

# In Support of Theory of Appearing: Defending Langsam against Djukic's Critique

Ali Far

**Abstract** — The purpose of this paper is to defend Langsam's Theory of Appearing (TA) against Djukic et al's critique. In strengthening Langsam's defense of TA, I adopt some of Le Morvan's arguments in defending Direct Realism. TA states that experiences are relations between material object and mind, and that phenomenal features are appearances of relations held between material objects and mind. Djukic objects to TA on three grounds of Hallucination, Causal Principle (CP), and Time-Gap: First, Djukic objects to TA on the ground that perception and hallucinations are phenomenally indistinguishable, thus phenomenal features (or properties) instantiated in perception may not be relations either, and thus TA could fail. In defending TA, Langsam argues that indistinguishability does not entail that perception and hallucination instantiate the same appearance. Moreover, disjunctivist conception of experience supports TA in that phenomenal features are either a relation between a material object and mind, or it is something else (as in cases of hallucination). I aim to show that sense-data (or like) theories of perception, that Djukic favors as being superior, would fail Djukic's own scrutiny in cases of hallucination in addition to being against common-sense. Second objection is that perception and hallucination must have the same-cause because they are indistinguishable, and also CP requires that same-causes to produce the same-effects. But hallucination and perception are different experiences, and hence TA fails CP. Responding to CP objection, "same-cause same-effect" only applies to *intrinsic* changes and intrinsic changes are changes in intrinsic properties and relations between intrinsic properties. Third, TA is opposed because for a given Time-Gap we cannot experience objects as they are (were) at the time of our perception. TA defeats this objection because it does not claim that "we can now (experience) the no-longer existent object as it is now, but only that we can *now* (experience) the once-existent object as it used to be. Fourth, to further strengthen TA, I will raise objections to TA including from the vantage point of Durability, Perceptual Relativity, Illusion, and Partial Perception arguments, and respond to such objections accordingly. To explicate TA, I argue from the vantage points of common sense, realistic physical biological considerations, and non-miraculous expectations from any theory of perception, including from TA.

**Keywords** — *Philosophy of Perception, Theory of Appearing, Direct Realism, Disjunctivism, Langsam, Djukic, Le Morvan, Hallucination, Causal Principle, Time Gap, Partial Perception, Perceptual Relativity, Illusion, Durability.*

## I. INTRODUCTION

Langsam defends Theory of Appearing (TA) which states that the way objects appear to us are instantiations of their *phenomenal* features, and as such phenomenal features are relations between material objects and the mind (e.g., Object X appears such and such to mind Y) [1]. For example according to TA, an object appearing red to a subject is the "*apple's standing in an appearing-red to relation to a mind*"<sup>1</sup>. To contrast TA from more mind-centric theories of perception, Langsam emphasized that thoughts have no phenomenal character but experiences do (i.e. *what it is like* to have experiences versus thoughts).

First objection to TA from the hallucination argument is that because perception and hallucination have the same appearance to us, they present the same phenomenal features, which may yield phenomenal features in perception and hallucination as having the same properties. For example, when a person hallucinates red and when he sees red, they are phenomenologically identical and thus indistinguishable in that in both cases he has something *looking* red to him<sup>2</sup>. Langsam argues that while perception and hallucination may be *experienced* as indistinguishable, that does not mean for them to have the same ontological character. Perception is a relation between object and mind, whereas hallucination is not. Here, Langsam offers a disjunctivist conception of experience of perception by positing that there is nothing in common between seeing and hallucination, and he leaves open whether hallucination experiences are *any relations of any type*<sup>3</sup>. Langsam argues that it just would be false to concurrently claim that (a) there is something in common between seeing and hallucination and (b) also say that object of seeing is a direct object of awareness<sup>4</sup>. Djukic objects to Langsam by arguing, in part, that unless something looking red in perception and looking red in hallucination were both relations, how can one explain their *Indistinguishability*?<sup>5</sup> As such, Djukic asserts that if hallucination is relational, then an appropriate *relatum* for the hallucinatory experience must be specified [2]. Whether this relation is explained via "region of space", "mental space", or other conceptions, Djukic states that such "relatums are no different than sense-data countenanced by act-object theorist"<sup>6</sup>. Hence, he argues that for example "hallucinatory *experience* of red apple, cannot be construed as a relation of *being-appeared-red-to*, but rather as a

relation of being immediately aware of some red-object. 'Red' no longer goes towards specifying the appearing relation but (it) names the *quality* of an object to which we are *related*<sup>7</sup>. Then, Djukic makes the move that TA must be committed to an ontological nature of hallucinatory experience (that is identical to that of sense-data act-object theorist). Let us step back and subject sense-data, which Djukic favors, to the same level of scrutiny and inquiry as TA: Why and how *phenomenology* is such a reliable guide to *ontology*? Can hallucination of an object be phenomenally indistinguishable from a real object? According to Djukic, the answer is yes. Hence, if objects in sense-datum appear phenomenally indistinguishable from the real objects, then this by itself is no compelling reason to suppose the objects of awareness in hallucination and in veridical perception are ontologically the same category, even if we suppose that sense-data (or similar ideas) are objects of awareness in hallucination. Sense data theory which Djukic advocates to be superior to TA seems to fail his own scrutiny. Second objection to TA from casual arguments states that same-causes should produce same-effects, but perception and hallucination are indistinguishable as having the same immediate cause. Hence, it is argued that perception and hallucination must be the same experience, which they are not, and thus TA can be false. Langsam holds that principle of same-cause and same-effect only applies to intrinsic changes in an "intrinsic property of an object or change in the relation between objects whose properties have changed"<sup>8</sup>. Djukic seems only partially satisfied with Langsam response to objections from CP, and states that "a *necessary* condition for the non-violation of the same-cause same-effect principle is that the same kind of immediate cause not produce different kinds of intrinsic immediate effects"<sup>9</sup>, but he warns that it may not to be *sufficient*<sup>10</sup>. Third objections to TA from the Time-Gap perspective are as follow: Because of time-lags (or time-gaps), we cannot experience objects as they are at the time of our perception. Langsam states that things may have different properties at different times, and may appear differently at different times. Hence, a "visual perceptual experience may be also as a relation that obtains between an object as it is at a particular time"<sup>11</sup>. Because TA does not commit itself to existence of back-ward causation, TA stands against the idea that "if a relation obtains at some particular time, then the relation must obtain between objects as they are at that particular time"<sup>12</sup>. Djukic objects to Langsam's presuppositions that experiences are relational and external, that experiences do not supervene on intrinsic features of the mind, and Djukic is not satisfied with Langsam's comparing *being-appeared-to* with being *thought-of*<sup>13</sup>. In the fourth section of my discussions, I adopt Le Marvon's arguments to strengthen TA by raising objections to TA and responding to such objections from the perspectives of Partial Perception, Perceptual Relativity, Illusion, and Durability arguments. Lastly, I suggest that Djukic critique here seems against common sense, and his rejection of TA appear to stem from his commitment to *space of reason* than to a sound theory of perception [4]. It seems that Djukic's rejection of TA and

favoring sense-data may mainly be motivated by the ease with which he can force-fit sense-data (or a similar) theory of perception, and not TA, into his more important commitment which is the space of reason conception<sup>14,15</sup>.

## II. DISCUSSIONS

Langsam's Theory of Appearing (TA) is an account of the ontological nature of experience. In TA, experience is a relation between material objects and the mind. Experiences have a phenomenal character, as in what it is like to have such experiences, whereas thoughts do not. Phenomenal features are specific aspects of the phenomenal character when we have a perceptual experience, which is the way objects appear to us as instantiations of the phenomenal features of the object of our experience. Therefore, phenomenal features (of the object of our perceptual experience) are relations between such objects and our mind. Simply speaking, TA is how (object) X appears such and such to (mind) Y. In this section, I will address Djukic's objections to TA on grounds of Hallucination, Causality, and Time-Gap. Moreover, in order to strengthen TA, I adopt La Marvon's arguments (in defense of Realism), by responding to other possible objections to TA including from Durability, Perceptual Relativity, Illusion, and Partial Perception arguments.

### A. *Argument Against TA from Hallucination Perspective:*

It is argued that when a person hallucinates, he cannot distinguish it from having a perceptual experience. Perception and hallucination are indistinguishable, because they experientially appear to a person as the same. Hence, it is argued that because perception and hallucination present the same appearance, they present the same phenomenal features. Hallucination's and perception's phenomenal features have the same properties, and experience of hallucination and perception are phenomenologically identical. Moreover, in hallucination, phenomenal features are instantiated even when there is no perception of a real material object. Perceptual experience cannot be instances of a *sui generis* relation between mind and external objects<sup>16</sup>. In hallucinatory cases, there exists no relation between an object and mind. One can experience something like or about an object of a kind without veridical existence of an object of such kind. Therefore, hallucination is a case when phenomenal features (that appear in hallucination) are not relations (between mind and object). There are no significant qualitative or phenomenal differences between the objects of one's experience in cases of hallucination and actual perception. Hence, it can be argued that TA fails given such indistinguishability between the objects of one's experience when he is hallucinating compared to when he perceives an actual object<sup>17</sup>.

### B. *Responding To Hallucination Critique Against TA:*

Objects can appear as the same to a person, when objects are similar and not necessarily always when objects

are (exactly) the same. Also, although a perception and a hallucination can instantiate similar phenomenal features (in one's mind), the fact that perception and hallucination may be indistinguishable to a person, that does not necessarily mean that such perception and hallucination have (exactly) the same phenomenal features. Langsam defends TA against hallucination by denying that perceptual experience and hallucinatory experience as having the same ontological character, and via invoking the *disjunctivist theory* (DT)<sup>18</sup>. By applying the DT of experience to TA, Langsam argues that the phenomenal feature is either a relation between X and Y, or something else (Z) and Y. This move enables Langsam to “leave open whether hallucinatory experience are relations of the same kind, different in kind from the perception, or not relations at all”<sup>19</sup>. Since for Langsam perception is matter of a mind's standing in certain relation to a material object, whereas hallucination is not, then the “absence of a material object would not necessarily count against TA, whether hallucinatory experience is relational or not”<sup>20</sup>. Therefore, Langsam argues that phenomenal features of perception (of X), but not hallucination, are relations between material object (X) and mind (Y). Djukic rejects Langsam's response against hallucination, pointing to alternatives including ‘sense data’ (i.e., there can be an object that is red in both the perceptual and hallucinatory case and that there are instances of the same type of sense datum in each case) and ‘state’ theories (i.e., subject's being in the same type of intrinsic state in each case of perceptual and hallucinatory experience)<sup>21</sup>. Djukic objects to Langsam by arguing, in part, that “unless something looking red in perception and looking red in hallucination were both relations, how can one explain their Indistinguishability?”<sup>22</sup>. If hallucination is relational, then an appropriate “*relatum* for the hallucinatory experience must be specified”<sup>23</sup>. Whether this relations are explained via “region of space”, “mental space”, or other conceptions, Djukic suggests that such “*relatums* are no different than sense-data countenanced by act-object theorist”<sup>24</sup>. Hence he argues that for example “hallucinatory experience of a red apple, cannot be construed as a relation of being-appeared-red-to, but rather as a relation of being immediately aware of some red-object. ‘Red’ no longer goes towards specifying the appearing relation but names the quality of an object to which a person is related”<sup>25</sup>. Then Djukic makes the move that TA must be committed to an ontological nature of hallucinatory experience (that is identical to that of act-object theorist).

Adopting Le Morvan line of argumentation, I argue that if sense-datum is the object of a person's immediate awareness in cases of hallucination, we “need not accept that he is also the object of our immediate awareness about veridical perception”<sup>26</sup> [3]. In Objecting to TA, Djukic suggested that if  $O_H$  (object of hallucination) and  $O_{VP}$  (object of veridical perception) are phenomenally indistinguishable, then  $O_H$  and  $O_{VP}$  are ontologically indistinguishable. But, why phenomenology is such a reliable guide to ontology? Could not a hologram or hallucination of a red apple appear phenomenally indistinguishable from a real red apple? Yes,

they can. If the red apple (like) sense-datum appear phenomenally indistinguishable from a veridical red apple, then this by itself is no compelling reason to suppose that the objects of awareness in hallucination and in veridical perception are ontologically the same category, even if we suppose that sense-date (or alike ideas) are object of awareness in hallucination<sup>27</sup>. Again, echoing Le Morvan's line of argumentation applied to sense-data in cases of hallucination, let's suppose that a person is immediately aware of a red apple, but that there is no red apple out there to appear to him. By making a move from ‘no physical red apple to appear to him’ to ‘he is immediately aware of something like a red apple’, one cannot conclude that sense-data are objects of immediate awareness in cases of hallucination<sup>28</sup>. It is also of note that TA does not need to conjure up some strange existence like sense-data to justify perception. For more details, readers can refer to references and end-notes outline 4 ways that TA can survive the critiques from hallucination including (1) relying on the disjunctive theory<sup>29</sup>, “(2) state of brain, (3) mental images, and (4) “physical space occupants” to be object of experience in hallucination<sup>30</sup>.

#### C. Argument Against TA from Causality Principles (CP):

Objection to TA from casual arguments states that same causes should produce same effects, but perception and hallucination are indistinguishable as having the same immediate cause. For example, to say that the apple appears red to a person could be to say that the apple *casually* produces an *experiential state* in that person when phenomenal feature of redness is instantiated<sup>31</sup>. It is possible that one can have perceptual experience (of appearance of red apple) and its' corresponding hallucination, which may be indistinguishable to him. It is argued that because “perception and hallucination might have the same immediate cause”, perception and hallucination must be the same experience, which they are not, and hence TA can violate CP<sup>32</sup>.

#### D. Responding To CP Critique Against TA:

Responding to the objection from CP, Langsam argues that principle of same-cause and same-effect only applies to intrinsic changes, which are changes in “intrinsic property of an object, or changes in the relation between objects whose properties have changed”<sup>33</sup>. Djukic, seems only somewhat satisfied with Langsam's response to CP's objection, and states that “a *necessary* condition for the non-violation of the same-cause same-effect principle is that the same kind of immediate cause not produce different kinds of intrinsic immediate effects”<sup>34</sup>, but he warns that it may not to be *sufficient*<sup>35</sup>. I suggest that common sense and real-life considerations may favor Langsam's view here. We are beings whose perceptions in the real world depend on complex series of events including condition of our eyes, optical nerves, and other physiological causal chains in our brain. No one, including the proponents of TA, is “ignorant of the fact that there are casual intermediaries between objects and a person”<sup>36</sup>. A cause-and-effect stimulated via

an object (factor) is not the same as cause-and-effect stimulated via a cognitive-neurological factor. Langsam argues that “same-cause same-effect principles apply only to intrinsic changes” that are associated with the “properties of objects and that are in relations between intrinsic properties”, and that TA “need not be committed to possibility of the same-cause of the same-kind producing different-effects....Only intrinsic changes that result from the operations of identical causes must be the same”<sup>37</sup>.

#### E. *Argument Against TA from Time Gap argument:*

Because of time-gaps, a person cannot experience objects as they are at the time of his perception. Things may have different properties at different times, and thus they may appear differently at different times. Hence, a “visual perceptual experience could be supposed also as a relation that obtains between an object as it is at a particular time”<sup>38</sup>. However minute, any time lag between an object and one's perceptual experience (i.e., I can still see a star one light year away, which died a year ago) of such object may be incompatible with TA because for a given time-gap (or time-lag) one cannot experience the object as it is at the time of our perception.

#### F. *Response to The Time Gap Objection:*

Langsam posits that because TA does not commit itself to existence of back-ward causation, TA rejects the suggestion that “if a relation obtains at some particular time, then the relation must obtain between objects as they are at that particular time”<sup>39</sup>. Djukic objects to Langsam's presupposition that experiences are relational and external, that experiences do not supervene on intrinsic features of the mind, and Djukic is not satisfied with Langsam's comparing *being-appeared-to* with *being thought-of*<sup>40</sup>. Djukic is not satisfied with just taking Langsam's “word that experiences are relational, and external, and external relations are datable”. However, other than negating Langsam's words, he does not offer a substantial counter-argument<sup>41</sup>. Again, I suggest that common sense may favor Langsam's position. TA does “not deny the existence of time lags in perception, and does not need to be committed to endowing human percipients with miraculous perceptual abilities inconsistent with our best physical theories”<sup>42</sup>. Because a person deals with near-by objects in “majority of his day-to-day activities, his perceptual experiences appear so quickly that they seem to occur instantaneously”<sup>43</sup>. It therefore may be odd to think about currently experiencing, for example, seeing a star that died a year ago. But once a person realizes that all perceptions, involve some time lag, in the context of larger spatial-temporal distances, then it is not as odd to accept the idea of seeing an object that no longer exists. TA need not commit itself to the idea that “a person can now (experience the appearance of) the no-longer existent object as it is now, but only that one can now (experience the appearance of) the once-existent object as it used to be”<sup>44</sup>. This view resonates with common sense.

In the last segment of my discussions, I adopt Le Marvon's insights to strengthen TA by very briefly raising objections and responding to such objection from the perspective of Partial Perception, Perceptual Relativity, Illusion, and Durability arguments:

#### G. *Partial Perception Argument:*

There is no more reason to think that perceiving a physical object entails perceiving all of its part at once (e.g., in thinking that visiting Paris entails seeing all of its parts at once, or eating a watermelon entails being able to eat it with one bite). Similarly, in seeing a physical object (according to TA) “there is surely some parts of it, which I do not and cannot see” due to nature of things<sup>45</sup>.

#### H. *Perceptual Relativity and Illusion Argument:*

An object can appear (qualitative or quantitative) as certain color, size, height, and shape from one angle and appear differently from another view point. For example, when a circle appears elliptical to a person, he is immediately (experiencing or) aware of an oval and not a circle. Similarly, a straight stick that is half submerged in water would appear bent to him – he is immediately aware of something bent and not straight. The stick looks bent because of photons interacting differently in different mediums (i.e. air versus water). A circle appears elliptical when viewed from different angles due to the raw perceptual relativity that is operant between a person and his universe. There is no need to “reify appearances as objects of immediate awareness in order to account for the facts of perceptual relativity or intervening mediums. TA can account for perceptual relativity or intervening mediums by “appealing to various physical and physiological considerations”<sup>46</sup>. For perceptual theories to be sound, they neither need to be tested against nor commit a person, for example, to super-human capacities that are beyond his physical realities or physiological capabilities, and as such we neither need to produce strange theories such as sense-data (or alike) nor “deny our perceptual relativity inconsistent with our best physical theories”<sup>47</sup>.

#### I. *Durability Argument:*

It can be argued that TA is false because what a person experiences as appearance (i.e. color) of objects (that is present to one's consciousness) is some sensible existence that is not identical to any (i.e. color of) physical object<sup>48</sup>. For example, a person can doubt if anything is actually colored because color of varying objects are just reflection from surfaces consisting of photons vibrating differently depending on the structural composition of the object's surfaces. But this kind of objection is due to doubt (in the intentional context) and not perception itself, be it in TA or sense-data or other perception theories<sup>49</sup>.

Much of Djukic's critique of Langsam's defense of TA is focused on the argument from hallucination. But it is of note that the real life experiences of hallucination for ordinary people in sober conditions do not fit the profile of

the kind of hallucination that Djukic is using to reject TA. It is self-evident that a very small percentage of population experience hallucination while sober and awake, whereas all people experience perception (but for blind people). It is likely that those people who hallucinate, do so a small portion of their waking and sober lives. Also, a very small percentage of those people who hallucinate, remember details about their hallucinations to tell about it. Based on my very limited understanding (and some TV documentaries), of those very few who can remember to describe their hallucination, they claim that the totality (of the entire narrative) of experience in hallucination is very different from a typical perceptual experience narrative, despite short clips of hallucination that may contain one or a few episodes (i.e., of seeing a red apple) that may resemble a perceptual experience. Again based on limited testimonies that I have heard or seen, even such isolated clip of the hallucinatory narratives generally do not carry the same kind of vivid, or rich, continuous, or tangible character as compared with a perceptual experience. Moreover, they are generally devoid of the kind of other sensations that accompany perceptual experiences such as smell or sound or touch that a person would expect and generally feels concurrent with perceptual experience.

### III. CONCLUSION

My goal in this paper is to defend Langsam's Theory of Appearing (TA) against Djukic et al's rejection of TA. In strengthening Langsam's defense of TA, I adopt insights that Le Morvan had raised in defending Direct Realism. TA claims that experiences are relations between material object and mind, and that phenomenal features are relations that hold between material objects and minds. Djukic objects to TA on grounds of Hallucination, Causal Principle (CP), and Time-Gap. Objecting to TA, is firstly because perception and hallucinations are phenomenally indistinguishable, thus TA could fail. Defending TA, in part via disjunctivist conception of experience supports TA in that phenomenal features are either a relation between a material object and a mind, or it is something else (as in cases of hallucination). Second objection to TA is that perception and hallucination must have the same cause because they are indistinguishable, and the CP requires for same-causes to produce the same-effects, and hence TA could fail CP. Responding to CP's objection, "same-cause same-effect" only applies to intrinsic changes. Thirdly, TA is opposed because for a given Time-Gap it is argued that a person cannot experience objects as they are (were) at the time of his perception. TA defeats this objection because TA does not claim that "a person can now (experience) the no-longer existent object as it is now, but only that he can now (experience) the once-existent object as it used to be". To further strengthen TA, I raise additional objections to TA including from Durability, Perceptual Relativity, Illusion, and Partial Perception arguments and respond to them accordingly. In support of TA, I advocate for common sense, realistic physical biological

considerations, and non-miraculous expectations from any theory of perception, including from TA. I wonder whether Djukic might have been so concerned and committed to Space of reason that his enquiry into theory of perception was primarily to force-fit (all of) perception into Space of reason (going all the way out). If Djukic is not motivated to cash out a sound perception theory, that can at least partially explain why he does not scrutinize sense-data (or alike), why he is motivated to advocate for obsolete perception conceptions such as sense data (or alike), and how he might view TA as a threat to his commitment to space of reason.

### ACKNOWLEDGEMENT

I would like to express my sincere gratitude to Professor Isabelle Peschard at San Francisco State University for her mentorship and invaluable feedbacks.

### REFERENCES

- [1] Langsam, H., (1997) "The Theory of Appearing Defended", *Philosophical Studies* 87: 33-59.
- [2] Djukic, G.; Popescu, V. B. (2003), "A Critique of Langsam's: The Theory of Appearing Defended", *Philosophical Studies* 112: 69-91
- [3] Le Morvan, P. (2004). "Arguments Against Direct Realism And How To Counter Them", *American Philosophical Quarterly*, 41(3), 1-29
- [4] Sellers, W. (1963). *Science, Perception and reality*, Reprinted in 1991, Ridgeview.

### AUTHOR'S PROFILE



**Ali Far** received the B.S. in Electrical Engineering and Computer Science from University of California Berkeley in 1983. He got his M.S. in Electrical Engineering in 1986, M.B.A. in 1989, Juris Doctor in Law in 1997, and M.A. in Psychology (MFT & LPCC) in 2010, all from Santa Clara University. He is currently completing his M.A. in Philosophy at San Francisco State University.

Between 1982 to 1997, Ali worked in Silicon Valley for technology companies including Plantronics, Precision Monolithic (now ADI), Micro Power Systems (now Exar), Media Vision (now Creative Labs), and lastly for TelCom Semiconductor (now Microchip) where he was Vice President of Design Engineering. During this period, Ali developed analog semiconductor chips for wireless, personal computers, consumer, industrial, defense, and medical applications for the US and Asian markets. Subsequently, Ali switched fields to technology investment banking, and between 1998 to 2009 he worked at Wall Street firms including Prudential Securitas, Galleon Group, and lastly Spherix where he was Founder, Portfolio Manager, and Technology Analyst covering and investing in semiconductor, storage, wire-line, wireless, and internet technology equities for North America and China regions.

Ali has 12 patents and several pending in the area of analog semiconductors.

His current areas of interest are Asian and continental philosophy, and philosophical psychology.

END NOTES

---

- <sup>1</sup> Djukic et al (2003), p. 69
- <sup>2</sup> Djukic (2003) p. 72
- <sup>3</sup> Djukic (2003) p. 73
- <sup>4</sup> Djukic (2003) p. 82
- <sup>5</sup> Langsam (1997), p. 76
- <sup>6</sup> Le Morvan (2004), p. 17 ; Djukic (2003) p. 81-82; Langsam (1997), p. 76
- <sup>7</sup> Djukic (2003) p. 82
- <sup>8</sup> Langsam (1997), p. 43
- <sup>9</sup> Djukic (2003) p. 84
- <sup>10</sup> Djukic (2003) p. 85-86
- <sup>11</sup> Langsam (1997), p. 49
- <sup>12</sup> Langsam (1997), p. 50, p.53
- <sup>13</sup> Djukic (2003) p. 89:
- <sup>14</sup> Sellers, W. (1963). pp.1-40
- <sup>15</sup> Djukic (2003) p. 83
- <sup>16</sup> Djukic (2003), p. 72
- <sup>17</sup> Le Morvan (2004), pp.14-15
- <sup>18</sup> Djukic (2003) p. 73
- <sup>19</sup> Djukic (2003), p.73
- <sup>20</sup> Djukic (2003), p.74
- <sup>21</sup> Djukic (2003), p. 74
- <sup>22</sup> Djukic (2003) p. 82
- <sup>23</sup> Langsam (1997), p. 76
- <sup>24</sup> Le Morvan (2004), p. 17 , and Djukic (2003) p. 81-82
- <sup>25</sup> Djukic (2003) p. 82
- <sup>26</sup> Le Morvan (2004), p. 14
- <sup>27</sup> Le Morvan (2004), p15
- <sup>28</sup> Le Morvan (2004), p16
- <sup>29</sup> Langsam (1997), p. 41
- <sup>30</sup> Le Morvan (2004), p16;
- <sup>31</sup> Langsam (1997), p. 37
- <sup>32</sup> Langsam (1997), p. 42
- <sup>33</sup> Langsam (1997), p. 43
- <sup>34</sup> Djukic (2003) p. 84
- <sup>35</sup> Djukic (2003) pp. 85-86
- <sup>36</sup> Le Morvan (2004), p. 4
- <sup>37</sup> Langsam (1997), pp. 43-44
- <sup>38</sup> Langsam (1997), p. 49
- <sup>39</sup> Langsam (1997), pp. 50-53
- <sup>40</sup> Djukic (2003) p. 89:
- <sup>41</sup> Djukic (2003) p. 89
- <sup>42</sup> Le Morvan (2004), p. 7
- <sup>43</sup> Le Morvan (2004), p. 8
- <sup>44</sup> Le Morvan (2004), p. 8
- <sup>45</sup> Le Morvan (2004), p. 9
- <sup>46</sup> Le Morvan (2004), p. 12
- <sup>47</sup> Le Morvan (2004), p. 13
- <sup>48</sup> Le Morvan (2004), p. 17.
- <sup>49</sup> Le Morvan (2004), p. 18