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## „The Divine Fire in All Things“ – Orthodox Cosmology in Dialogue with Science<sup>1</sup>

### Abstract

Orthodox Cosmology has a great potential for the future dialogue between Theology and Science. According to Maximus Confessor's Cosmology, there is a „divine fire in the nature of all things“.

In this paper I analyse the meaning of a perichoretical worldview based on the Trinitarian paradigm of communion and communication. One of the most important questions concerns the link between matter and divine light. At the end I present some criteria for the Dialogue between Theology and Science.



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## Keywords

Orthodox Cosmology, Divine Fire, perichoretical worldview, interdisciplinary Dialogue, Maximus Confessor, Science, Spirituality

First of all I would like to express my deepest consideration and to thank Professor Dr. Dr. Dr. h.c. Welker for his kind invitation to this important and challenging conference. I am very grateful to the Templeton Foundation for the 2007 *Theological Award for a theological promise*. Dr. Murray mentioned in his speech that the Templeton Foundation is a *Foundation that seeks to transform lifes and cultures*. I would like to confirm his short definition because the Templeton Award changed my life too, my worldview. Thanks to this award I could give lectures in different countries: England, Finland, Russia, Australia, South Africa, USA and enlarge this way my own horizon.

## Introduction

In this short paper I would like to present some reflections regarding the Theology and Science Dialogue and to put up for discussion my ideas regarding the meaning of a *perichoretical worldview* as paradigmatic contribution to this dialogue. I will also try to show how divine fire, i.e. divine immanence in all things might be connected with information, i.e. with an informed universe.

## 1 Fire as cosmic reality and as metaphor for divine presence

In the history of mankind fire played always a significant role. Throughout the centuries there has been such an *intimate connection of fire with the cultural growth of humanity*, so that a *theological analysis of fire* could give some insights on the fundamental relevance not only in tracing the *history of human evolution* but also in the *dialogue of theology with science*. Without the ability to control fire the evolution of the human being such as it was would be unconceivable. Fire was an *essential survival tool for humans*.

The metaphor of fire as *source of energy* and *starting point of a dynamic complexity* might be used both for explanation of “big bang” and of the expansion of the universe. 13.7 billion years ago “the very early universe was highly energetic and for a while transformations took place with breathtaking rapidity”, underlined Sir John Polkinghorne.<sup>2</sup> “For several hundred thousand more years the universe was (...) a kind of cosmic plasma”.<sup>3</sup> Our physical world is an evolving, complex and dynamic system “from its elementary particles to the observable limits of the galactic cluster (...) Nothing remains stationary in nature; everything is in perpetual change, motion, and transformation”.<sup>4</sup>

Maximus Confessor, one of the greatest Church Fathers, used the metaphor of fire in order to describe the divine presence at the heart of all being. According to him there is a *divine fire in all things*: “*the ineffable, supernatural and divine fire is present*,

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<sup>2</sup> J. Polkinghorne, *Science and Religion in Quest of Truth* (New Haven and London: Yale University Press, 2011), p. 47.

<sup>3</sup> *Idem*, p. 49.

<sup>4</sup> P. A. Ligomenides, *Scientific Knowledge as a Bridge to the Mind of God*, in: J. Polkinghorne (ed.), *The Trinity and an Entangled World. Relationality in Physical Science and Theology* (Grand Rapids, Michigan, Cambridge: Eerdmanns 2010), p. 74.

as in the (burning) bush, in the being of everything that exists".<sup>5</sup> This is an image both for *divine immanence in the world* and for the salvation of the universe through the uncreated light of God as well.

In the 7<sup>th</sup> century Maximus Confessor was the first theologian to introduce into Christology the concept of *περιχώρησις*<sup>6</sup> as mutual indwelling of divine and human nature in Christ. Prior to him in the 5<sup>th</sup> century Cyril of Alexandria compared the effect of incarnation with the *transformation of the iron through an intense fire*. The incandescent iron participates in the power of the fire.<sup>7</sup> For Maximus Confessor *incandescent iron* is a picture of the transformative power of love. Each movement of love is perichoretic like the air that becomes "enlightened by light and (like) the iron (that becomes) completely incandescent by fire".<sup>8</sup> Later, in the 15<sup>th</sup> century, the same metaphor of an incandescent iron was used by Martin Luther as an image of the salvific "perichoresis" between God and mankind.

One could speak about the *ecumenical character of fire* as irradiance of divine, creative and sustainable light. One of the most impressive irradiance of divine light is to be found in the

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<sup>5</sup> Maximus Confessor, *Ambigua*, 22a D, in: Andrew Louth, *Maximus the Confessor* (London, New York: Routledge 1996), p. 118.

<sup>6</sup> Vgl. C. A. Disandro, *Historia semántica de perikhóresis*, in: *Studia Patristica*, vol. XV, *Papers presented to the Seventh International Conference on Patristic Studies held in Oxford 1975*, edited by E. A. Liftingstone, *Texte und Untersuchungen zur Geschichte der althristlichen Literatur Band 128*, Akademie Verlag Berlin 1984, p. 444: "De aquí transcorre a través de San Gregorio Nazianzeno (+390) hasta la prosa de San Máximo Confesor (+662), quien parece dar el vocablo *perikhóresis* su ubicación semántica definitiva en tres direcciones: a – triadológica; b – Cristológica; c – en la teología de la pístis, o sea en la eclesiología".

<sup>7</sup> J. Gaillard, *Art. Feu*, in: M. Viller a.o. (Hg.), *Dictionnaire de Spiritualité ascétique et mystique. Doctrine et histoire*, (Paris: Beauchesne 1964), 1962, 250.

<sup>8</sup> *S. Maximi Confessoris, Ambiguorum liber, Patrologia Latina et Graeca*, J. P. Migne (ed.), Paris 1863, Tomus XCI, 1076a.

event of transfiguration of the Lord on mount Tabor. Jesus Christ irradiated or revealed the uncreated light of God as mystery of divine presence in the cosmic matter, so that Peter wished he could stay there forever. This divine fire in all things is correlated with *divine beauty* that overcomes boundaries. “Crossing boundaries (...) belongs the essence of the beautiful”.<sup>9</sup> *The divine fire as divine and dynamical beauty of the Trinitarian Perichoresis of love* “inflames desire, drawing one on into an endless *epektasis*, a stretching out toward an ever greater embrace with divine glory”.<sup>10</sup> “God is light” (1 John 1:5) and “every good gift (...) comes down from the Father of lights” (James 1:17). Humans are able of „perceiving light (the Son) from light (the Father) in light (the Holy Spirit)“ (Or. 31.3, PG 36, 136).<sup>11</sup>

The incomprehensible splendor of the divine light and beauty of the Trinitarian Creator remains the *gravitational center of all desires*: „Just as the sun (...) is itself the most beautiful of all visible things: just so is God (...) himself the highest of all objects of thought, in whom every desire finds its limit, beyond which it cannot pass” (Gregory of Nazianzus, Or. 21.1). The Orthodox concept of salvation culminates in illumination by the divinizing indwelling of God and his uncreated energies.

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<sup>9</sup> H. U. von Balthasar, *The Glory of the Lord: A Theological Aesthetics*, vol. 1, *Seeing the Form*, San Francisco, p. 216; cited by D. B. Hart, *The Beauty of the Infinite. The Aesthetics of Christian Truth* (Grand Rapids, Michigan: Eerdmanns 2003), p. 20.

<sup>10</sup> D. B. Hart, *The Beauty of the Infinite*, p. 20; p. 155: “The Christian understanding of beauty emerges (...) from the Christian understanding of God as a *perichoresis* of love, a dynamic coinherence of the three divine persons, whose life is eternally one of shared regard, delight, fellowship, feasting, and joy”; p. 190: According to St. Gregory of Nyssa “human nature’s perfection (τελειότης) is nothing but this endless desire for beauty and more beauty, this hunger for God” (*De vita Moysis* 1.10).”

<sup>11</sup> J. McGuckin, ‘Perceiving Light from Light in Light’ (Oration 31.3). *The Trinitarian Theology of Saint Gregory the Theologian*, in: *GOTR*, vol. 39, No. 1, 1994, pp. 31-32.

## 2 Trinitarian Paradigme of Communion and Communication

The Trinitarian understanding of the world as created by *the Father through the Son in the Holy Spirit* allows us to see everything marked by the wisdom of the divine Word and by the energetically presence of the Holy Spirit. The eternal and historical realities are fundamentally encoded with this *matrix of communication*. Like the eternal life that is communion and communication, biological existence depends on exchange of information:<sup>12</sup> “The dance of life in a biological cell involves a (...) complex and dynamic rationality, sustained by continual interactions between enzymes and proteins in processes of great intricacy”, said John Polkinghorne.<sup>13</sup>

*Maximus Confessor had the intuition of the fundamental character of relationality, confirmed nowadays in physical science.*<sup>14</sup> There is a “holistic connectivity in the physical world” that cannot be explained by a “purely atomistic” view of the world.<sup>15</sup> According to John Polkinghorne “it is not possible to describe the world of subatomic physics atomistically! Nature is intrinsically relational.”<sup>16</sup> Due to this intrinsic relationality, “democritan atomism is definitely dead”.<sup>17</sup>

The *relational ontology* of the world is based on “*trinitarian relationality*”, i.e. on the “perichoretic exchange of mutually

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<sup>12</sup> One could speak about a *growing in knowledge and being*. Human communication is based like human life on biochemical and neuropsychological communication.

<sup>13</sup> J. Polkinghorne, *The Demise of Democritus*, in: idem (ed.), *The Trinity and an Entangled World*, p. 1f.

<sup>13</sup> Idem, Introduction, in: idem (ed.), *The Trinity and an Entangled World*, p. 1.

<sup>14</sup> Idem, *The Demise of Democritus*, p. 1f.

<sup>15</sup> Idem, Introduction, in: idem (ed.), *The Trinity and an Entangled World*, p. vii.

<sup>16</sup> J. Polkinghorne, *The Demise of Democritus*, p. 6.

<sup>17</sup> *Ibidem*, p. 11.

interpenetrating love between the three divine Persons”.<sup>18</sup> “Trinitarian mutuality of perichoresis” means “unique relationship of (...) mutual interpenetration and exchange of love between the divine Persons”.<sup>19</sup>

### **3 “At its base, everything that ‘is’, is light” - Cosmic Light as expression of Trinitarian Love**

Dumitru Stăniloae, one of the major interpreters of Maximus Confessor, understood the divine fire in all things as creative *irradiance of God’s love*. Creation exists because the Trinitarian God as “supreme structure of love” wishes to share his overwhelming plenitude and fullness of existence with mankind. According to Stăniloae “love puts omnipotence in motion”.<sup>20</sup> The entire Holy Trinity is at work in creation, salvation and sanctification. “The Holy Trinity is the supreme mystery of existence. It explains everything, and nothing can be explained without it”.<sup>21</sup>

Creatio originalis, creatio continua and creatio nova are linked with each other and sustained by divine grace. As “unlimited plenitude” of Reason, of Love and of Light, God is the origin, the sustainer and the aim of creation. The causal existences such as we know it, comes from Creator, who is “force of goodness and harmony”<sup>22</sup>, the “ultimate meaning” that “fully satisfy the thirst of humans for ultimate fulfillment”.<sup>23</sup> “Supreme existence is supreme goodness”.<sup>24</sup> “There was a light that had no beginning,

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<sup>18</sup> J. Polkinghorne, Introduction, p. ix.

<sup>19</sup> Idem, The Demise of Democritus, p. 1.

<sup>20</sup> D. Stăniloae, The Holy Trinity. In the Beginning There was Love (Brookline, Massachusetts: Holy Cross Orthodox Press 2012), p. 44.

<sup>21</sup> Ibidem, p. xi.

<sup>22</sup> Ibidem, p. 8.

<sup>23</sup> D. Stăniloae, The Experience of God. Orthodox Dogmatic Theology (Brookline, Massachusetts: Holy Cross Orthodox Press 1998), p. 38.

<sup>24</sup> Idem, The Holy Trinity, p. 31.

which could bring all created lights into being through the words 'Let there be light!' All creation received existence in order to enhance the light, or the consciousness (...). At its base, everything that 'is', is light".<sup>25</sup> "Everything that exists has rationality or light in itself".<sup>26</sup> From the light of Jesus Christ occurs a "moving force" that "attracts creation into the eschatological condition".<sup>27</sup>

The eternal source of rationality and light in creation is the Trinitarian God. Stăniloae refers to St. Gregory of Nazianzus who described the Holy Trinity as "a single intermingling of light, which exists in three mutually connected Suns". This patristic view is present also in St. John of Damascus, who understood the Holy Trinity as "three suns cleaving to each other without separation and giving out light mingled and conjoined into one".<sup>28</sup>

Creation is a sacrament of communion, of shared light, of embodied or materialized divine love. "Matter is capable of being formed through the spirit."<sup>29</sup>

"It is equally miraculous how the body's organs are arranged out of collection of molecules: the heart, lungs, stomach, and the senses are all joined together in a body, and all serve the conscious purposes of the human subject. Through each of them flows the conscious unity of the same subject. (...) God must be present together with His handywork in this marvelous relationship".<sup>30</sup>

For Stăniloae Creation has an eternal meaning, because it is based on the *divine fire of love, i.e. of Trinitarian intersubjectivity. Where love is there is meaning. Where eternal love is there is the eternal light of meaning too.*

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<sup>25</sup> Ibidem, p. 5f.

<sup>26</sup> D. Stăniloae, *Iisus Hristos, Lumina lumii și îndumnezeitorul omului*, 28.

<sup>27</sup> Idem, *The Experience of God. Orthodox Dogmatic Theology*, p. 28.

<sup>28</sup> Idem, *The Holy Trinity*, p. 19f.

<sup>29</sup> Ibidem, p. 49.

<sup>30</sup> Ibidem, p. 51.

In his cosmic Christology Stăniloae described *True Reason* as being *one with love*<sup>31</sup>: “I am the light of the world. He who follows Me shall not walk in darkness, but have the light of life” (John 8:12). As power the Logos of God is also life and “as wisdom He is light and love”.<sup>32</sup> “I am the truth and the life” (John 14:6). The fullness of life is goodness and light of consciousness or of knowledge. *The entire material universe is imprinted by God’s wisdom and sustained through His Holy Spirit, who “was hovering over the face of the water” (Gen 1:2) at the beginning.*<sup>33</sup>

There is a divine fire in all things, because the entire creation is *sustained* by the uncreated energies of the Holy Spirit. This is the reason why Stăniloae understood the Pentecost as ultimate purpose of Trinitarian salvation. The matter of the universe can be sanctified, penetrated or transfigured by divine light. Stăniloae called this a “mystical materialism” and a mystery of the resurrected body. *The mystery of salvation is the mystery of God’s indwelling that transforms creation by the glory and beauty of his eternal interpersonal love. For an Orthodox Soteriology eschatologic pleroma means the living unity of interpersonal communion, common sharing of divine fire and light.*

#### 4 The fire in creation as medium of divine revelation

In the Old Testament we have many witnesses about the relationship between theophany and lightning events. For Israel the fire was a sign of divine presence, a main element of theophany, i.e. of divine holiness and splendor.<sup>34</sup> Fire in OT is both a created element (Eccl. 43, 5.21) and a sign of divine

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<sup>31</sup> Ibidem, p. 8.

<sup>32</sup> Ibidem, p. 15.

<sup>33</sup> Ibidem, p. 50.

<sup>34</sup> J. Gaillard, Art. Feu, p. 247.

presence as well. On the Mount Sinai Moses received the Ten Commandments accompanied by light-frightening phenomena: *Exodus 19, 18-19*: “Now Mount Sinai was wrapped in smoke because the Lord had descended on it in fire. The smoke of it went up like the smoke of a kiln, and the whole mountain trembled greatly. And as the sound of the trumpet grew louder and louder, Moses spoke, and God answered him in thunder.”

*Exodus 22, 18*: “Now when all the people saw the *thunder* and the *flashes of lightning* and the sound of the trumpet and the mountain smoking, the people were afraid and trembled, and they stood far off.”

On the Mount Horeb Moses encountered God in the burning bush. God “appeared to him in a *flame of fire out of the midst of a bush*. (...) The bush was burning, yet it was not consumed” And Moses said, ‘I will turn aside to see this great sight, why the bush is not burned.’ When the Lord saw that he turned aside to see, God called to him out of the bush” (Exodus 3, 2-4).

The religious experience on *Mount Sinai* and on *Mount Horeb* became part of the cultural and religious memory of Israel, that God the Lord spoke to his people “out of the midst of the fire” (Deut. 4, 12.15). The fire of the Lord protected and helped Israel during the exodus from Egypt by the nightly guiding “in a pillar of fire”:

*Exodus 13, 22*: “And the Lord went before them by day in a *pillar of cloud* to lead them along the way, and by night in a *pillar of fire* to give them light, that they might travel by day and by night.”

The same fire of God can also be a destructive, devouring fire (Ps. 50,3; 104,4.32; 144,5-6):

*Exodus 24, 17*: “Now the appearance of the glory of the Lord was like a devouring fire on the top of the mountain in the sight of the people of Israel”.

*Psalms 18, 8*: “Smoke went up from his nostrils, and *devouring fire from his mouth*; glowing coals flamed forth from him.”

*Psalms 29, 7*: “The voice of the Lord flashes forth flames of fire.”

*Psalm 77, 19*: “The crash of your thunder was in the whirlwind; your lightnings lighted up the world; the earth trembled and shook.”

The metaphor of *devouring fire* will become an eschatological motive of divine pedagogy (or terrorization of sinners) (Daniel 7, 9-12; Joel 1, 19-20; Joel 2, 3-5; Amos 4, 11; 5, 6; Isaiah 4,5-6; Marc 9, 48: “where their worm does not die and the fire is not quenched”; 2 Thess 1,8; Hebr 12, 29: “for our God is a consuming fire”).

The fire of God can purify the prophets like Isaiah 6, 6. The experience of *divine glory* is described by Hezekiel like the *brightness of fire* (Hezekiel 1, 27; 8, 2; 9,1-7).

## 5 Main Aspects of the Orthodox Spirituality as Spirituality of Light

Jesus Christ is called in Nicaenum Constantinopolitanum “God from God, *Light from Light* - *φῶς ἐκ φωτός*”. He came in the world in order “to cast fire on the earth” (Luke 12, 49). This fire is associated with the Holy Spirit, who as Spirit of Love, of Life and of Resurrection descended at Pentecost as “tongues of fire” (Act 2, 3-4). Saint John of the Cross calls the Holy Spirit “flame of love”.<sup>35</sup> The Holy Spirit is described in the hymn “Veni, Creator Spiritus” as “Fons vivus, ignis, caritas”.<sup>36</sup> He is called in the Orthodox Liturgy “Fire that proceeds from Fire” (πῦρ ἐκ πυρὸς προίον).<sup>37</sup>

According to the mystique of Hesychasm the human being is able to see the uncreated, taboric light and to become entirely like fire (γενεοῦ ὄλος πῦρ, Apophthegmata Patrum, PG 65, 229c).<sup>38</sup> The pursuit of happiness consists in the inner longing to

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<sup>35</sup> J. Gaillard, Art. Feu, p. 259.

<sup>36</sup> Ibidem, p. 258.

<sup>37</sup> Ibidem, p. 258.

<sup>38</sup> Ibidem, p. 265.

become theophor, i.e. a *burning bush of divine fire*, a personal bearer of divine love, beauty and wisdom, a “*flame of fire*” (Psalm 104, 4; Hebrews 1, 7). As *eikon tou Theou*, the human being was created with the ability to participate in divine glory (Chavod, Gloria resurrectionis).

Humans are defined to become a “living icon of the Holy Trinity”<sup>39</sup> an embodied presence of Trinitarian love. This is possible only by a mutual indwelling, by a perichoresis with the divine fire: “like the iron, that in contact with fire, becomes itself fire” (Nicolas Cabasilas).<sup>40</sup> Gregory of Nyssa spoke about a bright, luminous and *brilliant darkness* (λαμπρὸς γνόφος).<sup>41</sup> Human being can participate in the uncreated light of God, i.e. to touch the glowing and interpersonal infinity of God. There is a “burning vibration” in creation that seeks for the everlasting inhabitation of God as source of life and happiness. By inhabitation of God in creation the ocean<sup>42</sup> of divine love and glory (doxa) becomes more and more visible. God’s Glory, said Maximus, is a deifying fire.<sup>43</sup>

A fascinating image about the *cosmic fire in every living being* can be found in John Polkinghorne description of the “*stellar nucleogenesis*”: “Every atom of carbon in every living being was once inside a star, since the interior nuclear furnaces of the stars are the only place in the universe where this element can be made”.<sup>44</sup>

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<sup>39</sup> K. Ware, *The Holy Trinity: Model for Personhood-in-Relation*, in: John Polkinghorne (ed.), *The Trinity and an Entangled World*, p. 128.

<sup>40</sup> J. Gaillard, *Art. Feu*, p. 267.

<sup>41</sup> B. E. Daley, S. J., “Bright Darkness” and Christian Transformation. Gregory of Nyssa on the Dynamics of Mystical Union, in: M. J. Himes, S. J. Pope (eds.), *Finding God in All Things. Essay in honor of Michael J. Buckley, S.J.*, New York, 1996, p. 215f.

<sup>42</sup> See D. Stăniloae, *Dumnezeu este lumina* (1 Ioan 1, 5), in: *Ortodoxia*, XXVI, 1/1974, p. 76: Stăniloae speaks of God as „ocean of love and light”.

<sup>43</sup> *S. Maximi Confessoris, Ambiguorum Liber*, 1124 A; see Andrew Louth, *Maximus the Confessor*, p. 103.

<sup>44</sup> J. Polkinghorne, *Science and Religion in Quest of Truth*, p. 55.

## 6 Fire as symbol of an intrinsic rationality and dynamic complexity of the universe

Maximus Confessor understood God as “the beginning, the middle and the end of all things as their energy, for He is as Creator their beginning without beginning (ἀρχή ἀναρχος), their middle (μεσότης) as their Providence (προνοητής), and the end (μέλος) of all as their boundary (περιγραφή)”.<sup>45</sup> There is dynamic presence of God in his creation through his “logoi” of creation. Everything that is, *exists* in the field of resonance of the divine Logos through the architectural work of the Holy Spirit. We can know and see God through the logoi of creation. God exists in all “logoi” of creation as supreme Love. The logoi are divine purposes and wills in all beings and things. The Logos of God is the plenitude and fulfillment of all logoi of creation<sup>46</sup>, the “sun of righteousness” and savior of all thing.<sup>47</sup> In the incarnated Logos “sont comprises la generation des temps et des réalités qui sont dans le temps ainsi que le prolongement à l’infini de la vie des réalités qui par grâce sont au-delà des temps”.<sup>48</sup>

Hans Urs von Balthasar showed that for Maximus Confessor “Ontology and Cosmology are extended Christology, insofar as the hypostatical synthesis is the last and the first thought of God about Creation”.<sup>49</sup>

For Maximus Confessor the material universe is based on divine rationality (logoi) and permeated by the Spirit of God, who is

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<sup>45</sup> Maximus Confessor, ThEc I, 10, 1085-1088D; see C. N. Tsirpanlis, Introduction to Eastern Patristic Thought and Orthodox Theology (Collegeville, Minnesota: Liturgical Press 1991), p. 35.

<sup>46</sup> C. N. Tsirpanlis, Introduction to Eastern Patristic Thought and Orthodox Theology, p. 33.

<sup>47</sup> Maximus Confessor, Questions à Thalassios, p. 181.

<sup>48</sup> Ibidem, p. 227.

<sup>49</sup> H. U. von Balthasar, Kosmische Liturgie. Das Weltbild Maximus’ des Bekenner, zweite, völlig veränderte Auflage (Einsiedeln: Johannes-Verlag 1961), p. 204.

present in everything, so that nothing is empty of the Holy Spirit: “ἐν πᾶσιν ἀπλῶς ἐστι τὸ πνεῦμα τὸ ἅγιον”.<sup>50</sup>

## 6.1 St. Gregory Palamas as Theologian of Divine Light

As one of the main representatives of the hesychast spirituality, Palama is a theologian of light. For him the human being was created in order to participate in the uncreated light and glory of God. Knowledge of God means for him participation in the transformative, uncreated light of the Trinity, a movement accompanied by the inhabitation of the Trinity.<sup>51</sup> Palamas understood salvation as “divine illumination” (θειος φωτισμός)<sup>52</sup>, i.e. as immediate union with God: “through the Spirit, in the light of the Father, we see the Son as light”<sup>53</sup> and becomes united with his light and wisdom, “deviant tout entire lumière”<sup>54</sup>, “children of light” (Ephesians 5,8).<sup>55</sup> God is like a source of light: “πηγὴ φωτός”<sup>56</sup>, “who dwells in unapproachable light” (1 Timothy 6,16).<sup>57</sup>

According to his theology, the material universe is based on the “creative beauty” and “divine light”. This light is deifying (τὸ θεουργὸν φῶς), because it is an irradiation of the eternal, Trinitarian love.<sup>58</sup> Palamas spoke about *divine light as divine*,

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<sup>50</sup> <http://www.ellopos.net/elpenor/greek-texts/fathers/maximus-holy-spirit.asp?pg=2>.

<sup>51</sup> Grégoire Palamas, *Défense de saints hésychastes*. Introduction, texte critique, traduction et notes by J. Meyendorff, (Spicilegium Sacrum Lovaniense, Études et Documents, Fascicule 30, Louvain: Université Catholique, 1959), p. 74.

<sup>52</sup> Ibidem, p. 106f, 358.

<sup>53</sup> Ibidem, p. 440.

<sup>54</sup> Ibidem, p. 458.

<sup>55</sup> Ibidem, p. 482.

<sup>56</sup> Ibidem, p. 550.

<sup>57</sup> Ibidem, p. 580.

<sup>58</sup> Ibidem, pp. 116f, 154, 600.

*immaterial fire* that is at the very essence of things.<sup>59</sup> The “Fire of divine love”<sup>60</sup> is as a matter of fact the foundation and the reason of creation and salvation: “At the beginning of creation God said and light occurred; today he didn’t say but he became himself our light”.<sup>61</sup> Incarnation is connected in this view with the transformation of the world by divine glory, revealed on the mountain Tabor. “God is light, and in him is no darkness at all” (1 John 1,5). The supracosmic “sun of justice” (Maleachi 4,2) became light of the world, a light that is at the same time eschatological and transcends the universe.<sup>62</sup> “For God, who said, ‘Let light shine out of darkness,’ has shone in our hearts to give the light of the knowledge of the glory of God in the face of Jesus Christ.” (1 Cor 4,6).

Humans can become illuminated by divine wisdom, by the tongues of fire as tongues of the Holy Spirit. This *mysterious union* with God through his eternal light (τὸ ὑπὲρ αἰσθησιν φῶς) (énergie lumineuse)<sup>63</sup> is beyond imagination and transforms us in a “visible theophany” and makes us Christus-like (Ἡριστοειδώσιν).<sup>64</sup> “Lumière mystérieuse, inaccessible, immatérielle, créée, déifiante, éternelle, éclat de la nature divine, gloire de la Divinité, beauté du Royaume celeste, (...) lumière du siècle à venir”.<sup>65</sup>

## 6.2 Creation and Information

The relationship between *creation and information* can be perceived as a bridge for theology and science dialogue. In our

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<sup>59</sup> Ibidem, p. 636.

<sup>60</sup> Ibidem, pp. 158, 502: “Ténebre supralumineuse (*hypérfoton gnófon*)”.

<sup>61</sup> Ibidem, p. 120.

<sup>62</sup> Ibidem, p. 178.

<sup>63</sup> Ibidem, p. 624.

<sup>64</sup> Ibidem, pp. 436, 576.

<sup>65</sup> Ibidem, p. 598f.

western society as *information society* the information has an enormous influence. Information is nowadays described as a “hinge category between science and theology”.<sup>66</sup> The evolutionary success of mankind is partly explained by “the capability to handle information in an adequate way”.<sup>67</sup> The *informational worldview*, which is “centered on the more dynamic aspects of information” overcomes the “mainly object-oriented” mechanistic worldview.<sup>68</sup> The concept of information can also be helpful in bridging dichotomies like subject and object, mind and matter.<sup>69</sup>

From a theological point of view information indwells creation as a divine input. The world was created through God’s Word and is as such based on divine communication and information. The latin *informo, informare* means “to give shape or form to”.<sup>70</sup> As living creature (*nephesh hayah*) with divine dignity - *imago Dei* the human being is able to share and transform information, i.e. to participate in the *dynamism of divine creativity*. For the Dutch scientist and theologian Cornelis Johannes Dippel (1902-1971), God is the sublime “Informaticus” or “Informer” of matter, the ultimate source of all information “by which man, matter, mind, energy, all visible and invisible things” are.<sup>71</sup> Karl Rahner defined matter as “frozen spirit”, whereas Dippel spoke about matter as

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<sup>66</sup> J. C. A. van der Lubbe, J. W. A. Laurent, Information as a hinge category between science and theology and its impact on the idea of God, in: Chr. Wassermann, R. Kirby, B. Rordorf (eds.), *The Science and Theology of Information. Proceedings of the Third European Conference on Science and Theology*, Geneva, March 29 to April 1, 1990 (Genève: Labor et Fides 1992), p. 83f.

<sup>67</sup> *Ibidem*, p. 85.

<sup>68</sup> *Ibidem*.

<sup>69</sup> *Ibidem*.

<sup>70</sup> J. C. Puddelfoot, Information and Creation, in: Chr. Wassermann, R. Kirby, B. Rordorf (eds.), *The Science and Theology of Information*, p. 15.

<sup>71</sup> Cf. J. C. A. van der Lubbe, J. W. A. Laurent, Information as a hinge category, p. 87.

“solidified information”, so that the material world is always marked by the *divine information*.<sup>72</sup>

Based on this creation exists due to an *intentionality of communicative information*. God is source of life, of information and the eternal light in which the information, the symbolic encoded world should be understood. The human being is able to hear the Word of God (“Hörer des Wortes” – Karl Rahner). Without such an ability of perceiving human and divine information, information is meaningless. Humans are able to receive, to decode and to understand the divine information. By seeing the world in the light of divine wisdom, the biosphere becomes a semiosphere:

“In the *biosemiotic vision* natural entities and processes are seen as interconnected webs of relations, shaking hands so to say between levels in the hierarchical scale, stretching along the spatial dimension from the single cell to the biosphere or, along the semantic dimension, from pheromone-signaling to the human psycho-neuro-immuno-endocrine system”.<sup>73</sup>

In his book “The Beauty of the Infinite. The Aesthetics of Christian Truth”, David Bentley Hart describes the recapitulation of creation in Christ as semiotical process of restauration: “Christ’s miracles – as do all the aspect of his life and ministry – constitute a *semeiosis* (...) that restores the original *semeiosis* of the world, the language of divine glory, and that reorients all the signs of creation toward the everlasting sign of God, who walks among them. (...) all the signs of created being (...) speak of him”. Each attempt to understand Christ is “an *epektasis* of words, in and toward the Word”.<sup>74</sup>

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<sup>72</sup> P. Van Dijk, Revelation and Information, in: Chr. Wassermann, R. Kirby, B. Rordorf (eds.), The Science and Theology of Information, p. 92f.

<sup>73</sup> M. A. Marais, The use of information concepts in the dialogue between science and theology (University of South Africa, November 2001), p. 15, cites Hoffmeyer.

<sup>74</sup> D. B. Hart, The Beauty of the Infinite, p. 327f.

## 7 Criteria for Theology and Science Dialogue

1. The common sphere of the *one*<sup>75</sup>, *intelligible world*<sup>76</sup>, i.e. of the one complex reality – open and complementary hermeneutics of the one reality – Reality/information, cultural/traditional medium of experience, knowledge. *Theology and Science can be understood as an attempt to understand and to participate in the mystery of life and light.* Theology and Science have a common realm of reality, of information, of biological life, traditions, perspectives’ – anthropological constant or *knowledge in the realm of historical conditio humana.* An *anthropology of communication* could be fruitful for the interdisciplinary dialogue – homo communicans, the human being as information sharing being.
2. *Pneumatological dimension of knowledge and being:* “The Holy Spirit is present in all creatures and most of all in those who have participated in any way to reason. Because He is who holds and unites the knowledge of all creatures, since He is God and God's Spirit, going into everything according to the potentiality that He foresees, and He enlivens and moves the natural reason of all, this way leading him, who senses and has his will ready to receive the correct and natural thoughts, to feel those of his acts that don't comply completely with the customs of nature”.<sup>77</sup>
3. *Fragmentarity of knowledge and relativity of paradigms:* “Aware that there is no such thing as objective, or value

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<sup>75</sup> See J. Polkinghorne, *One World. The Interaction of Science and Theology* (London: SPCK 1987).

<sup>76</sup> See G. V. Coyne, M. Heller, *A Comprehensible Universe. The Interplay of Science and Theology* (New York: Springer 2008).

<sup>77</sup> Maximus Confessor, *Questiones ad Thalassium* 15, “Τὸ πνεῦμα τὸ ἅγιον οὐδενὸς ἄπεστι τῶν ὄντων καὶ μάλιστα τῶν λόγου καθοτιοῦν μετελιφώτων”; see: <http://www.ellopos.net/elpenor/greek-texts/fathers/maximus-holy-spirit.asp>

neutral information, the paradigms within which we observe, understand, communicate and make decisions, will influence the future direction of the world. Our interpretive models, paradigms and languages are in continuous change over time, often through interaction, sometimes by re-seeing something in a different perspective”.<sup>78</sup> Scientific knowledge is limited<sup>79</sup> because it depends on the quality of instruments and of the interpretative observer as well. The *subjectivity of human knowledge* is clear in the process of observation that depends on the observer. Michael Welker showed in a constructive way that only a *multidimensional and multiperspectival approach* can lead the Theology and Science Discourse on a new plurisignificative level<sup>80</sup>.

4. *Culture of kenosis or humility* as way of reconciliation of the multiplicity of paradigms. “We think in culturally and linguistically determined models and metaphors. However, we continue to change, responding to new information, new experiences and new interpretations”.<sup>81</sup> The culture of kenosis is the way of overcoming intolerance and idolatry of discourses by the creative challenge of difference.
5. *Recognition of the gnostic intellect*. “The gnostic intellect (ὁ γνωστικὸς νοῦς) is a friend of God (θεοφιλῆς), because in his searching for the truth (...) inflames the fire of knowledge

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<sup>78</sup> F. Rajotte, Models and Metaphors as Informations Carriers, in: Chr. Wassermann, R. Kirby, B. Rordorf (eds.), *The Science and Theology of Information*, p. 124f.

<sup>79</sup> See D. Buxhoeveden, Limitations of Scientific Knowledge and Orthodox Religious Experience, in: idem, G. Woloshak (eds.), *Science and the Eastern Orthodox Church* (Farnham: Ashgate 2011), p. 91f.

<sup>80</sup> M. Welker, *The Theology and Science Dialogue. What can Theology Contribute*. Expanded Version of the Taylor Lectures Yale Divinity School 2009 (Neukirchen-Vluyn: Neukirchener Verlag 2012), pp. 18.37f.

<sup>81</sup> F. Rajotte, Models and Metaphors as Informations Carriers, p. 126.

(τὸ πῦρ ἐξόπτων τῆς γνώσεως)".<sup>82</sup> "For all the things of God, which we contemplate (...) with the help of the appropriate science (...) tells us in a hidden way about how they were made. Through them we learn of God's purposes in every created thing. (...) Through the wise contemplation of creation, we discern the Reason which sheds light on the Holy Trinity".<sup>83</sup>

6. *Universe of divine intentionality of communion.* According to the Christian Trinitarian paradigm of communion and communication, the main aim of existence is Koinonia. There is an inner longing for fulfillment in and through communion in all human beings. Different forms and levels of sociality and intelligent language can be found also in animal reign.
7. *Sharing the same information with different hermeneutics.* One significant step in Theology and Science Discourse would be the question about an *interdisciplinary hermeneutics*. This hermeneutics of creation as *hermeneutics of complementarity* towards a better understanding could build the bridge for a deeply encounter between these both "truth-seeking" communities. A hermeneutics of complementarity is a cognitive and cultural invitation to search together, to share with each other the results of our understanding and discoveries, to open together "new windows" into visible and invisible realities. I understand a hermeneutic of complementarity as an attempt of integrative knowledge without reductionism and academically collapse of competence and concentration on specific topics, as Welker expressed it by quoting a brilliant questions (of

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<sup>82</sup> Maxime le Confesseur, Questions À Thalassios, Tome II (Questions 41 à 55), Paris 2012.

<sup>83</sup> Maximus the Confessor, Questions to Thalassius, in: PG 90, 90: 296; see also D. Stăniloae, The Holy Trinity, p. 7.

- Beckett): “Are you merely interested in everything – or also in something specific?”.<sup>84</sup>
8. *Creative love as participation in divine creativity.* Theological knowledge is doxological, i.e. not exclusivist but participatory openness to the divine light, wisdom and love. Openness for the discourse of the other is openness or ability to be “illuminated” by *the embodied fire of the other*. Multilinguality and multiperspectivity are a challenge but also a necessity, in order to overcome each sort of violence of *univocalist contaminated discourses*. Without a dynamic of self-transcendence there is no Science and Theology Discourse possible.
  9. *Responsible, interdisciplinary dialogue as ecological-ecumenical task.* In dialogue we can understand us a “part of the total interdependent created order. The sickness of the earth is inextricably bound up with the sickness of people”.<sup>85</sup>
  10. *Vivid dialogue marked by the same passion for the “breath-taking complexity” of the world.* I understand this *sincere passion for knowledge* as an inner longing for understanding, and for participation in the deep meaning of the universe. There is in my opinion always a “liturgical logic” and “liturgical ethos” in any scientifically and theological seeking of truth. “Truth-seeking communities are communities which do not claim to possess the truth, but rather raise truth-claims and develop agreed modes to test these claims”. Truth-seeking communities “seek to enhance topical insight and the coherence of knowledge”<sup>86</sup>
  11. *Science and Theology Discourse as Contribution to the welfare of future generations.* The search for authentic information can be seen as search for divine, eternal

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<sup>84</sup> M. Welker, *The Theology and Science Dialogue*, p. 21.

<sup>85</sup> F. Rajotte, *Models and Metaphors as Informations Carriers*, p. 129.

<sup>86</sup> M. Welker, *The Theology and Science Dialogue*, p. 74.

rationality/information.<sup>87</sup> Scientists and Theologians are responsible for discourse as *transfer of information* and *formation of future cultural identity* (that is connected in my opinion with a correspondent ethics/activity). Theology and Science dialogue can lead to transformative impulses, to a *humanization of the world by dialogue, communication, self-transcendence, trust and philanthropy*.

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<sup>87</sup> M. Glodz, Search for “Eternal Informations” in Science – two perspectives, in: Chr. Wassermann, R. Kirby, B. Rordorf (eds.), *The Science and Theology of Information*, p. 333ff.