## MAHARISHI, PLATO AND THE TM-SIDHI PROGRAM ON INNATE STRUCTURES OF CONSCIOUSNESS

### JONATHAN SHEAR

(Editor's note: This is a very unusual article. It was read at a number of major universities in the United States (Dartmouth, Johns Hopkins, Emory University, and so on) where it was given a mixed, but generally positive, reception. Some considered it a major breakthrough in Plato scholarship, others a most unusual proposal, still others thought it a bit far-fetched, though well done. I leave it to the reader to decide for himself.)

The Science of Creative Intelligence (SCI) has been developed by I. Maharishi as an empirical discipline to study the various aspects of consciousness, both as it exists in itself and as it unfolds in thought and action. Of particular interest to philosophy is its claim that there exists a systematic technology (embodied in the techniques of the Transcendental Meditation (TM) program) to explore the nature of the mind from its surface activity to its inner source, a technology which allows us, independently of all prior belief and expectation, first to discover and then to corroborate intersubjectively the existence of specific states, structures, and processes of consciousness. If this claim is true SCI offers philosophy the prospect of being able to evaluate major philosophical questions from an expanded base of empirical data. This paper will examine some new empirical data produced by research on one of the advanced techniques of the TM program and analyze it in terms of its significance for the traditional philosophical question of the existence of innate structures of mind.

Twenty-three hundred years ago Plato articulated the first and II. most influential Western theory of innate knowledge. He held that the mind has inborn knowledge of fundamental archetypes, the Forms, According to Plato's theory we are born with this knowledge in a latent, potential form; experience can activate these potentials; and it is the activation of these potentials which underlies all of our subsequent knowledge. Two major aspects of Plato's theory of Forms can readily be distinguished: (1) the existence of an innate, non-learned basis for linguistic competence and discursive knowledge, and (2) the existence of inmate, non-learned archetypes or structures of consciousness which can be activiated and experienced. Both of these aspects of Plato's theory have been influential throughout the history of Western philosophy and psychology. Both have had modern proponents: Chomsky argues for something like (1) above, and Jung for (2). While there has been conspicuous difficulty in producing convincing examples of innate structures as in (1) above, the search for such structures remains a lively part of empirical linguistics. But in the absence of any technique for isolating, activating, and experiencing innate archetypes as in (2), modern scientific thinkers have generally rejected them as illusory, and the generally accepted position about Plato is that his reasoning (whether correct or incorrect) to the Forms in sense (1) led him to *invent* them in sense (2).<sup>1</sup> New research in the field of consciousness at Maharishi European Research University (MERU) sheds interesting light (a) on the general question of the existence of innate archetypes in sense (2), and (b) on particular questions of how to interpret Plato's theory of Forms.

The research that will concern us involves the experimental III. results produced by the TM-Sidhi techniques derived by Maharishi from Patanjali's Yoga Sutras. These advanced techniques<sup>2</sup> involve a practice on formulas or "sutras" detailed in the third chapter of the Yoga Sutras.<sup>3</sup> One particular technique produces results of direct relevence both to our discussion of innate structures in general and to our discussion of Plato in particular. The sutra in question states "On the pole-star knowledge of the motion of the stars is gained."<sup>4</sup> One would naturally expect to perceive the motion of the stars in the context of the heavens as we are accustomed to perceive and think about them. And in fact such perceptions do represent early phases of the experience produced by the technique in question. But in many cases the experience quickly develops into something quite different. The pole-star is seen at the end of a long, rotating shaft of light. Rays of light come out from the shaft like the ribs of an umbrella. The umbrella-like structure on which the stars are embedded is seen rotating. Along the axis of light are other umbrella-like structures, one nested within the other, each rotating at its own rate, each with its own color, and each making a pure, lovely sound. The whole experience is described as quite spectacular, blissful, colorful and melodious.5

This experience is repeatable, is specific to the specific technique employed, is gained without prior knowledge that the structure ex-

<sup>1</sup> See, for example, "Knowledge and the Forms in the Later Platonic Dialogues," Robert G. Turnbull, *Proceedings and Addresses of the American Philosophical Association*, Volume 51, No.6, August 1978, p. 736.

 $^{2}$  A minimum of two months regular practice with the basic TM technique is required before they can be learned effectively.

<sup>3</sup> The mechanics of the techniques as outlined by Patanjali and refined and applied by Maharishi are interesting to analyze but are not of direct relevence to the main topic of the present paper. For a brief discussion of the techniques, their purposes and effects see *Enlightenment and the Sidhis*, MERU Press, Switzerland, 1977.

<sup>4</sup> Patanjali, Yoga Sutras, Chapter III, sutra 28.

<sup>5</sup> See my "Plato, Piaget, and Maharishi on Cognitive Development," read to the American Psychological Association's Eighty-Sixth Annual Convention, Toronto, August, 1978, and reprinted in *Scientific Research on the Transcendental Meditation Program: Collected Papers*, Vol. 11, MERU Press (in press).

perience is experienceable by the particular TM-Sidhi technique employed, and (for all subjects interviewed) without prior knowledge that the structure in question had ever been conceived of by anyone, much less themselves.<sup>6</sup> The experience is the innocent by-product of the proper practice of the technique; it cannot be derived either from the cognitive content of the sutra or from the prior knowledge and/or expectations of those practicing the technique. The logical conclusion is that the specific content of the experience represents the mind's own contribution, arising in response to the practice of the technique. That is, the technique enlivens specific, non-learned or innate responses, and allows us to experience what can, I think, properly be called an innate archetype or structure of human consciousness.

The conclusion that the TM-Sidhi practice associated with the polestar sutra produces experience of an innate structure or archetype is strongly reinforced by the fact that a description of an experience of this same complex structure is found in an ancient Greek text, Plato's *Republic*,<sup>7</sup> a text whose main epistemological point is that innate structures of knowledge can and should be experienced.<sup>8</sup> The fact that Modern Americans and Europeans practicing a technique derived from ancient India innocently and quite unexpectedly get this experience recorded in detail by Plato in classical Greece shows that innate potentials of consciousness exist, and can independently of all such superficial, external considerations as nationality, culture, time, and place, be isolated and activated to produce experiences of archetypes of consciousness.<sup>9</sup>

(For Plato's text and subjects' drawings see Appendixes A and B.)

IV. The fact that Plato accurately described an experience of what we now independently know to be an innate, experienceable structure or archetype of consciousness suggests very strongly that his theory of Forms as experienceable archetypes was not based solely on inferences about the necessary preconditions of language and discursive thought,

<sup>8</sup> See *Republic*, 532d (p. 764), 534e (p. 766), etc. For the question of experience of the Forms, see Sections V-VII of the present paper.

<sup>9</sup> The evidence described above of course in no way warrants the inference that the structure represents any objective, physical structure located in the physical universe. That is, the point under discussion is the existence of archetypes innate to the human mind, not their objective significance, and certainly not objective matters of cosmology.

 $<sup>^{6}</sup>$  See Appendix B for subjects' drawings of their experiences and Appendix C for an abstract of the research methodology and numerical results.

<sup>&</sup>lt;sup>7</sup> Republic, 616b-617b, translated by Paul Shorey; reprinted in *The Collected Dialogues of Plato*, Edith Hamilton and Huntington Cairns, editors, Princeton University Press, 1973, pp. 840-1. All references to Plato are from this edition of the *Collected Dialogues*. The first reference to a dialogue will give the dialogue, the Stephanus numbers, the translator, and the page numbers (in parenthesis) from the *Collected Dialogues*. Subsequent references will give the dialogue, the Stephanus numbers, and the page numbers alone.

but also on knowledge that experienceable archetypes, in particular the one we have been discussing, actually exist. This leads naturally to the question of the relationship of this particular archetype to his theory of Forms. Could Plato have regarded it as a Form? And if not, what is its relation to the Forms?

The structure of archetype we have been discussing was described by Plato in his myth of Er at the end of the *Republic*. In this myth, Er dies, goes to another realm, has some experiences, including one of the structure in question, returns to his body, animates it, and relates his experiences.<sup>10</sup> What, if any, is the relation of this "after death" realm to the realm of the Forms? If we turn from the *Republic* to the *Phaedo*, the dialogue generally accepted as the one in which Plato first introduces his theory of Forms, we find a very strong connection.

In the *Phaedo*, as in the other dialogues, Plato characterizes the Forms as the only things which are "true" and "real", both as objects and as causes.<sup>11</sup> They are so different from physical objects and the objects of the senses that all contact with the body and its organs of sense is a hinderance to knowing them. In fact, according to Plato, they are truely knowable only when one is completely independent of the body and its sense organs, that is, either (a) after death or (b) by "practicing death," accustoming the soul "to withdraw from all contact with the body and concentrate itself by itself . . . alone by itself" as much as possible.<sup>12</sup>

Later, in the same dialogue, Plato has Socrates describe what he actually expects to experience after death. This turns out to include, among other things, "the true earth", "the real earth", and "the true heaven and the true light".<sup>13</sup> Clearly when in the same dialogue where Plato introduces the Forms and (1) characterizes them as the only true and real things, he then (1') describes objects as "the true" and "the real", and when he (2) characterizes the Forms as experienceable "after death" and then (2') describes the above objects as experienceable "after death", it is clear (3) that these objects are intended by Plato to be examples of Forms, and (4) that the "after death" realm in which they are found must be (at least part of) the realm of the Forms.

It remains to be shown that Plato intended the "after death" realms described in the *Phaedo* and the myth of Er to be (parts of) the same realm. The evidence is quite strong. (1) Both are described as experienced "after death". (2) Both contain the same kind of objects, including, for example, the huge, celestial objects already referred to. Thus both are *prima facie* (parts of) the same realm. And when we note further that (3)

- <sup>12</sup> Ibid., 67c-d (p. 50). Also 79e-81a (p. 64), etc.
- <sup>13</sup> Ibid., 109e-110b (p. 91).

<sup>&</sup>lt;sup>10</sup> Republic, 614b-621d (pp. 836-44).

<sup>&</sup>lt;sup>11</sup> Phaedo, 65d (p. 48), 100a-e (p. 81-2), etc., translated by Hugh Tredennick.

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Plato used the same metaphor<sup>14</sup>—even to the detail of referring to the sea-god Glaucus, the only two references to Glaucus in all of Plato's works<sup>15</sup>—to introduce his descriptions of the two realms, it becomes clear that Plato intended both descriptions to refer to one and the same realm.

Turning from examination of Plato's texts to the result of the TM-Sidhi program we find independent empirical evidence for the above conclusion. During the TM techniques one's attention spontaneously withdraws from the body, the senses, and the realm of thought, and one finds one's mind or consciousness concentrated in and by itself.<sup>16</sup> The experience of this process is, by all reports, deeply restful and refreshing, and produces measurable increases in intelligence, creativity, and dynamism.<sup>17</sup> This is obviously the opposite of dying and death. Nevertheless, the process fulfills the description Plato gives of his philosophical method of "practicing death".<sup>18</sup> Thus, the TM-Sidhi technique we have been discussing both (1) fulfills Plato's description of his method in the *Phaedo*, and (2) produces clear experience of the structure of the cosmos as described in Er.<sup>19</sup> It thus provides independent, empirical corroboration for our identification of the two passages as referring to the same realm.

We now have strong textual and empirical evidence for identifying the "after death" realm of the *Phaedo* with that of the myth of Er. And since the "after death" realm in the *Phaedo* has been identified as (at least part of) the realm of the Forms, the realm in Er must also be part of this realm.

V. Is it now possible to identify the structure of the cosmos we have been discussing as a Form? (1) Like the Forms it is described as experienced in the realm "after death". (2) Like them it is typically forgot-

<sup>15</sup> Ibid., 108d (p. 90) and Republic, 611d (p. 836).

<sup>16</sup> It should be noted that while the TM and TM-Sidhi techniques produce a state where the mind is *concentrated* in and by itself, this cannot be attained through *concentration*. The act of concentration, involving effort, stirs up the mind and prevents it from settling down into its most concentrated state.

<sup>17</sup> The psychological, physiological, and behavioral effects of the TM program have been studied by numerous independent research institutions throughout the world. For reprints of some one hundred of these studies see *Scientific Research on the Transcendental Meditation Program, Collected Papers*, Vol. I, MERU Press, Seelisberg, Switzerland, 1977.

<sup>18</sup> Plato's philosophy often carries a connotation of withdrawal from this world. The TM techniques are intended to enable one to gain full enjoyment of the world. Thus, while the TM techniques fulfill Plato's description of the process of "practicing death", Plato's choice of terminology is particularly unapt from the perspective of SC1.

<sup>19</sup> Phaedo, 109c-110b (pp. 90-1) and Republic, 611b-612a (p. 836).

<sup>&</sup>lt;sup>14</sup> The metaphor likens the contrast between (i) the purity of the "after death" realm and (ii) our every-day perceptual realm to the contrast between (iii) this every-day realm and (iv) the muck and mire under the sea.<sup>12</sup>

ten in the process of being (re)born, as the myth of Er makes clear.<sup>20</sup> (3) It is the same kind of object as the "true", "real" earth which we earlier identified as a Form. (4) It is experienced by a process (the TM-Sidhi "pole-star" technique) fulfilling Plato's characterization of "practicing death", the process for gaining knowledge of the Forms described in the *Phaedo*. These facts, taken together, lead naturally to the conclusion that the structure in question ought to be identified as a Platonic Form. To them we can add the following consideration: (5) Like the forms, the structure in question is an object of innate knowledge; Plato clearly knew of this innate structure; therefore, in the absence of his explicitly identifying anything other than the Forms as objects of innate knowledge, it is natural to think that Plato himself must have identified it as one of the (innately known) Forms.

Still, it is premature to identify this structure as a Form. The Forms are supposed to exist in an unseen realm, quite beyond the reach of the senses. This is clearly Plato's positon throughout the dialogues. How then could the structure we have been discussing be a Form—for it is extended, visible, colored, and audible. This, to my understanding, is the greatest difficulty that arises in the attempt to identfy the structure of the cosmos in Er as a Form.

The "next world", according to Plato, the world of the Forms, the world experienceable "after death", is "invisible", "the unseen world". It is contrasted sharply with the "visible world", the corporeal world, the world experienced by our physical sense organs.<sup>21</sup> How are we to understand this? Does this mean that the "true" world is *absolutely* unseen? I think that it does not, for otherwise Plato's detailed descriptions of the colors, sizes, shapes, etc. of the objects (including, for example, the "true", "real" earth) become incomprehensible.

Let us look at just one example of his description of the "true", "real" earth in the *Phaedo*.

The real earth, viewed from above . . . [is] variegated and marked out in different colours, of which the colors which we know here are only limited samples . . . there the whole earth is made up of such colors, and others far brighter and purer still.<sup>22</sup>

Colors there are "more and lovelier than those we have seen" here with our senses, and solid objects such as "mountains, too and the stones have a proportionate smoothness and transparency", like, or even "better still", than the precious stones we know here.<sup>23</sup>

<sup>&</sup>lt;sup>20</sup> Republic, 621a-b (p. 844). See also Phaedo, Meno, Phaedrus, etc., for the Forms as experienced in the realm "after death" and "before birth."

<sup>&</sup>lt;sup>21</sup> Phaedo, 67c-d (p. 50), 82d-83c (p. 66), 107d-108b (p. 89), etc.

<sup>&</sup>lt;sup>22</sup> Ibid., 110b-c (p. 91).

<sup>&</sup>lt;sup>23</sup> *Ibid.*, 110c-e (p. 91).

Vision there is "brighter", "purer", more varied, and "better" than our vision here. The colors experienced there are, if anything *more* real *as colors* than the colors we experience here with our physical senses, colors which are only limited, pale, opaque samples of the "true" colors experienced there. In what sense then can that realm be said to be "invisible"? I think the answer is clear: it is invisible not in itself but only to our physical organs of sense.<sup>24</sup>

On this (literal) reading of Plato, then, we see that the "next world", the world of the Forms is not *absolutely* invisible, but invisible only to our physical senses. Some, at least, of its contents (such as the "true", "real" earth previously identified as a Form) are experienceable in terms of colors, etc.—in a way *parallel to but beyond* our normal sense perception, differing from physical sense perception not (a) in having *less or no* sensory qualities but (b) in having sensory qualities that are *more* real, vivid and varied than those perceived by our physical senses.<sup>25</sup> Experience of the Forms, on this account, differs both in kind and in object from experience by means of the physical sense-organs, but it is still capable of having (true) color, sound, etc. as part of its object. With this, the major objection to identifying the structure of the cosmos in Er (and the "true", "real" earth of the *Phaedo*) as a Form is apparently removed.

The TM-Sidhi technique associated with the "pole-star" sutra VI. fulfills the logic of Plato's characterization in the Phaedo of "practicing death", provides experience of the structure of the cosmos described in the Republic as experienceable "after death", and produces this experience (in the clearest cases) with the extraordinary kind of colors, etc., qualitatively very different from those of ordinary sense perception, exactly as described as characteristic of the "after death" realm by Plato in the Phaedo. Since it is possible actually to do what Plato described (namely experience a given kind of structure, with a given unique kind of experiential quality, by means of a given type of procedure), we have strong independent empirical corroboration for (i) our textual identification of the "after death" passages of the Republic and the Phaedo, (ii) for taking Plato literally when he characterizes some of the Forms (e.g., the Form of the earth) as being experienceable in terms of color, shape, etc., and (iii) for identifying the structure of the cosmos described in Er as a Platonic Form as well as an experienceable archetype.

<sup>&</sup>lt;sup>24</sup> This interpretation, which allows a consistent, literal reading of the relevant passages in the *Phaedo*, is further supported by the contexts in which Plato describes the "next world" as invisible, contexts which make it clear that Plato's intent is to contrast this "next", "true" world with the physical world perceived through our senses.

<sup>&</sup>lt;sup>25</sup> On this literal interpretation "true", "real" gold-color, for example, would be distinctly different from the gold-color we perceive through our senses, but it would differ not in having less of goldenness, or by being a mere concept (belonging to Plato's third and lower level of cognition, *dianoia*), but by having *more* goldenness, more real, vivid and luminous, than is ever brought in by our physical senses.

In the Republic Plato calls his method of gaining knowledge of VII. the Forms the "dialectic" and characterizes it as the "main theme" of philosophy.<sup>26</sup> Since the structure we have been discussing is (1) apparently identifiable as a Form, and (2) is described by Plato in the *Republic*, a brief examination of the nature of the dialectic is in order.

The generally accepted position about the dialectic is that it is a discursive reasoning process of some kind. But a careful reading of Plato's discussion of the dialectic in the *Republic* shows that, here at least, it must be something very different, for he (1) emphatically distinguishes it from discursive reasoning as we know it, specificially from the types of reasoning used in mathematics, physics, and philosophical discourse, and then (2) implies clearly that it involves direct experience.

The dialectic, according to Plato, is so different from the discursive reasoning characteristic of mathematics and physics that he describes it as

(a) turning the mind in the opposite direction,

(b) employing a *different faculty*.

having different objects (as different as solid objects are from (c) shadows and reflections), and

(d) producing a different kind of knowledge, knowledge so different that it is likened to the difference between walking and dreaming, that is, the difference between different states of consciousness.

These four points, so far from being incidental characterizations of the dialectic, are each repeated twice in the two major passages that introduce and discuss the dialectic in the Republic.<sup>27</sup> And the dialectic is so

<sup>26</sup> "Main theme" is Cornford's translation; Shorey uses "the melody itself". Republic, 532d (p. 764).

<sup>27</sup> Republic, 508e-511e (pp. 744-7) and 532a-534e (pp. 764-6). The first three of points (a)-(d) are repeated in both cited passages, that is, in 508e-511e, where Plato's fourfold division of reality and its relation to the Good and the dialectic is introduced, and in 532a-534e, the only passage in the *Republic* where the nature of the dialectic is discussed at length. The fourth point (d) is repeated twice in the second cited passage. The references for (a), (b), (c), and (d) individually are

(a) 501b (p. 745) and 511a (p. 746), reasoning (downward) from assumptions to conclusions versus rising above all assumptions to the first principle; and 532b-d (p. 764), looking downward at the shadows and reflections representing the objects of the mathematical sciences versus looking upwards at the sun and other real objects, representing the objects of dialectic; also see 518c-d (pp. 750-1) turning the organ of knowledge around along with the entire soul to contemplate the brightest region of being. the Good, etc.

(b) 511d-e (p. 747); 533e-534a (pp. 765-6) and 532d-e (p. 764);
(c) 509d-511b (p. 745-6), especially 511b (p. 746) where the fourth level is defined as the class of objects which dialectic grasps, in contradistinction to the class studied by mathematics; 532b-d (p. 764), where the shadows and reflections representing the objects studied by the mathematical sciences are distinguished from the real objects representing the objects studied by dialectic;

(d) 533 b-c (p. 765) and 534 b-d (p. 766); also see 476c-d (pp. 715-6); 520c-d (p. 752), etc.

different from the kind of reasoning characteristic of philosophical discourse, that when Glaucon, Socrates' principal interlocutor in the *Republic*, asks Socrates to

tell me, then, what is the nature of this faculty of the dialectic? Into what divisions does it fall? And what are its ways?

# Plato has Socrates respond

You will not be able, dear Glaucon, to follow me further, though on my part there will be no lack of good will. And, if I could, I would show you, no longer an image and symbol of my meaning, but the truth, as it appears to me.... $^{28}$ 

This reply clearly indicates that the dialectic is something radically different from the kind of discursive, philosophical reasoning that had occupied the preceding two hundred pages of the *Republic*. This includes the process of questioning and answering and reasoning to the existence of the Forms that Glaucon had been following successfully up to this point, the process that modern commentators usually take the dialectic to be. Furthermore Socrates clearly implies that for Glaucon to follow him further would require his seeing

no longer an image and symbol of my meaning, but the truth itself, as it appears to me . . .

This in turn implies that the nature of the dialectic is not something that can be adequately communicated by means of *any* description, and that proper understanding of the dialectic, and therefore of the kind of knowledge it produces, requires direct experience—seeing "the truth itself" instead of merely reasononing about it in terms of "images and symbols".

Thus, it is obvious (1) that the dialectic is very different from discursive reasoning as we ordinarily think of it and (2) that it involves an essential experiential component. If the dialectic were a purely discursive technique and had no experiential component, then our identification of the structure of the cosmos described in Er as a Form would be *prima facie* puzzling, for we would then expect the Forms to be some kind of conceptual entities, with no experienceable qualities. But if, as I have argued above, Plato's description of the dialectic in the *Republic* implies that the dialectic does involve an essential experiential component, then it is consistent with our identification of the structure described in Er as a Form.

VIII. We have examined one of the experiences produced by a selected advanced TM-Sidhi technique and seen that it is possible to isolate, activate, and experience what aparently is an archetype or innate

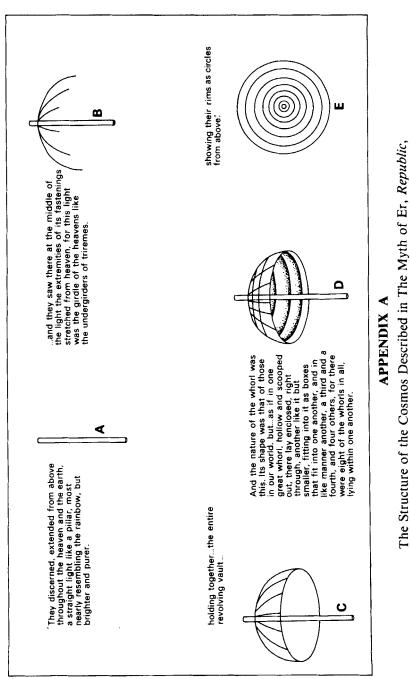
 $<sup>^{28}</sup>$  *Ibid.*, 533a (pp. 764-5). Note that this passage introduces the first and only extended discussion of the dialectic in the *Republic*.

structure of consciousness, thus bringing to apparent empirical resolution the centuries-old dispute about the existence of such innate contents of the mind. Furthermore we have seen how this same experience sheds significant light on our understanding of Plato, (1) providing strong evidence that his theory of innate knowledge and his theory of Forms was based at least in part on knowledge of the existence of such experiential archetypes, and (2) providing independent empirical corroboration of specific analyses of texts dealing with (a) Plato's method(s) for gaining knowledge of the Forms, (b) the "after death" realms of the *Republic* and the *Phaedo*, (c) the quality of experience of objects in this realm, and (d) the relation of these objects to the Forms.<sup>29</sup>

It should by now be clear that the empirical results produced by the TM program are of significance for philosophy. Philosophers interested in epistemology, ethics and all other fields where the nature of the mind is relevant, will want to look more deeply into the new empirical discipline, the Science of Creative Intelligence developed by Maharishi Mahesh Yogi.

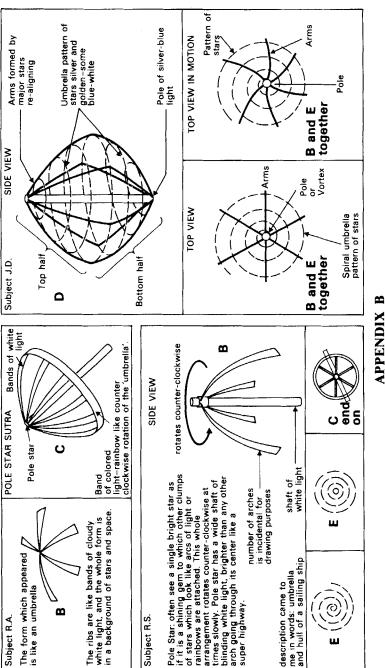
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<sup>&</sup>lt;sup>29</sup> Many important questions of course remain unexamined in this short paper, including especially those dealing with (1) the different kinds of Forms, ranging from the most abstract to the most concrete, and the kinds of experience that might be appropriate to each, and (2) the relation of Forms as experienceable archetypes to Forms inferred as the precondition of language and discursive thought.



616b - e<sup>4</sup> (with artist's construction from the text).

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Examples of Subjects' Sketches of Experiences from the Practice of the "Pole-Star" Sutra of TM-Sidhi Program (Letters B, C, D, and E added to show correspondence with Plato's text.

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### APPENDIX C

(Abstracted from "Plato, Piaget, and Maharishi on Cognitive Development"<sup>5</sup>)

Immediately following the first report of the experience, a few days after Maharishi began teaching the TM-Sidhi techniques on a large-scale basis, subjects on independent, isolated courses in different cities in Switzerland were asked to submit drawings of any experience they had on this particular sutra which they would not have expected any astronomer to expect. Of fifty-three subjects (from Europe, Canada, and the United States) responding from these and other (later) courses, twothirds (thirty-six) submitted drawings and/or descriptions which are readily recognizable as being of the structure in question (see Appendices A and B). Eleven drew both end-on and side views of the structure, twenty-one drew and/or described the ribs, eighteen the multiple layers, and twelve drew both the ribs and the layers. And most of the rest of the subjects submitted drawings which are readily interpretable as more incomplete and/or vague representations of the same structure.