP 23515)
1	Theophilos of Perge and Attaleia (PLP 7644)
1	Markos of Ainos (PLP 17058)
1	N. N. of Palaiai Patrai (PREISER-KAPPELLER, Episkopat 334)
1	N. N. (Damianos?) of Philippupolis (PREISER-KAPPELLER, Episkopat 364)
1	Thaddaios of Cherson (PLP 7002)
1	N. N. of Lakedaimonia (PREISER-KAPPELLER, Episkopat 222)
1	N. N. of Staurupolis (PREISER-KAPPELLER, Episkopat 425)
1	N. N. of Kotyaeion (PREISER-KAPPELLER, Episkopat 203)

1	N. N. of Varna (PREISER-KAPPELLER, Episkopat 57)
1	N. N. of Kerasus (PREISER-KAPPELLER, Episkopat 185)
1	N. N. of Mesembria (PREISER-KAPPELLER, Episkopat 266)
1	B N. N. (Theophanes?) of Athyra (PREISER-KAPPELLER, Episkopat 145)

Table 4: The degree of the individual hierarchs within the network of synodal interaction, 1379-1387

Rank	Vertexnr.	Degree	Id
1	46	43	PATRIARCH NEILOS KERAMEUS
2	2	37	Ioseph of Herakleia
3	15	35	Anthimos of Ungroblachia
4	13	33	Alexios of Varna/Nikaia
5	6	31	Sebasteianos of Ioannina/Kyzikos
6	3	30	Isidoros of Thessalonike
7	7	30	Michael of Amaseia
8	5	27	Matthaios of Adrianupolis
9	33	27	Ioseph of Monembasia
10	11	24	Paulos of Derkos
11	9	24	Ioakeim of Pontoherakleia
12	23	23	Makarios of Laodikeia
13	18	22	EB Ioseph of Anchialos
14	36	22	Makarios of Nikomedeia
15	30	21	Theoktistos of Sugdaia
16	12	21	Gregorios of Chama
17	19	19	Poimen of Russia
18	1	18	Theophanes of Nikaia
19	8	18	Neilos of Sozopolis
20	39	17	Matthaios Phakrases of Serres
21	27	15	Theodosios of Gotthia
22	22	15	EB N. N. of Lemnos
23	43	15	Ioseph of Derkos
24	20	15	Antonios of Mesembria
25	40	15	Nikandros of Ganos
26	17	15	Matthaios of Kernitza/Ioannina
27	14	14	Chariton of Ungroblachia
28	16	14	N. N. of Keltzene
29	38	13	N. N. of Ephesos
30	41	12	N. N. (Damianos?) of Philippupolis
31	42	12	N. N. of Lakedaimonia
32	32	11	Matthaios of Myra
33	45	11	N. N. of Mesembria
34	44	11	N. N. of Staurupolis
35	25	11	Markos of Ainos
36	28	11	N. N. of Ikonion
37	24	11	Theophilos of Perge and Attaleia
38	4	10	Polykarpos of Adrianupolis
39	10	10	Kyprianos of Russia
40	21	10	N. N. of Varna
41	35	9	B N. N. (Theophanes?) of Athyra
42	34	9	N. N. of Kerasus
43	31	9	N. N. of Zekchia
44	29	8	Thaddaios of Cherson
45	37	8	N. N. of Palaiai Patrai
46	26	6	N. N. of Kotyaeion

Table 5: The number of synodal interaction links of each individual hierarch

Rank	Vertexnr.	Value	Id
1	46	206.0000000	PATRIARCH NEILOS KERAMEUS
2	15	156.0000000	Anthimos of Ungroblachia
3	3	127.0000000	Isidoros of Thessalonike
4	6	126.0000000	Sebasteianos of Ioannina/Kyzikos
5	13	124.0000000	Alexios of Varna/Nikaia
6	2	112.0000000	Ioseph of Herakleia
7	7	100.0000000	Michael of Amaseia
8	11	91.0000000	Paulos of Derkos

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9	33	91.0000000	Ioseph of Monembasia
10	36	72.0000000	Makarios of Nikomedeia
11	5	66.0000000	Matthaios of Adrianupolis
12	9	65.0000000	Ioakeim of Pontoherakleia
13	1	63.0000000	Theophanes of Nikaia
14	8	63.0000000	Neilos of Sozopolis
15	23	55.0000000	Makarios of Laodikeia
16	18	55.0000000	EB Ioseph of Anchialos
17	12	49.0000000	Gregorios of Chama
18	17	43.0000000	Matthaios of Kernitza/Ioannina
19	19	40.0000000	Poimen of Russia
20	39	39.0000000	Matthaios Phakrases of Serres
21	40	35.0000000	Nikandros of Ganos
22	14	34.0000000	Chariton of Ungroblachia
23	16	34.0000000	N. N. of Keltzene
24	27	33.0000000	Theodosios of Gotthia
25	30	31.0000000	Theoktistos of Sugdaia
26	38	30.0000000	N. N. of Ephesos
27	22	24.0000000	EB N. N. of Lemnos
28	32	24.0000000	Matthaios of Myra
29	43	23.0000000	Ioseph of Derkos
30	20	21.0000000	Antonios of Mesembria
31	28	19.0000000	N. N. of Ikonion
32	10	19.0000000	Kyprianos of Russia
33	31	14.0000000	N. N. of Zekchia
34	42	12.0000000	N. N. of Lakedaimonia
35	41	12.0000000	N. N. (Damianos?) of Philippupolis
36	44	11.0000000	N. N. of Staurupolis
37	25	11.0000000	Markos of Ainos
38	24	11.0000000	Theophilos of Perge and Attaleia
39	45	11.0000000	N. N. of Mesembria
40	21	10.0000000	N. N. of Varna
41	4	10.0000000	Polykarpos of Adrianupolis
42	34	9.0000000	N. N. of Kerasus
43	35	9.0000000	B N. N. (Theophanes?) of Athyra
44	29	8.0000000	Thaddaios of Cherson
45	37	8.0000000	N. N. of Palaiai Patrai
46	26	6.0000000	N. N. of Kotyaeion
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<b>Sum</b>		<b>2212.0000000</b>	

Table 6: The betweenness of the individual hierarchs within the network of synodal interaction, 1379-1387

Rank	Vertexnr.	Betweenness	Id
-----			
1	46	0.1334812	PATRIARCH NEILOS KERAMEUS
2	2	0.0887505	Ioseph of Herakleia
3	15	0.0638142	Anthimos of Ungroblachia
4	13	0.0525348	Alexios of Varna/Nikaia
5	6	0.0372273	Sebasteianos of Ioannina/Kyzikos
6	3	0.0337549	Isidoros of Thessalonike
7	7	0.0322325	Michael of Amaseia
8	33	0.0311243	Ioseph of Monembasia
9	5	0.0259736	Matthaios of Adrianupolis
10	23	0.0232097	Makarios of Laodikeia
11	30	0.0169565	Theoktistos of Sugdaia
12	11	0.0139668	Paulos of Derkos
13	12	0.0125598	Gregorios of Chama
14	9	0.0122011	Ioakeim of Pontoherakleia
15	36	0.0107027	Makarios of Nikomedeia
16	18	0.0076894	EB Ioseph of Anchialos
17	27	0.0070799	Theodosios of Gotthia
18	19	0.0068268	Poimen of Russia
19	22	0.0029357	EB N. N. of Lemnos
20	1	0.0027718	Theophanes of Nikaia
21	8	0.0027718	Neilos of Sozopolis
22	39	0.0026608	Matthaios Phakrases of Serres
23	28	0.0018727	N. N. of Ikonion
24	20	0.0018578	Antonios of Mesembria

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25	32	0.0014490	Matthaios of Myra
26	40	0.0012443	Nikandros of Ganos
27	43	0.0011693	Ioseph of Derkos
28	38	0.0006397	N. N. of Ephesos
29	31	0.0005051	N. N. of Zekchia
30	17	0.0003391	Matthaios of Kernitza/Ioannina
31	14	0.0000000	Chariton of Ungroblachia
32	29	0.0000000	Thaddaios of Cherson
33	42	0.0000000	N. N. of Lakedaimonia
34	41	0.0000000	N. N. (Damianos?) of Philippupolis
35	37	0.0000000	N. N. of Palaiai Patrai
36	44	0.0000000	N. N. of Staurupolis
37	21	0.0000000	N. N. of Varna
38	10	0.0000000	Kyprianos of Russia
39	4	0.0000000	Polykarpos of Adrianupolis
40	24	0.0000000	Theophilos of Perge and Attaleia
41	25	0.0000000	Markos of Ainos
42	35	0.0000000	B N. N. (Theophanes?) of Athyra
43	26	0.0000000	N. N. of Kotyaeion
44	45	0.0000000	N. N. of Mesembria
45	34	0.0000000	N. N. of Kerasus
46	16	0.0000000	N. N. of Keltzene

Table 7: The clustering coefficient of individual hierarch within the network, 1379-1387

Rank	Vertex	Value	Id
1	14	1.0000000	Chariton of Ungroblachia
2	29	1.0000000	Thaddaios of Cherson
3	26	1.0000000	N. N. of Kotyaeion
4	25	1.0000000	Markos of Ainos
5	24	1.0000000	Theophilos of Perge and Attaleia
6	42	1.0000000	N. N. of Lakedaimonia
7	45	1.0000000	N. N. of Mesembria
8	44	1.0000000	N. N. of Staurupolis
9	10	1.0000000	Kyprianos of Russia
10	21	1.0000000	N. N. of Varna
11	41	1.0000000	N. N. (Damianos?) of Philippupolis
12	4	1.0000000	Polykarpos of Adrianupolis
13	37	1.0000000	N. N. of Palaiai Patrai
14	35	1.0000000	B N. N. (Theophanes?) of Athyra
15	34	1.0000000	N. N. of Kerasus
16	16	1.0000000	N. N. of Keltzene
17	17	0.9619048	Matthaios of Kernitza/Ioannina
18	38	0.9230769	N. N. of Ephesos
19	31	0.9166667	N. N. of Zekchia
20	43	0.8952381	Ioseph of Derkos
21	40	0.8857143	Nikandros of Ganos
22	20	0.8476190	Antonios of Mesembria
23	1	0.8366013	Theophanes of Nikaia
24	8	0.8366013	Neilos of Sozopolis
25	32	0.8363636	Matthaios of Myra
26	39	0.8235294	Matthaios Phakrases of Serres
27	22	0.7904762	EB N. N. of Lemnos
28	28	0.7818182	N. N. of Ikonion
29	18	0.7186147	EB Ioseph of Anchialos
30	19	0.7017544	Poimen of Russia
31	36	0.6666667	Makarios of Nikomedeia
32	9	0.6630435	Ioakeim of Pontoherakleia
33	11	0.6557971	Paulos of Derkos
34	12	0.6476190	Gregorios of Chama
35	27	0.6380952	Theodosios of Gotthia
36	30	0.6285714	Theoktistos of Sugdaia
37	5	0.5726496	Matthaios of Adrianupolis
38	7	0.5540230	Michael of Amaseia
39	3	0.5494253	Isidoros of Thessalonike
40	33	0.5441595	Ioseph of Monembasia
41	23	0.5415020	Makarios of Laodikeia
42	6	0.5247312	Sebasteianos of Ioannina/Kyzikos



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43	13	0.5132576	Alexios of Varna/Nikaia
44	15	0.4554622	Anthimos of Ungroblachia
45	2	0.4294294	Ioseph of Herakleia
46	46	0.3864895	PATRIARCH NEILOS KERAMEUS

Table 8: The number of joint synodal sessions of two hierarchs, 1379-1387 (105 highest values)

Rank	Line	Value	Line-Id
1	15-46	20.00000	Anthimos of Ungroblachia-PATRIARCH NEILOS KERAMEUS
2	3-46	14.00000	Isidoros of Thessalonike-PATRIARCH NEILOS KERAMEUS
3	33-46	12.00000	Ioseph of Monembasia-PATRIARCH NEILOS KERAMEUS
4	6-15	12.00000	Sebasteianos of Ioannina/Kyzikos-Anthimos of Ungroblachia
5	6-46	12.00000	Sebasteianos of Ioannina/Kyzikos-PATRIARCH NEILOS KERAMEUS
6	13-46	11.00000	Alexios of Varna/Nikaia-PATRIARCH NEILOS KERAMEUS
7	6-13	10.00000	Sebasteianos of Ioannina/Kyzikos-Alexios of Varna/Nikaia
8	2-46	10.00000	Ioseph of Herakleia-PATRIARCH NEILOS KERAMEUS
9	6-7	9.00000	Sebasteianos of Ioannina/Kyzikos-Michael of Amaseia
10	3-33	9.00000	Isidoros of Thessalonike-Ioseph of Monembasia
11	7-46	9.00000	Michael of Amaseia-PATRIARCH NEILOS KERAMEUS
12	36-46	9.00000	Makarios of Nikomedeia-PATRIARCH NEILOS KERAMEUS
13	33-36	9.00000	Ioseph of Monembasia-Makarios of Nikomedeia
14	3-36	9.00000	Isidoros of Thessalonike-Makarios of Nikomedeia
15	2-15	9.00000	Ioseph of Herakleia-Anthimos of Ungroblachia
16	6-9	8.00000	Sebasteianos of Ioannina/Kyzikos-Ioakeim of Pontoherakleia
17	3-15	8.00000	Isidoros of Thessalonike-Anthimos of Ungroblachia
18	6-11	8.00000	Sebasteianos of Ioannina/Kyzikos-Paulos of Derkos
19	5-46	8.00000	Matthaïos of Adrianupolis-PATRIARCH NEILOS KERAMEUS
20	13-15	8.00000	Alexios of Varna/Nikaia-Anthimos of Ungroblachia
21	2-6	8.00000	Ioseph of Herakleia-Sebasteianos of Ioannina/Kyzikos
22	15-23	8.00000	Anthimos of Ungroblachia-Makarios of Laodikeia
23	3-13	8.00000	Isidoros of Thessalonike-Alexios of Varna/Nikaia
24	7-13	8.00000	Michael of Amaseia-Alexios of Varna/Nikaia
25	23-46	8.00000	Makarios of Laodikeia-PATRIARCH NEILOS KERAMEUS
26	2-11	7.00000	Ioseph of Herakleia-Paulos of Derkos
27	7-15	7.00000	Michael of Amaseia-Anthimos of Ungroblachia
28	11-13	7.00000	Paulos of Derkos-Alexios of Varna/Nikaia
29	2-13	7.00000	Ioseph of Herakleia-Alexios of Varna/Nikaia
30	11-15	7.00000	Paulos of Derkos-Anthimos of Ungroblachia
31	11-46	7.00000	Paulos of Derkos-PATRIARCH NEILOS KERAMEUS
32	1-11	6.00000	Theophanes of Nikaia-Paulos of Derkos
33	9-13	6.00000	Ioakeim of Pontoherakleia-Alexios of Varna/Nikaia
34	8-13	6.00000	Neilos of Sozopolis-Alexios of Varna/Nikaia
35	3-6	6.00000	Isidoros of Thessalonike-Sebasteianos of Ioannina/Kyzikos
36	6-8	6.00000	Sebasteianos of Ioannina/Kyzikos-Neilos of Sozopolis
37	7-9	6.00000	Michael of Amaseia-Ioakeim of Pontoherakleia
38	2-3	6.00000	Ioseph of Herakleia-Isidoros of Thessalonike
39	7-11	6.00000	Michael of Amaseia-Paulos of Derkos
40	9-15	6.00000	Ioakeim of Pontoherakleia-Anthimos of Ungroblachia
41	8-11	6.00000	Neilos of Sozopolis-Paulos of Derkos
42	9-46	6.00000	Ioakeim of Pontoherakleia-PATRIARCH NEILOS KERAMEUS
43	1-13	6.00000	Theophanes of Nikaia-Alexios of Varna/Nikaia
44	15-33	6.00000	Anthimos of Ungroblachia-Ioseph of Monembasia
45	1-6	6.00000	Theophanes of Nikaia-Sebasteianos of Ioannina/Kyzikos
46	19-46	5.00000	Poimen of Russia-PATRIARCH NEILOS KERAMEUS
47	3-19	5.00000	Isidoros of Thessalonike-Poimen of Russia
48	2-7	5.00000	Ioseph of Herakleia-Michael of Amaseia
49	18-46	5.00000	EB Ioseph of Anchialos-PATRIARCH NEILOS KERAMEUS
50	2-8	5.00000	Ioseph of Herakleia-Neilos of Sozopolis
51	3-7	5.00000	Isidoros of Thessalonike-Michael of Amaseia
52	5-33	5.00000	Matthaïos of Adrianupolis-Ioseph of Monembasia
53	5-36	5.00000	Matthaïos of Adrianupolis-Makarios of Nikomedeia
54	1-2	5.00000	Theophanes of Nikaia-Ioseph of Herakleia
55	6-18	5.00000	Sebasteianos of Ioannina/Kyzikos-EB Ioseph of Anchialos
56	27-46	5.00000	Theodosios of Gotthia-PATRIARCH NEILOS KERAMEUS
57	15-18	5.00000	Anthimos of Ungroblachia-EB Ioseph of Anchialos
58	3-5	5.00000	Isidoros of Thessalonike-Matthaïos of Adrianupolis
59	1-8	5.00000	Theophanes of Nikaia-Neilos of Sozopolis
60	15-27	5.00000	Anthimos of Ungroblachia-Theodosios of Gotthia
61	7-18	5.00000	Michael of Amaseia-EB Ioseph of Anchialos
62	3-11	5.00000	Isidoros of Thessalonike-Paulos of Derkos
63	13-17	4.00000	Alexios of Varna/Nikaia-Matthaïos of Kernitza/Ioannina
64	12-23	4.00000	Gregorios of Chama-Makarios of Laodikeia
65	32-46	4.00000	Matthaïos of Myra-PATRIARCH NEILOS KERAMEUS
66	11-18	4.00000	Paulos of Derkos-EB Ioseph of Anchialos
67	15-32	4.00000	Anthimos of Ungroblachia-Matthaïos of Myra
68	3-38	4.00000	Isidoros of Thessalonike-N. N. of Ephesos

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69	19-36	4.00000	Poimen of Russia-Makarios of Nikomedeia
70	19-33	4.00000	Poimen of Russia-Ioseph of Monembasia
71	3-8	4.00000	Isidoros of Thessalonike-Neilos of Sozopolis
72	36-38	4.00000	Makarios of Nikomedeia-N. N. of Ephesos
73	40-46	4.00000	Nikandros of Ganos-PATRIARCH NEILOS KERAMEUS
74	3-39	4.00000	Isidoros of Thessalonike-Matthaios Phakrases of Serres
75	1-15	4.00000	Theophanes of Nikaia-Anthimos of Ungroblachia
76	15-19	4.00000	Anthimos of Ungroblachia-Poimen of Russia
77	33-39	4.00000	Ioseph of Monembasia-Matthaios Phakrases of Serres
78	6-17	4.00000	Sebasteianos of Ioannina/Kyzikos-Matthaios of Kernitza/Ioann.
79	5-13	4.00000	Matthaios of Adrianupolis-Alexios of Varna/Nikaia
80	38-46	4.00000	N. N. of Ephesos-PATRIARCH NEILOS KERAMEUS
81	39-46	4.00000	Matthaios Phakrases of Serres-PATRIARCH NEILOS KERAMEUS
82	36-40	4.00000	Makarios of Nikomedeia-Nikandros of Ganos
83	3-40	4.00000	Isidoros of Thessalonike-Nikandros of Ganos
84	5-39	4.00000	Matthaios of Adrianupolis-Matthaios Phakrases of Serres
85	5-40	4.00000	Matthaios of Adrianupolis-Nikandros of Ganos
86	36-39	4.00000	Makarios of Nikomedeia-Matthaios Phakrases of Serres
87	8-46	4.00000	Neilos of Sozopolis-PATRIARCH NEILOS KERAMEUS
88	33-40	4.00000	Ioseph of Monembasia-Nikandros of Ganos
89	33-38	4.00000	Ioseph of Monembasia-N. N. of Ephesos
90	12-46	4.00000	Gregorios of Chama-PATRIARCH NEILOS KERAMEUS
91	9-11	4.00000	Ioakeim of Pontoherakleia-Paulos of Derkos
92	13-18	4.00000	Alexios of Varna/Nikaia-EB Ioseph of Anchialos
93	1-7	4.00000	Theophanes of Nikaia-Michael of Amaseia
94	2-23	4.00000	Ioseph of Herakleia-Makarios of Laodikeia
95	1-3	4.00000	Theophanes of Nikaia-Isidoros of Thessalonike
96	17-46	4.00000	Matthaios of Kernitza/Ioannina-PATRIARCH NEILOS KERAMEUS
97	1-46	4.00000	Theophanes of Nikaia-PATRIARCH NEILOS KERAMEUS
98	12-15	4.00000	Gregorios of Chama-Anthimos of Ungroblachia
99	11-17	4.00000	Paulos of Derkos-Matthaios of Kernitza/Ioannina
100	15-17	4.00000	Anthimos of Ungroblachia-Matthaios of Kernitza/Ioannina
101	6-12	4.00000	Sebasteianos of Ioannina/Kyzikos-Gregorios of Chama
102	3-17	4.00000	Isidoros of Thessalonike-Matthaios of Kernitza/Ioannina
103	23-32	4.00000	Makarios of Laodikeia-Matthaios of Myra
104	7-8	4.00000	Michael of Amaseia-Neilos of Sozopolis
105	8-15	4.00000	Neilos of Sozopolis-Anthimos of Ungroblachia

Table 9: The degree of the individual hierarchs within the network of synodal interaction, 1379-1380

Rank	Vertex	Degree	Id
1	1	20	Theophanes of Nikaia
2	7	20	Neilos of Sozopolis
3	12	20	Alexios of Varna/Nikaia
4	5	20	Sebasteianos of Ioannina/Kyzikos
5	10	20	Paulos of Derkos
6	6	19	Michael of Amaseia
7	2	19	Ioseph of Herakleia
8	3	18	Isidoros of Thessalonike
9	14	18	Anthimos of Ungroblachia
10	20	18	Markellos of Ikonion
11	16	18	Matthaios of Kernitza/Ioannina
12	9	18	Kyprianos of Russia
13	19	18	PATRIARCH NEILOS KERAMEUS
14	8	18	Ioakeim of Pontoherakleia
15	15	17	N. N. of Keltzene
16	13	16	Chariton of Ungroblachia
17	17	16	EB Ioseph of Anchialos
18	18	15	Poimen of Russia
19	21	12	Matthaios of Poimamenon/Adrianupolis
20	11	11	Gregorios of Chama
21	4	11	Polykarpos of Adrianupolis

Table 10: The betweenness of the individual hierarchs within the network of synodal interaction, 1379-1380

Rank	Vertex	Betweenness	Id
1	1	0.0152648	Theophanes of Nikaia
2	7	0.0152648	Neilos of Sozopolis
3	12	0.0152648	Alexios of Varna/Nikaia
4	5	0.0152648	Sebasteianos of Ioannina/Kyzikos

5	10	0.0152648	Paulos of Derkos
6	8	0.0108180	Ioakeim of Pontoherakleia
7	6	0.0106715	Michael of Amaseia
8	2	0.0106715	Ioseph of Herakleia
9	20	0.0091729	Markellos of Ikonion
10	9	0.0087751	Kyprianos of Russia
11	14	0.0046215	Anthimos of Ungroblachia
12	3	0.0046215	Isidoros of Thessalonike
13	19	0.0046215	PATRIARCH NEILOS KERAMEUS
14	16	0.0046215	Matthaios of Kernitza/Ioannina
15	15	0.0038141	N. N. of Keltzene
16	13	0.0025140	Chariton of Ungroblachia
17	17	0.0010558	EB Ioseph of Anchialos
18	18	0.0003289	Poimen of Russia
19	11	0.0000000	Gregorios of Chama
20	21	0.0000000	Matthaios of Poimamenon/Adrianupolis
21	4	0.0000000	Polykarpos of Adrianupolis

Table 11: A benchmarking of the synodal network (1379–1387), a random network, and the synodal network (1355–1363)

Measure	Synodal network, 1379-1387	Random network	Synodal network, 1355-1363
Number of nodes	46	46	33
Density	0.397	0.40	0.6
Degree centralisation	0.58	0.18	0.425
Betweenness centralisation	0.12	0.01	0.049
Clustering coefficient	0.798	0.407	0.854

Fig. 1: Number of participants per synodal session between September 1379 and November 1387 (without the Patriarch)

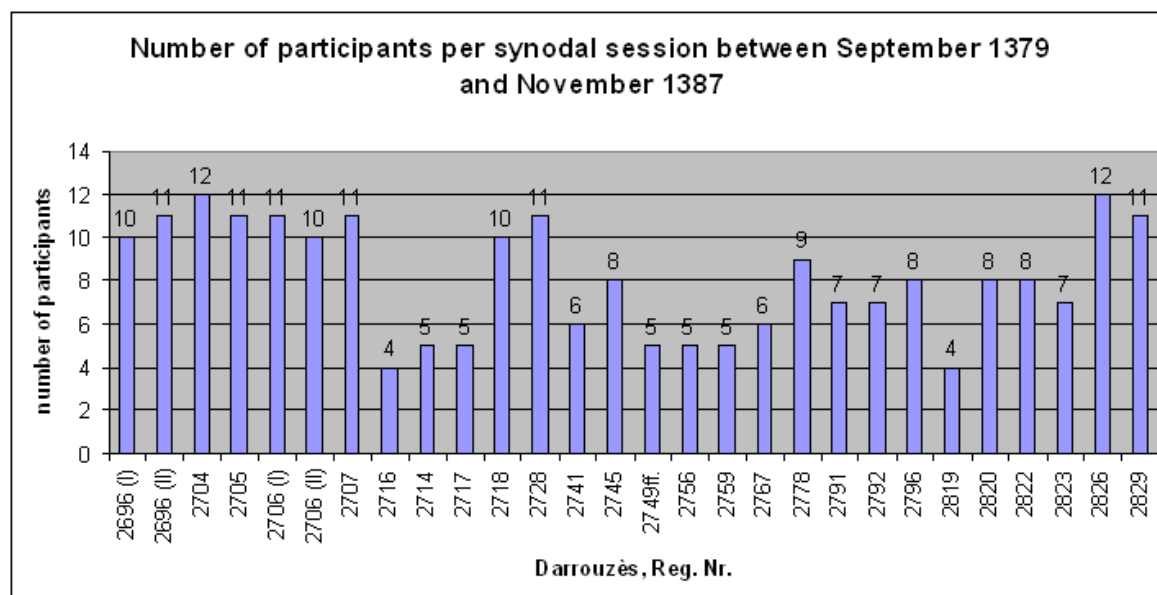


Fig. 2: Number of synodal sessions and degree of the hierarchs within the network, 1379–1387

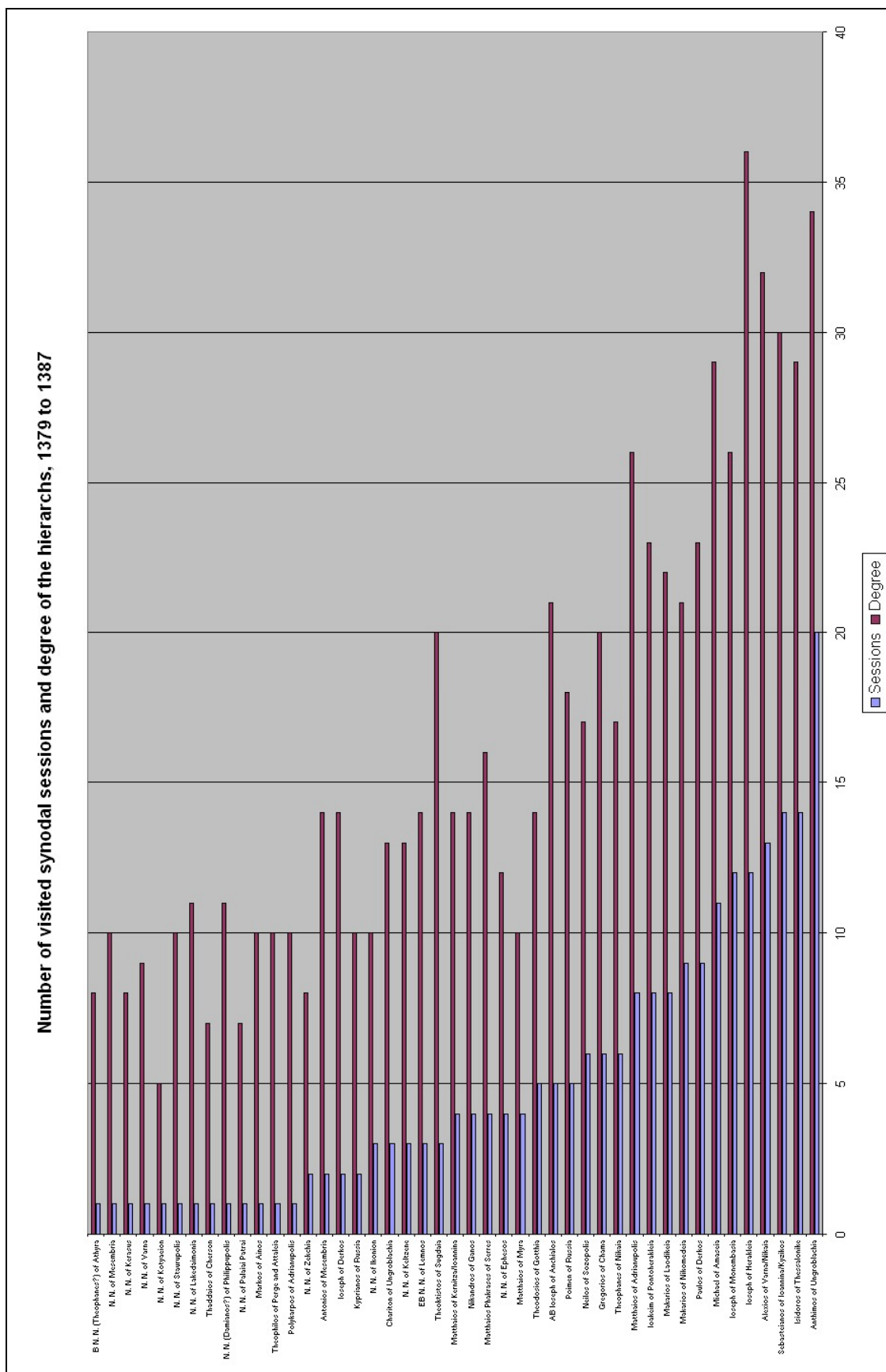




Fig. 4: The development of the degree of the seven Metropolitans with the highest degree-values at the beginning of the Patriarchate of Neilos Kerameus during the entire period (1379–1387)

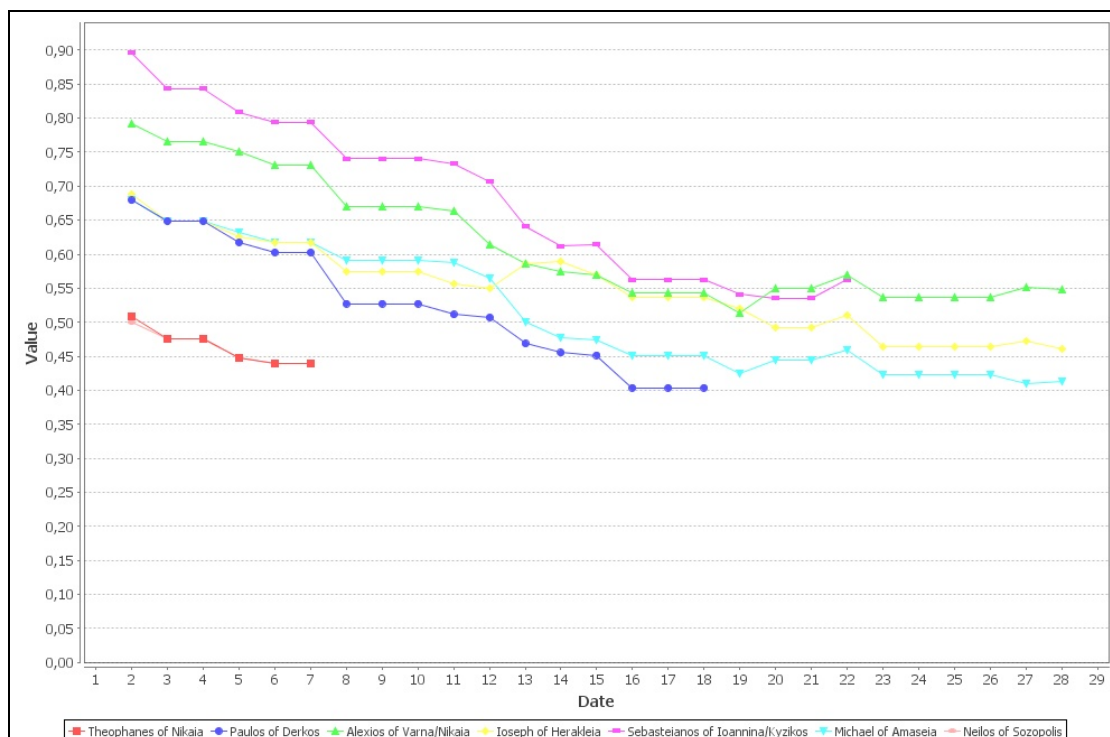


Fig. 5: The development of the degree of four Metropolitans who were ordained (or transferred) in the Patriarchate of Neilos Kerameus during the entire period (1379–1387)

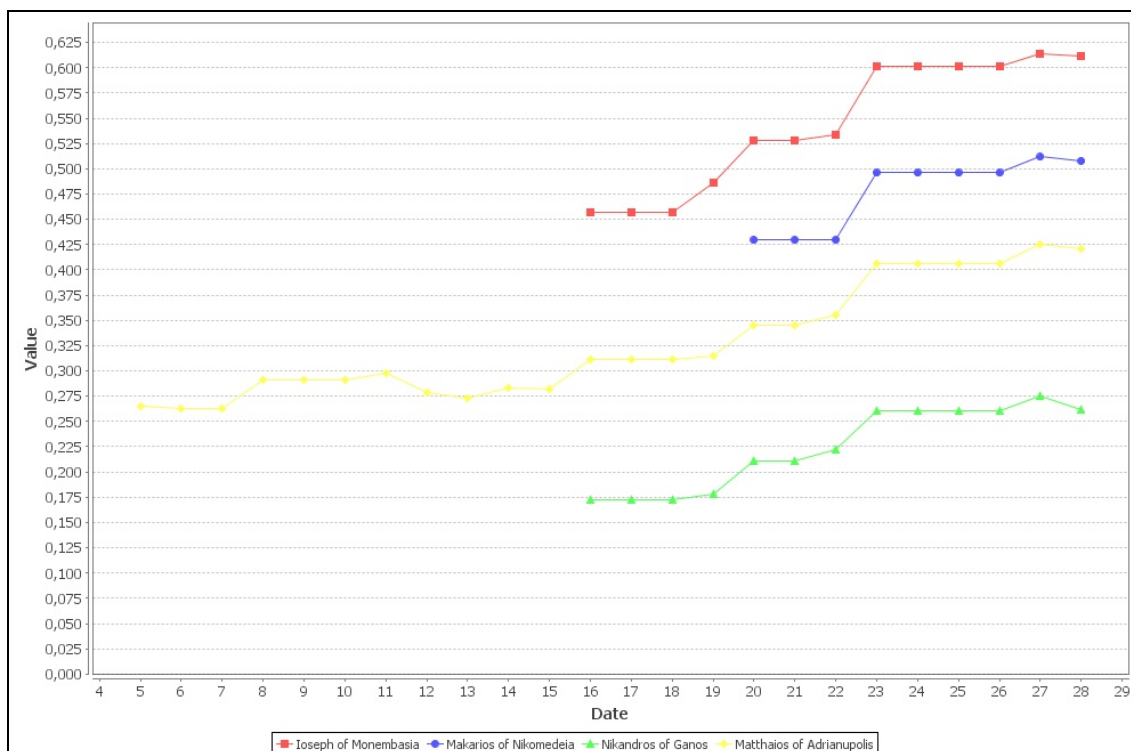


Fig. 6: The cumulative degree distribution of the synodal network, 1379-1387

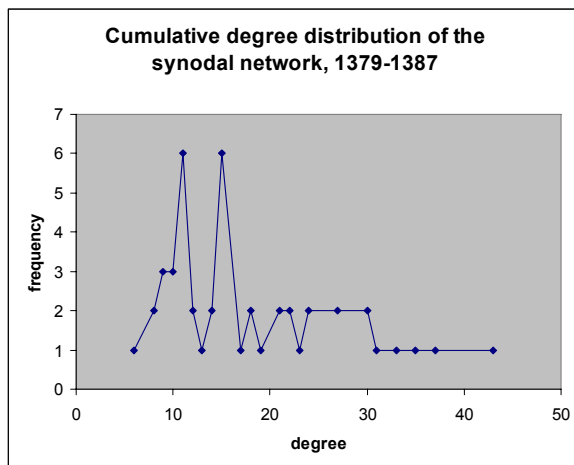


Fig. 7: The cumulative degree distribution of the random network (n = 46)

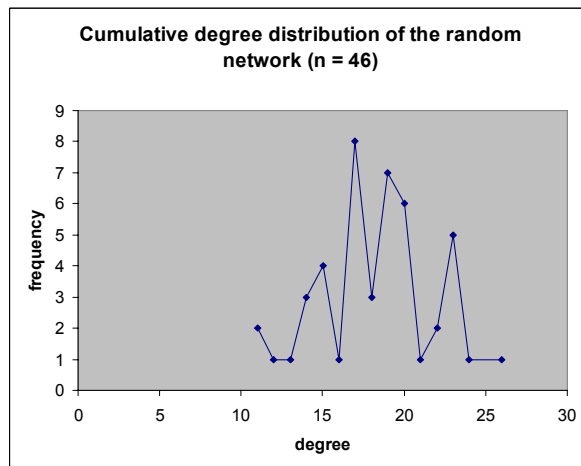


Fig. 8: Cumulative degree distribution of the synodal network, 1355-1363

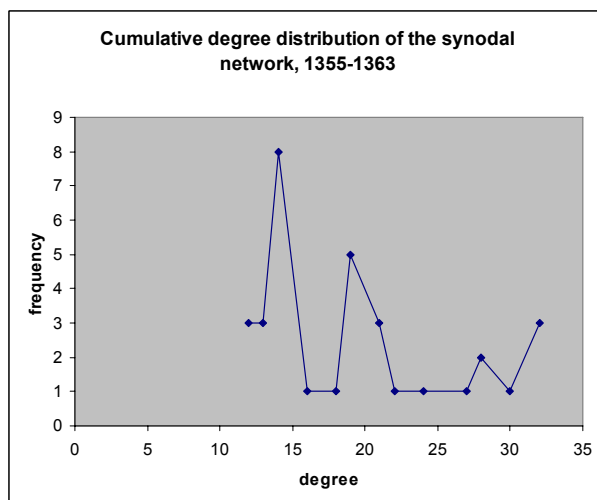


Fig. 9: „Ego-Network“ of Metropolitan Matthaios of Kernitza/Ioannina, 1376–1382 (continued arcs indicate relations of friendship or support, dotted arcs enmity or rivalry)

