



# 微观认识论导论

——一种描述论研究

An Introduction to Micro - Epistemology  
— A Descriptiological Approach

王天思 著

江西人民出版社

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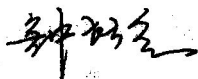
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繁荣社会科学，是建设有中国特色社会主义文化的重要组成部分。建设有中国特色社会主义文化的过程，也是社会科学研究在中国发展和繁荣的过程。积极发展哲学社会科学，这对于坚持马克思主义在我国意识形态领域的指导地位，对于探索有中国特色社会主义的发展规律，增强我们认识世界、改造世界的能力，有着重要意义。马克思主义指导下的哲学社会科学研究，集中代表着先进文化的前进方向。

社会科学的生命在于创造，在于创新，“若无新变，不能代雄”。新的世纪，新的千年，呼唤着社会科学的发展和繁荣，呼唤着社会科学研究的突破和创新。换言之，没有社会科学研究的突破和创新，也就没有社会科学真正的发展和繁荣。理论贵在创新，创新需要勇气，需要智慧，需要执着的追求和艰辛的探索；理论重在创新，创新需要有科学的精神、科学的态度和科学的方法；理论功在创新，只有创新的理论成果，才能探索规律、把握规律，才能启示实践、指导实践，才能认识世界、改造世界。坚持理论创新，是社会科学工作者的神圣职责和使命。

社会科学研究，必须坚持以马列主义、毛泽东思想、邓小平理论和“三个代表”的重要思想为指导，必须坚持理论联系实际、马克思主义学风，必须坚持“百花齐放，百家争鸣”的方针，必须坚持我国改革开放和现代化建设的实际问题、以我们正在做的事情为中心，着眼于马克思主义理论的运用，着眼于对实际

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问题的理论思考,着眼于新的实践和新的的发展。新世纪的世界,新世纪的中国,新世纪的江西,许许多多的新情况、新变化、新问题,许许多多的政治、经济、社会课题,迫切需要我们探索、去研究、去解答。社会科学工作者任重道远,大有可为。

江西向为“文章节义之乡”,素以“物华天宝,人杰地灵”著称。在历史的长河中,江西不但涌现出许多名扬中外的文学家、艺术家,而且涌现出不少影响古今的学问家、思想家。但是,我们不能沉缅于先哲的辉煌,而应该创造更加璀璨的未来。江西广大社会科学工作者一直在为此努力,并且取得了可喜的成绩。在世纪之交,江西省社会科学院、江西省社联大力实施“精品战略”,积极组织和扶持社会科学精品力作的撰述和出版,其实现形式是:推出“江西社会科学研究文库”工程,每年拿出一笔事业经费,资助出版10本理论上的厚重之作。这是我省社会科学界的一件大事、好事、实事,如此年复一年,坚持下去,必将蔚为大观。

21世纪,将是我国全面实现社会主义现代化,实现中华民族伟大复兴的世纪,也将是社会科学大发展、大繁荣的世纪。江西社会科学界的专家学者们,大家努力啊!

祝愿社会科学研究精品力作不断问世。

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## 从“什么是因果”谈起(代序)

何祚榕

我同天思同志交往始于上世纪80年代末(1990年),那时我在《中国社会科学》杂志社刚刚离休而处返聘一年中,从众多来稿中选中了王天思《试论因果结构——兼评哥本哈根学派的因果观》,并由我担任责任编辑发表于《中国社会科学》1991年第1期。

该文对“什么是因果”的哲学发问,作了新的理性思索,也即是对因果概念的重新刻画。它提出“原因是因素的相互作用过程”,“结果是因素相互作用的效应及其痕迹”。以 $F=ma$ 为例,人们“总是把 $F$ 看成是 $a$ 产生的原因”,“实际上, $F$ 只是 $a$ 产生的主要因素,其他因素还有 $m$ 等。 $a$ 产生的原因应当是 $F$ 和 $m$ 等因素的相互作用过程。”

之所以要重新刻画因果概念,无疑主要是由量子理论引发的。所以,该文已初步涉及并讨论了事物过程性质的决定论和非决定论问题。它提出“原因和结果间的联系是必然的,这是事物过程的决定论方面;而因素和结果间的联系则是或然的,这是事物过程的非决定论方面。”“原因和结果之间联系的确定性,是人类认识的客观基础;因素和结果之间联系的非确定性,则表明或然性是世界过程更根本的特性。机械决定论的因果性只是简单情况下的一种特例。”

1993年秋,天思寄我一本他的新著《在过去和未来之间——决定性与非决定性》。该书在“后记”中提出:人在过去和未



来之间生存、发展,需要揭示事物过程的规律,预测未来的发展趋势,从而在过去和未来之间塑造自己、创造世界。该书就是有关把握事物过程的规律的理性探索,讨论的中心问题是从决定论与非决定论问题入手,由此超越、分离出用来描述事物过程性质的决定性与非决定性问题,最后达到有关“把握具体事物过程的规律”的深入理解。该书最值得重视的是跳出决定论和非决定论的概念框架,转而探讨用来描述事物过程性质的决定性与非决定性问题,追寻把握事物过程的决定性与非决定性的具体统一。它指出:各式各样的决定论和非决定论,都是人们对事物过程性质的一种看法或观点,它们都不是用来描述事物过程性质本身的概念。“描述事物过程性质本身”的两个基本概念,应当是‘决定性’和‘非决定性’”,从而初步提出了微观认识研究向描述论转变的问题,即由对事物过程的解释逐步转变为对事物过程的描述。这一转变,是主体立足点的转移:从旁观者的立场转向参与者的立场。《中国社会科学》1994年第6期图书评介栏发表了拙作(以黄森为笔名)《对决定论和非决定论问题的创造性探索》,即对天思《在过去和未来之间》一书的评介。

半年后,《中国社会科学》1995年第4期图书评介栏又发表了拙作《为“微观哲学体系”登场鸣锣开道》,所评介的《微观哲学初探》,是1995年4月在华东师大出版社出版的杨世昌先生的遗著。该书作者对于围绕微观领域研究所提出的许多哲学问题一一作了追根溯源的考察和辨析,并提出自己独到的见解。拙文发表后,我将拙文并杨著分别寄给王天思等四位在《中国社会科学》上发表过论文的中青年学者,请他们发表书面意见。《中国社会科学》1996年第3期学术讨论栏刊登了四位作者的《“微观哲学初探”笔谈》,他们从不同角度对杨著进行评议和讨论。王天思写道:“可喜的是,杨世昌先生的《微观哲学初探》一书,在这方面做了很有意义的探讨。杨先生的研究,引发了笔者对于

微观认识论(或微观世界认识论)的一些思索。”天思谈了五个问题:(1)一种朝向广义认识论的努力;(2)间接感受:微观认识论的基石;(3)观测和仪器;(4)宏观主体和微观客体;(5)描述和解释。杨著提出:从日常生活中产生的宏观语言,是难以确切地描述原子世界内部事件的。如电子既不是粒子,也不是波,然而人们又不得不用波和粒这两个经典概念去描述它,像老子所说的“强为之名”。故而我们在使用粒子概念时就必须注意这是没有粒子的粒子。这就提到了“描述”的问题,与天思所思相吻合。故天思评议道:“这正说明了宏观主体用经典物理学概念描述微观客体的极端复杂性。”

受杨著的启发,天思选定了“马克思主义微观认识理论研究”的课题,花了四年时间写成“最终研究成果”,请我“鉴定”。我在“鉴定意见”中写道:“鉴定人对现代物理学(量子力学)系外行……故对此项目最终研究成果,只能从哲学认识论角度和依编辑工作经验,通过对同类论文进行比较来鉴定。”主要意见如下:

几乎在哥本哈根学派物理学家们所有重要的认识论著作中,都可以看到他们自觉不自觉地对描述问题的强调和探索。贯穿整个量子理论的对于描述问题的不自觉探索和强调,无疑是它带给我们的最重要的认识论教益。本课题最终研究成果就是对“描述”问题进行自觉的系统的反思,创造性地提出“描述论”(Descriptology),考察了“微观认识中的描述论转变”,探讨了“微观认识中的描述问题”。持之有故,探之有创;层层剥笋,逻辑严谨;言之成理,至少在国内可谓居于领先地位。

同样,限于学识水平,要我为这一前沿性的重大课题的研究成果写“序”,实际是难以胜任的。只好拉拉杂杂写上一些背景材料,作为代序交卷吧。

2003年4月

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This introduction to micro-epistemology is a philosophical reflection of “quantum wealth” as well as an anthropological analysis of the nature of human cognition in the scale of quantum. It covers the problems of the observation in and the trueness of micro-cognition, the perception of quantum phenomena, the relations between micro-cognition and practice as well as between macro-subject and micro-object, the descriptological turn in micro-cognition, the description of micro-world and some special descriptological problems in micro-cognition, etc.

Micro-cognition, just as quantum theory shows, relates to a scale out of ordinary for human being.

Quantum theory means a farther clarification of the background of human person's existence and the human-world relation. It means an enormous extending of the framework of scientific theory, and thereby the rebuilding of the foundation of philosophy. It also means the refining and the rationalization of our conceptual tools and, in a certain extent, the reconstruction of the foundation of epistemology.

The discussion of the observation problem in micro-cognition deals with the perceptual barrier between macro-subject and micro-object, the roots of the uncertainty phenomena, the wave-particle paradox and the descriptive relation between subjects and objects, and the macro observation results of micro-object and the formation of it.

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The indirectness of the experiences we got in micro-cognition is rooted in the basic fact that micro-objects don't have the macro perceptual characteristics and human being is a special macro existence.

The invisible perceptual barrier between macro-subject and micro-object forms the essential difference between micro-cognition and macro-cognition. It is the difference that shows the necessity to found a micro-epistemology based on indirect experiences.

Observation in micro-cognition, however, must be regarded as that we pose some question actively but relatively subjectively to the micro world. There are two important problems in this process. One is that if the putting of the question itself is proper. The other is how to understand the response of the micro-object.

The perceptual problem of the quantum phenomena involves the restriction and the theoretical difficulty of talking about objective phenomena, the definition of quantum phenomena and its closed character and individuality, the relation between quantum phenomena and micro reality, and the indirectness of experience in micro-cognition.

The closed character and the individuality are two basic features of quantum phenomena, which are different from macro ones. The closed character originates in the irreversibility of the forming process of quantum phenomenon; and the individuality is due to that every specific observation result we got is an effect of interaction of a specific experimental arrangement with micro-object.

Owing to that the word "phenomenon", in micro-cognition, can only denote the observation results including the effect of experimental arrangement and therefore not the pure state of micro-object independent of observing (just as we thought it were in macro-cognition), the foundation stone of micro-epistemology can but be the indirect experi-

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ences.

The problem of subject-object relation involves a predicament in micro-cognition.

It's very important to extend the understanding of the problem of subject-object relation through investigation of the complicated interaction of macro-subject with micro-object.

The investigation of the problems, which raised from the difficult situation of subject-object differentiation in micro-cognition, of the abolishment of subject and object differentiation, the subject's participation and intervention, and the delimitation of the boundary between subject and object shows that, owing to the arrangement of experiment, and the adopt of the way of putting questions and the description of the macro effects formed in the interaction of the experimental arrangement with macro-object, the fact that subjects take part in quantum phenomena in micro-cognition is exposed completely. But the subject's participation and the subjective intervention here are only in the sense of description.

There are mainly two ways of interventions in micro-cognition: observing intervention and describing intervention. Observing intervention denotes that subject as an observer intervenes quantum phenomena by arranging the experiment. And describing intervening is a subjective intervention to objective contents by using language while we describe the observation results. It based on the fact that the final form of the observation result and the interpretation of it expressed by using the specific language with anthropological characteristics.

From the descriptological point of view, the concepts of subject and object are created by subjective stipulating. We make the differentiation and boundary delimitation between them according to the needs

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of our cognition.

The descriptological turn in micro-cognition is an important essential problem in the research of micro-cognition. It relates to the realistic research and the descriptological research as well as the description and the interpretation in micro-cognition and the relations between them.

Interpretation has been the deep-rooted natural inclination of human being since ancient times. But interpretation has been fading out and description fading in because of the understanding crisis in micro-cognition. As the concentrated expression of this change, the important turn of modern science from the interpretation of nature to the description of nature indicates a new developing trend of contemporary philosophy. Description might be based on certain interpretation, but it is not necessary that all descriptions must have some interpretative commitment.

The fading out of interpretation and the fading in of description constitute one of the very important developing trends of contemporary epistemology. The relative losing of understanding in micro-cognition originates in the very nature of the relation between macro-subject and micro-object.

The dissociation of description from interpretation is a very important characteristic of micro-cognition. It makes the description itself an important epistemological problem.

Description has been becoming more and more important with the development of human cognition. It itself has specific characters, laws, means and process of development. The research of description is an indispensable theoretical premise for building micro-epistemology.

Descriptology is the theory of description. Its fundamental problem is that human being how to and in what extent is able to describe the

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objects. And its main contents include the nature, laws and ways of description and so on.

The approach of descriptology is totally different from that of realism. It has a different position. To distinguish the two positions is an important premise to resolve the theoretical problems in micro-cognition.

The most important event happened in micro-cognition is the descriptological turn. Which has two basic characteristics: the epoche of the essence of micro-object and the linguistic orientation. Because of the descriptological turn, the theory of micro-cognition has the descriptological nature. Which means that the definition of truth in micro-cognition must be changed correspondingly; the concept of truth describes the certain connection between subject's questioning and the response of object. Many puzzling problems in micro-cognition are all rooted in the confusions of the characteristics of objects themselves and the characteristics of description, or the unaware of complicated relations between interpretation and description.

A kind of very important philosophical problems rises unprecedentedly in micro-cognition, which are the special problems of description. The special problems of description in micro-cognition include concept description and symbol description, Single description and complementarity description, causality description and probability description, etc.

Concept description, symbol description and the relation between them reflect deeply the cognitive relation between the human being as the specific macro-subject and micro-object.

We can but describe with abstract mathematics in quantum mechanics because concept description lost efficacy in micro-world. One

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of the important differences between abstract mathematical language and the language of classical-physics is that the former has only the function of description, and the later also has the function of interpretation besides description. We'll face a typical situation of interpretation missing when mathematical description does not have the corresponding to the realistic experiences. We must therefore not only use the abstract mathematical language, but also the language of daily life in micro description in order to achieve the complementarity of visual description and abstract description.

Complementarity description is a topic of opinion vary but thought-provoking. The paradox it reflects makes us have to pay special attention to this special way of description.

6 As a matter of fact, all contradictions in complementarity description are only apparent ones. On the one hand, a proper description doesn't certainly mean a correct interpretation. On the other hand, we are able to describe only in a certain way doesn't mean that the object we are describing exists in this way.

Complementarity description has been the basic way we describe things all along. Simply because they all could be regarded as the harmonious combination of single descriptions, complementarity description in daily life and classical physics doesn't show up any characteristic inconsistent with the features of human sense perception.

The substance of complementarity description lies in the following fact: the nature of everything only shows up in the process of interaction with some others. Because the macro observation of micro-object is the only way of interaction in which we may perceive the existence of micro-object, and the result of the interaction has the nature of individuality, we must design enough experiments in order to find out as many

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aspects as possible of the nature of micro-object, the complete description of the observation results therefore can but make in the complementary way.

Probability description and causality description involve some very important problems in micro-cognition and even in the whole philosophy. The investigation in this book shows that probability is the characteristic of description. It's an objectivization understanding of probability to regard it as the nature of objective process.

The descriptological understanding of probability leads naturally to the descriptological view of causality. It is totally different from the traditional one. From the descriptological point of view, we only use the concepts of "cause" and "effect" to describe some processes but not that there are actually such kind of things in the processes themselves. Niels Bohr's complementarity description is still causation description. It is a special form of causation description: complementary causation description. It revealed deeply the concrete unify of causation description and probability description in micro-cognition that the statistical laws of quantum describe the action of individuals in a statistical way.

We can see the extreme complexity of the description of micro-world from the special problems of description in micro-cognition.

With regard to the description of micro-world, quantum description and superstring description are two representative ways. And "Schrödinger's cat" is the most typical explanation of the authenticity of description of micro-world. We are able to get a glimpse of the very nature of human cognition in the scale out of ordinary through descriptological analysis of them.

The bewildering of the micro-world formed, on the one hand, the cognitive barrier never existed before and provided, on the other hand,