
HEBRAIC SCRIPTURAL HERMENEUTICS IN THE ANCIENT HELLENISTIC WORLD AS THE BASIC APPROACH OF EARLY CHRISTIANS

Daniel Slivka*

University of Prešov in Prešov, Greek-Catholic Theological Faculty, Department of Historical Sciences, st. bishop Gajdič 2, 080 01 Prešov, Slovak Republic

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Abstract

Hellenistic culture intersected with the Hebrew Bible world of thought and produced principles of inculturation within what came to be called ‘Hellenistic Judaism’. These principles reflected models drawn from the Hebrew Bible and its Greek translation, the Septuagint. It is important to take notice of the interpretation of Scripture and the process of inculturation begun in this specific environment. Since they had a Jewish origin, early Christians also employed the methods of Hellenistic Judaism in interpreting the Hebrew Bible, and there were these methods they applied to the new situation of emerging Christianity.

Keywords: inculturation, hermeneutics, Bible, Hellenistic Judaism, Jewish-Christian dialogue

1. Inculturation and Hebrew scriptures in the Hellenistic culture

The term ‘inculturation’ refers to the process by which the message of the Bible roots itself in the cultural environment where it penetrates. In this process, the shared values of the given culture are perceived as universal values that stem from faith in God. “The theological foundation of inculturation is the conviction of faith that the word of God transcends the cultures in which it has found expression and has the capability of being spread in other cultures, in such a way as to be able to reach all human beings in the cultural context in which they live. This conviction springs from the Bible itself, which, right from the book of Genesis, adopts a universalist stance (Genesis 1.27-28), maintains it subsequently in the blessing promised to all peoples through Abraham and his offspring (Genesis 12.3, 18.18), and confirms it definitively in extending to ‘all nations’ the proclamation of the Christian Gospel (Mathew 28.18-20. Romans 4.16-17, Ephesians 3.6).” [The Pontifical Biblical Commission, *Interpretation of the Bible in the Church*, http://catholic-resources.org/ChurchDocs/PBC_Interp-FullText.htm#Sec4]

*E-mail: daniel.slivka@unipo.sk

The first stage of inculturation of the Bible was the translation which took place after the return of the Jews from Babylonian captivity. A new political situation, and the corresponding lack of knowledge of the Old Hebrew language, created ground for new ways through which the sacred texts of Israel came to the nation. While the scribe Ezra read the text in Hebrew, he was surrounded by priests who explained and interpreted the Law to the people (Nehemiah 8.1-8). The Hebrew text of the Bible was translated orally into the Aramaic language. The two activities [1] of reading the Word of God and understanding God's message captured in Scripture can subsequently be applied to the life of the nation of Israel.

Another translation is the Septuagint. It is the oldest and the most important translation of the Hebrew Bible into the Greek language. The city of Alexandria probably held the largest Jewish colony in the Diaspora. In many spheres of cultural and religious life [2], the Jews of Alexandria "could compete with Palestine" [D. Duka, *Úvod do Písmasv. Staréhozákona*, <http://krystal.op.cz/pub/udps1.htm>]. More or less, it was a setting where Greek was the principal language, and Jews themselves could not understand the text of the Hebrew bible. In the 3rd to 2nd century BC, a Greek translation was produced for those Jews who could not understand the books written in the Hebrew language [3]. Other reasons for the translation of the Hebrew Holy Scriptures to Greek were pedagogic and catechetical aim. The Greek text of the Septuagint was used in liturgy, lectures and religious education. The Greek text was also employed in Jewish apologetics and missions – in clashes of controversies and opinions between the Hellenistic and Jewish cultures. In the Hellenistic setting, the Septuagint also helped Jewish relations with the Gentiles. It strengthened the contrast between Israeli monotheism and pagan idolatry [4]. Later, the Septuagint was adopted and cited by authors of the New Testament, and used by the early Church. It thus might be called the Christian Old Testament. In the years when the Septuagint first appeared, the Hebrew text of the Old Testament was not yet stable. When compared with the later Masoretic Hebrew text, one finds the Septuagint has many variants which present the older, different understanding of the Old Testament's pre-Masoretic text. "The significance of the Septuagint lies in the fact that it made the Old Testament available to the Hellenistic world and thus paved the way for the preaching of the Gospel to Jews in the diaspora." [3, p. 915-916] Besides the Greek translation of the Old Testament text, there are other Hebrew or Aramaic works translated into Greek. All these writings gave the Septuagint seven more books than the Hebrew canon [5]. "The passage from one language to another necessarily involves a change of cultural context: concepts are not identical and symbols have a different meaning, for they come up against other traditions of thought and other ways of life." [http://catholic-resources.org/ChurchDocs/PBC_Interp-FullText.htm#Sec4]

2. The significance of inculturation for Christian scriptural interpretation

Since early Christians were of Jewish origin, one can say they employed Hebrew Bible interpretive methods when they produced New Testament texts in the Hellenistic context of the time. Christians who came from the Greek culture might employ the philosophy of Plato and Aristotle in their interpretation of the Old Testament texts. This is most apparent in their allegorical interpretations of a biblical text [6]. But the New Testament itself bears the marks of inculturation. This is true because in presenting the Palestinian message of Jesus to Judeo-Hellenistic culture, the New Testament displays its intent to transcend the limits of a single cultural world [http://catholic-resources.org/ChurchDocs/PBC_Interp-FullText.htm#Sec4].

The hermeneutic core by whose light the apostle Paul read the Bible is the historical event of Jesus of Nazareth, the person whose life enlightens the whole Old Testament (Luke 24.27). “God of the Bible is (rather) known on the basis of what He has done in the history of his people, in the ancient times (Israel and the early Church) and in the present (Christian and Jewish communities today). Christian talk about God begins with marvelling over His works of redemption and mercy in the glorious history of salvation. God becomes known to us in and through his Word, that is, the Word that became flesh in the historical person of Jesus from Nazareth, the Christ.” [7] The Gospel narrative thus becomes normative for our understanding of the message of the canonical Scriptures as a whole. Specific scriptural passages “need to be considered and interpreted in the light of this message (the Gospel). The authority of the Bible itself is derived from the authority of Christ’s Gospel.” [8]

In Apostle Paul’s approach, one finds a typical Jewish exegesis in the style of Rabbi Hillel (60 BC-20 AC, expert of the Torah and Oral Law at Jerusalem, founder of the school ‘bet Hillel’ and of the rabbinic exegetical method and hermeneutics) and his rules. Paul approaches two texts from the Scripture and compares them. He explains one text by means of another. This method appears even today when a difficult text is explained by means of an easier one (i.e. one whose understanding is clearer, less ambivalent). The approach proceeds from the easier text to the more difficult one. Rabbis called the approach of explanation of one text by means of another ‘a pearl necklace’ or ‘chaining (as in the formation of a chain)’. In Apostle Paul’s letters, one also encounters allegory. For the purposes of explanation and interpretation, Paul uses two types of situation. While one type of situation still lasts, the second one arises alongside it. Subsequently, Paul makes a connection between both types and compares them. A symbol of one situation appears in another one, such as in Galatians 4.24 or in 1 Corinthians 9.9. In this comparative synthesis, Paul finds and creates further connections. The prevailing sense of their relation is more typological than allegorical. However, the apostle Paul did not accept allegorical interpretation as a general rule for interpretation of Scripture [9].

Inculturation of the Biblical message leads to the kind of interpretation employed by New Testament authors. “While it may constitute the basic step, the translation of biblical texts cannot, however, ensure by itself a thorough inculturation. Translation has to be followed by interpretation, which should set the biblical message in a more explicit relationship to the ways of feeling, thinking, living and self-expression which are proper to the local culture. From interpretation, one passes then to other stages of inculturation, which lead to the formation of a local Christian culture, extending to all aspects of life (prayer, work, social life, customs, legislation, arts and sciences, philosophical and theological reflection).” [http://catholic-resources.org/ChurchDocs/PBC_Interp-FullText.htm#Sec4]

The four most important apostolic hermeneutic approaches are the biblical model, Christological model, typological model and charismatic model [10]:

1. The biblical model presents Jesus of Nazareth as the Messiah, primarily His acts, suffering, death, resurrection and missionary command. It emphasizes His actions and His fulfilment of the law.
2. The Christological model highlights the Messiah’s mission as a son of King David and the one who was predicted by prophets.
3. The typological model points out some facts of the Old Testament which appear to be a model for another era. These pre-figures cannot be arbitrary, because they express a deeper understanding. Even if the text is based on a letter, it creates a pre-figure to understand Scripture and enriches knowledge. In the New Testament itself, there are many symbols of the typological sort, such as Eva – Mary, etc.
4. The charismatic model emphasizes that a proper approach to Scripture is impossible without the interpreter's cooperation with the Holy Spirit. The Holy Spirit must help the interpreter to penetrate into Scripture.

In considering New Testament authors, other principles of Scriptural inculturation can be found:

1. The allegorical approach: The Old Testament is an allegory for the New Testament. It thus had great value for the New Testament authors. It is an allegorical interpretation of the Old Testament which is usually referred to as typological. Its reinterpretation originates in the conviction that God fulfilled the promise given to the Jewish nation through Jesus [11-13]
2. The typological approach: Events and personalities of the Old Testaments point to events of the New Testament. The symbols and prophecies of Christ’s coming, the object of searches in Old Testament, are easily tied to the life of Christ [13, 14]; “Typology is a way of revealing the biblical history of salvation where the older stages are accepted as pre-figures of the later periods as well as younger stages are taken as recapitulations or the fulfilment of the preceding ones“ [15]. In order to explain typology, it is necessary to define its components: (1) Old Testament - type (pre-figure); (2) New Testament - antitype (fulfilment); (3) God’s disposition as to which type is attributed to an antitype: the word ‘type’ is derived from the Greek τύπος (typos) which means a model, image, figure. In the Bible, the term

‘type’ refers to a model, personality, thing or event of the Old Testament which serves to pre-figure the higher truths of Jesus Christ and the New Testament people of God. The word ‘antitype’ is derived from the Greek ἀντίτυπος (antitypos) which corresponds to the word ‘model’, or it can carry the meaning of the word ‘opponent’. It can stand for: “The New-Testament person, thing or act which are presented by the Old-Testament pre-figure, thus by the type (person, thing or act) and in the allegorical typology, the term is often used for an antagonistic person or opposing opinions which clearly stress the positive profile of the main character” [15]. God’s instruction is a necessary element on the basis of which we can talk about the future reality of a past fact. It is not an easy task primarily because the ‘typical sense’ cannot be seen anywhere in Scripture. The disposition (God’s instruction) is revealed in different ways: a) said by Jesus Christ; or b) said by a hagiographer (disposition is included in the charisma of the inspiration).

3. The pedagogical approach: The Old Testament is a pedagogue which leads to Jesus of Nazareth, and its task is finished in Him. This principle explicitly stresses the pedagogical value, significance and meaning of the Old Testament;
4. The approach of accusation: The Old Testament and the Mosaic Law were given to warn us of sin. This approach appears frequently in the Apostle Paul’s writings. In this context, Paul asks why Jesus has been given. Paul offers an answer by explaining that Jesus was given to bring us the grace of the redemption from sins. The apostle Paul’s teaching is that the Old Testament with its teaching of the Law does not justify man. In his Letter to Romans and Letter to Galatians, he explains that man is justified only by faith, not by the obedience to the law. The Old Testament Law is meant to curb human wickedness and to provide a partial solution through sacrifices or faithful obedience to the commandments. Ultimately, however, the law only convicts people of their sinfulness in the sense of inability to comply with the holy law of God. Jesus embodies (in his person) a new model which reveals the need for the redemptive grace.
5. The approach of completion: The New Testament is the fulfilment of Old-Testament eschatology in the person of Jesus of Nazareth. The New Testament is the fulfilment of the Messianic eschatological texts of the Old Testament. They are the texts about a boy (Isaiah 7), about a suffering servant (Isaiah 42–55), and about a new Moses (completed in Jesus Christ).
6. The approach of overcoming. This approach explains that the Law of Moses has been overcome. The sacrificial practices of the priests are overcome by the single New-Testament sacrifice. They are overcome in the New Testament presence of Christ-high priest in a single sacrifice. As pointed out in the letters of Paul, the Law of Moses is fulfilled, and by this virtue its accusing character is overcome. The clearest witness to this truth can be found in the Letter to Hebrews.

7. The approach through the commandment: The Law of Moses covered by the Decalogue is still valid [16], though certain ceremonial Jewish rules do not apply to the Gentiles. New rules do not bind Romans, Greeks, the Gentiles, but the law as completed by Christ. Jesus has new requirements for humans which are not connected with making the phylacteries wide – as the teachers of the law and the Pharisees did for men to see. But Jesus says “when you pray, get to your room, close the door”. In other words, Jesus insists on a prayer, but this prayer has nothing to do with a formality or presentation in front of others any more. It is rather a matter of mutual respect and a worshipping of God. The New Testament deals with new binding rules that are not ethnically based. Jesus completes the model with a new ‘logion’, with the intention of a praying man.
8. The approach of radicalization: This approach does not focus on compliance with external regulations, but it penetrates inside a human, into his heart. The teaching of Jesus requires one to purify the heart and only then to step before God. Jesus does not insist on the external rules, on lawful fulfilment of duties, but He looks for the person’s inner intention. Jesus is not satisfied with the external presentation of religiousness, while the heart of the human is full of lies and malevolence. Jesus radicalizes the demand of the law, which means that He requires pure intention from of the human will and calls for a purification of hearts. Jesus explains that a human is not corrupted by what comes to him (or inside him), but what comes out of him. The latter comes from an inner stance and reveals the true intention of the human heart.
9. The historical – redemptive approach: This hermeneutic approach deals with acceptance of the Gentiles in the Church. Its starting point is the conviction that such an inclusive perspective is nothing new inasmuch as God acted similarly in the past. The example is often found in the woman who accepted spies in Jericho, the Moabite woman Ruth, and the legal precepts in the Torah concerned with foreigners and slaves, etc. In the Letter to Romans, chapters 9–11, Paul demonstrates that the calling of the Gentiles into the Church does not mean a change in God’s attitude, because His aims were the same in the past.
10. The linguistic model: This approach expresses New Testament ideas by means of the words used by Old Testament ideas. The theology of the Old Testament employs the same words used by the New Testament ideas. It means that New Testament words about sin or God’s grace are the same as found in the Old Testament.
11. The apocalyptic – eschatological approach: In the Old Testament, there are various chapters dealing with the resurrection and end times. A certain integration exists between the Old and New Testaments, and between New Testament and Old Testament eschatology. The Old Testament is a source of suggestions for the vision of the end times. There are images dealing with the coming and resurrection of Jesus Christ. The integration between the New and Old Testaments is based on their common contexts. If the

unity of the Christian Bible were divided, there would be no legitimate reference point and thus these contexts could not be understood. The New and Old Testaments must be considered together, or their unity is lost. The New Testament is obscure without the Old Testament, and vice versa. The New Testament regards the Old Testament (2 Peter 1.19), especially its prophecies, as a light that shines in a dark place until 'the day dawns'. The latter figure of speech appears in writings by Clement of Alexandria (AD 150-215), who took it from the Greek philosophers.

The above evidence indicates that New Testament authors ascribed an exclusive hermeneutic unity to the Old Testament and New Testament history of salvation:

- For Christians of Jewish origin, the Old Testament constituted a normative source of God's laws and prophecies. It possessed high value as part of God's unified revelation.
- Of crucial importance was Jesus' affirmative stance towards the Old Testament. In their respect for the Old Testament, Christians followed the example of their Lord.

The New Testament authors saw that Jesus did not come to abolish the Old Testament, but rather that He had a high respect for it. Jesus exalted the relation between the Old Testament and himself when he claimed to have come to fulfil it. The Hebrew Bible thus had crucial value not only for the New Testament authors but also the early Christian communities. This, however, does not mean that their respective approaches to the Old Testament held to a uniform perspective and hermeneutic.

3. Modern perspectives

The Jewish nation did not lose the mission it received from God. The history of revelation connects Jews and Christians. Christians depend on this common 'root' into which they were 'engrafted' (Romans 9–11). It is important to bear these facts in mind in every dialogue between Judaism and Christianity.

The gospels of Matthew and Luke exhibit close relations in their genealogies. Their common element is the name of Abraham as the father of faith for both Christians and Jews [17, 18]. "Without the Old Testament, the New Testament would be an incomprehensible book, a plant deprived of its roots and destined to dry up and wither." [9, p. 84] The mutual dialogue helps to understand and explain the great themes of the common religious history, to read the biblical texts from a fresh, more complex perspective, and to enrich the knowledge of humans and their relation to God [19]. All of this helps an interpretation of biblical texts with important anthropological and sociological implications. Thus, from a biblical anthropological perspective, a human being is understood rightly as a privileged creature that God desires for Himself [20].

We now turn to the importance of canonical hermeneutics. Canonical hermeneutics has two basic tasks. The first is to state the effective way of looking for the meaning of the biblical text in its own context: (1) "*To avoid*

subjectivism, however, one must allow pre-understanding to the deepened and enriched - even to be modified and corrected – by the reality of the text” [http://catholic-resources.org/ChurchDocs/PBC_Interp-FullText.htm#Sec4] (2) To find effective ways to express particular meaning in the present context [21]. It looks for the answer to the issue of how to bridge the gap between biblical meaning and the categories of present cultural thinking. In the case of Western Christianity, it means the translation of biblical meaning to modern Western categories of philosophical thinking. This is no small task.

The present task of biblical hermeneutics is to look for a connection between (1) the hermeneutic task of finding the right historical-critical method for a search for original biblical meanings and (2) the hermeneutic task of bridging the gap between those rediscovered meanings and the mental systems of modern cultures [22]. This effort bears the title ‘canonical hermeneutics’. It deals with ways (meanings) by which Israel, Judaism, and the Christian Church bridged the gap between the inherited faith and new cultural situations [23]. The canonical aspect includes the process by which the early authoritative traditions faced the ancient cultural meanings. These traditions adopted and also adjusted these cultural meanings, forming a new harmony with the needs of the communities of believers. The process itself is as canonical as the traditions derived from it. This is why the Bible can be understood not only as a reflection of God’s truth, but also as a resource of meaning and identity for people who continue to find their identity in the canonical narrative, while embracing the unique reality of their own contexts [24]. Canonical hermeneutics is the tool by whose help the early communities of believers endured – perceiving and embracing the integrity of ontology and ethics as they were captivated by the Gospel narrative. This is an important lesson to remember. Here we ought to follow the lead of Kierkegaard and Bonhoeffer, among others, who marked the “departure from the European metaphysical tradition which favoured the noetic certainty of knowledge”, arguing instead that “[t]here must be a deeper, existential basis, related to the deepest aspirations and, yes, fears and doubts of the individual - a desire permeated by passion” [25], which has clear ethical implications.

Modern hermeneutics deals not only with the contexts that the biblical texts are read and reproduced in, but also with the texts themselves. In this way, it is necessary to insist that the Bible is similar to other ancient texts, while keeping in mind that it is the Word of God. In addition, any literary and hermeneutic analysis of texts should not neglect a religious perspective. Besides contributing to a more complex view of reality, “the analysis of literary texts from the religious point of view can be a serious bridge of dialogue between Theology and the modern world” [26]. Furthermore, a word gets its meaning through the effect of the text and its context, whether in the distant past or any other time. The recognition of the right context, whether past or present, is crucial to biblical interpretation. The better the knowledge of the historical text (including its historical context) we have, the clearer the meaning and impact of the words are for us today. The better we can discern our present context, the

clearer will our decision be regarding the kind of hermeneutics tools we will need to get the most out of the text. The Bible itself gives us signs on how to find the original meanings hidden in it and how to use them in the present-day context. This is indispensable for the shaping of our theological views [27]. Depending on the context, the two basic modes are constitutive and prophetic. The key difference between them is theological: On the one hand, the absolute freedom of God and on the other, His generosity and mercy together with his unquestionable favour to the helpless [28]. The Bible taken as a model for preaching God's mighty deeds enables us to understand the constant presence of God and His actions in our midst. One should not, therefore, "expect to make sense of his own life without an arduous struggle to interpret one's existence in relation to self, the world, and to God. The power and wisdom of such interpretation (of one's existence) comes from God as the source, guide, and goal of the journey." [29] It shows us how to study the integrity of the truth in the present, i.e. God's uniqueness ontologically as well aesthetically [23, p. 407].

References

- [1] A.M. Signer, *How the Bible Has Been Interpreted in Jewish Tradition*, in *New Interpreter's Bible*, Vol. 1, Abingdon, Nashville, 1994, 65-82.
- [2] D. Berberich, *Posolstvo knihy Jonáš a vzťahy medzi kultúrami*, in *Biblia a dialógkultúr. Kniha Ester*, Katolícka univerzita v Ružomberku, Košice, 2008, 69.
- [3] J. Heriban, *Príručný lexikón biblických vied*, PSÚSCM, Rím, 1992, 916.
- [4] F. Trstenský, *Úvod do knihy Žalmov*, Pedagogická fakulta Katolíckej univerzity v Ružomberku, Ružomberok, 2008, 95.
- [5] R. Rendtorff, *Hebrejská bible a dějiny*, Praha, Vyšehrad, 1996, 355.
- [6] A. Tyrol, *Všeobecný úvod do biblického štúdia*, KBD, Svit, 2000, 76.
- [7] M. Valčo, R. Králik and K. Valčová, *Od stvorenia k vykúpeniu: kapitoly z evanjelickéj vierouky a kresťanskej etiky*, vol. I, 2nd edn., KUD Apokalipsa, Ljubljana, 2013, 16.
- [8] M. Valčo and K. Valčová, *Teologické posolstvo Lutherovej reformácie a výzvy súčasnej doby*, Žilinská univerzita, Žilina, 2012, 355.
- [9] Pápežská biblická komisia, *Židovský národ a jeho Svätá Písma v kresťanskej Biblii*, Karmelitánské nakladateľství, Kostelní Vydří, 2004, 36.
- [10] M. Masini, *Úvod do Lectiodivina*, Karmelitánské nakladateľství, Kostelní Vydří, 1993, 38-42.
- [11] J. Barr, *Old and New in Interpretation: A Study of the Two Testaments*, SCM, London, 1966, 103-148.
- [12] L. Goppelt, *Die typologische Deutung des Alten Testaments im Neuen*, Wissenschaftliche Buchgesellschaft, Darmstadt, 1990.
- [13] W.G. Jeanron, *Hemeneutyka teologiczna*, WAM, Krakow, 1999, 31.
- [14] R.M. Grand and D. Tracy, *Short History of the Interpretation of the Bible*, 2nd edn., Fortress, Philadelphia, 1984, 37.
- [15] A. Novotný (ed.), *Nový biblický slovník*, Návratdomů, Praha, 1996, 1058.
- [16] M. Petro, *Dekalóg a jeho miesto v katechéze*, in *Školská a mimoškolská katechéza v európskej edukačnej štruktúre*, GTF PU, Prešov, 2008, 106-118.
- [17] H. Waldenfels, *Fenomén kresťanství*, Vyšehrad, Praha, 2001, 58.

- [18] R. Králik, *Kierkegaardův Abrahám: Kierkegaardova interpretace Abrahámovy víry*, KUD Apokalipsa, Ljubljana, 2013, 42.
- [19] P. Hošek, *Židovská teologie křesťanství*, CDK, Brno, 2011, 28-30.
- [20] Druhý vatikánský koncil, *Gaudium et spes (1965)*, Spoloksvätého Vojtecha, Trnava, 1993, No. 24.
- [21] P. Hanes, *Postmoderné problémy a ich riešenie v Starej zmluve*, in *Zborník z vedeckej teologickej konferencie s medzinárodnou účasťou*, Združenie evanjelických cirkví vo vydavateľstve, TRIAN, Banská Bystrica, 2001, 62-73.
- [22] M. Pribula and G. Paľa, *Stručne o komunikácii*, Pro communion o. z, Prešov, 2006, 21.
- [23] K. Crim (ed.), *The Interpreter's Dictionary of the Bible*, Abingdon Press, Nashville, 1991, 403.
- [24] A. Kacian, *An Introduction to the New Testament. Part One: The Gospels and the Acts of the Apostles*, Žilinská univerzita, Žilina, 2008, 29-30.
- [25] M. Valčo and K. Valčová, Communications: scientific letters of the University of Žilina, **16(3)** (2014) 25-28.
- [26] C.I. Toroczka and D. Preda, Eur. J. Sci. Theol., **10(1)** (2014) 125-132.
- [27] J. Coranič, P. Šturák and J. Koprivňáková, *Cirkev v okovách totalitného režimu*, GTF PU, Prešov, 2010, 327-333.
- [28] K. Kardis and L. Szot, *Globalizácia, náboženstvo, politika*, GTF PU, Prešov, 2013, 187-193.
- [29] M. Valčo, R. Králik and L. Barrett, Communications: scientific letters of the University of Žilina, **17(2)** (2015) 103-108.