

Erik Rasmussen, *Complementarity and Political Science: An Essay on Fundamentals of Political Science Theory and Research Strategy*, Odense: Odense University Press, 1987, pp. 134.

The political scientist is part and parcel of society. His subject matter may be altered considerably by his very studying it.

Erik Rasmussen

We are slowly strolling the narrow dirt road up to the Bong Song Buddhist temple, just outside the gate of the Kyung Hee University campus in Kwangnung, where I am a visiting professor. Rector Lew Seung-guk, an inexhaustible source of Oriental wisdom, is explaining Buddhist imagery. Kim Woon-ho, caretaker of foreign lectures, acts as an interpreter.

Yin-yang in Chinese and Oriental thought, Lew says, are opposites that complement each other. They are applied to all aspects of human life. Yin is conceived of as Earth, dark, passive, and absorbing. Yang is conceived of as Heaven, light, active, and penetrating. Night is yin, daytime is yang. Valleys and streams are yin, mountains are yang. Broken lines are yin, unbroken lines are yang. Women are yin, men are yang. In politics, the ruling party is yang, the opposition yin.

At this point in the exposition, I cannot resist telling an unexpected story about Niels Bohr, »one of the greatest scientists and thinkers of all time« (*Encyclopedia Americana*). Bohr, I say, constructed the pictorial model of the atom as a number of electrons orbiting around a nucleus. Ah, says our expert on oriental philosophy, who immediately discovers connections. The atomic nucleus might very well be considered yang, and the electrons revolving around it yin.

Even more interestingly, I say, Bohr in his famous principle of complementarity argued that a full description of the behavior of certain objects can only be obtained by *two* descriptions which are incompatible but together constitute an exhaustive pictorial portrait. Bohr himself noticed the parallel between his complementarity principle in quantum physics and classic Oriental dualistic thought, because when he was dubbed a Knight of the famous Danish Order of the Elephant he chose as his coat of arms the yin-yang symbol, accompanied by the inscription *Contraria sunt complementa*.

The story about Bohr and the yin-yang idea is briefly told by Erik Rasmussen in his treatise on *Complementarity and Political Science*. The study is humbly termed »an essay, not because my ambitions are modest, but in awareness of my limited qualifications«. The purpose of exploring the applicability of the principle of complementarity to a field so distant from physics as political science is a bold one, to say the least. Yet, it is highly commendable. I have come to believe that scholarly progress is often achieved by import of problems, concepts, and theories from other disciplines. However, to a political scientist, the task of reviewing a book like this is demanding, because ideally you should be equally well versed in physics and epistemology as in political research. And complementarity itself contains several layers of meanings. Maybe not even Bohr

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himself grasped the full implications of his innovation. Rasmussen tells us that Aage Petersen, intimately conversant with Bohr's ideas in the latter part of his life, wrote in his obituary: »For me, Niels Bohr's philosophy ... fell into three parts: one which I thought I grasped; one which I did not understand, but which I felt was clear to Bohr; and, finally, a part which Bohr himself saw only dimly.«

The notion of complementarity hinges upon an insight – now a commonplace – that the relationship between the researcher and his object – the subject-object relationship – presents a crucial problem in empirical science. In physics, the idea originated in difficulties in understanding the nature of light.

In classical physics, light propagation had long been pictured as waves. However, in some experiments light behaves as if it is particles or corpuscles, so-called photons. Rasmussen summarizes succinctly:

»The situation was like this: some experiments show light to be particles, others which are just as incontrovertible that it behaves like waves. 'Since the idea of waves is indispensable to the account of the propagation of light, there could be no question of simply replacing it with a corpuscular description.' ... Bohr's answer was that the two descriptions are complementary, meaning thereby that, though incompatible because describing mutually exclusive observations, both of them are indispensable and both descriptions, together, are necessary for an exhaustive pictorial description.«

The conclusion that the two descriptions were complementary was to Bohr a consequence of the fact that a basic assumption of classical physics – that the conditions of observation, for instance an experimental device, would not influence the object under investigation – will not apply to the world of atoms. On the contrary, interaction always will take place between infinitely small objects and the tools of observation.

In Rasmussen's mind, Bohr's notion of complementarity »seems to be the most indisputably original contribution to epistemology by twentieth century Danish science, and as to international importance on an even footing with that of Søren Kierkegaard in the preceding century«. It triggered a substantial scholarly debate. Many outstanding physicists found it impossible to take Bohr's view. One of them was Einstein. »Der liebe Gott würfelt nicht,« he is reported to have retorted during one of their many exchanges.

Gradually, however, the debate died down. Today, the principle of complementarity is generally accepted in physics.

Bohr's ponderings concerning complementarity originated in the subject-object problem to which quantum physics had opened the eyes of physicists. There is, according to Rasmussen, no cogent reason to posit that a subject's observation of an object will always be exhausted by means of two and only two observational situations. Bohr however, consistently clinged to a dualistic conception of the relationship between subject and object.

Are there any parallels in the social sciences to the epistemological situation caused by the breakthroughs in physics?

As a starting point for this venture, Rasmussen has cogently stated the epistemological meaning of complementarity as two interconnected assertions:

»1) The observation of certain objects implies interaction between the objects and the conditions under which the observation takes place, so that any description of the observation must necessarily include these very conditions, and 2) Exhaustive description of the behavior of certain objects is obtainable only by means of descriptions which are incompatible because describing mutually exclusive observations.«

I entirely agree with Rasmussen that none of the two assertions – and particularly not the first one – is immediately startling to social scientists. We know that our very observations of reality may alter it. We are all familiar with Hawthorne effects, interviewer effects, and self-fulfilling prophecies.

Bohrian complementarity engenders that we have pairs of portrayals which are mutually exclusive and conjointly exhaustive. Rasmussen argues such strict dualistic complementarity can actually be encountered in political science as well. Our perennial value problem, as expounded by Max Weber and interpreters of Weber such as H. H. Bruun, might be stated in this fashion. Politicians must strive for values which can never be scientifically validated. Yet, they must also gather well-supported empirical data about consequences of their actions. These subjective and objective elements are mutually exclusive and yet interwoven with each other and both indispensable, in politics as well as in political research, i.e. only together they are exhaustive.

However, it is also Rasmussen's view that in political science there is no reason to believe that mutual exclusiveness should occur only in pairs. This conclusion is suggested in his analysis of the concept of equality. It is impossible in a short review to do justice to the author's complex argument on this account. However, he starts with equality in the sense of equal opportunities and equal results and uses educational policy as a case. Equal opportunities would mean that the school system would be formally open to all. All people would compete on equal terms to enter. Equal results, however, would engender something essentially different. Observable differences with respect to social preconditions such as less stimulating milieus must be counteracted in order to make the result as equal as possible. This means positive discrimination, the resources being used to favor those who are socially handicapped. »Equality of results is to be obtained by distributing resources unequally among the individual pupils, consequently discriminating negatively against some of them for the sake of equality of results.«

Equal opportunities and equal results seem to be mutually incompatible. If we want to dissect discourse of equality, we are compelled to analyse it from the point of view of equal opportunity as well equal results, and we must conclude that, though incompatible, both concepts are necessary for an exhaustive description of what is meant by equality. This, according to Rasmussen, is a situation rather akin to that of quantum physics with respect to light.

However, in political science complementarity may not always be restricted to two observational arrangements. Three, four, five, or even more arrangements may be more expedient. We are confronted, not with strict complementarity, but with its cousin, which Rasmussen has christened supplementarity. This notion covers »those cases in which descriptions cannot be said to be collectively exhaustive, even though they are certainly mutually exclusive, meaning thereby that

they are incompatible *and* that none of them can be intersubjectively falsified.« This is, as far as I can understand, an innovative idea, and future will show how important it is. Argues Rasmussen:

»Physicists seem to be certain that according to the experimental situations, light must be described as behaving *either* as waves *or* as particles in macroscopic language; correspondingly, *either* the position *or* the momentum of a particle may be stated exactly. Political scientists may analyse some situations from the points of view of two or more concepts of, say, equality and ascertain that the results are, certainly, incompatible, and mutually exclusive because we cannot invalidate any of the concepts. But we cannot be convinced that the results are collectively exhaustive, because we cannot know if it might not be possible to analyse the situation from the point of view of one more concept of equality.«

In other words, neither yin-yang nor dualistic complementarity are sufficient in political science.

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Søren Riishøj, *POLEN – den særlige vej til normalisering af det politiske og økonomiske liv siden december 1981*, Esbjerg: Sydjysk Universitetsforlag, 1987, 163 s., kr. 130,00.

Søren Riishøj fra Center for Øst-Vest forskning ved Sydjysk Universitetscenter anfører i sin bog om udviklingen i Polen siden 1981, at formålet med den er at fremme kendskabet til det store naboland mod syd. Mere konkret er det forfatterens håb, at bogen vil kunne finde anvendelse i gymnasiet eller ved introduktionskurser på universitetsniveau.

Hovedvægten i bogen lægges på at forklare og redegøre for general Jaruzelskis forsøg på at skabe en politisk og økonomisk fornyelse i Polen. I et indledende kapitel gennemgår forfatteren nogle opfattelser af forsøgene på at få en normalisering af udviklingen i landet. Der omtales for eksempel et par systemkritikers vurderinger, ligesom forfatteren selv fremkommer med sin egen et par steder. Kapitlet er så afgjort bogens mest interessante.

Det er naturligt, at man flere steder sætter spørgsmålstejn ved repræsentativiteten af de udvalgte systemkritikere. Omtalen af Leszek Kolakowskis synspunkter er selvsagt interessante. Men det forekommer at være et åbent spørgsmål, hvor repræsentativ han er, og hvor stor en gennemslagskraft han har på aktørerne i det politiske spil i dagens Polen.

Det gælder generelt, at forfatterens opfattelse ikke præsenteres et samlet sted i bogen. Dette er en mangel. Således savner anmelderen en egentlig begrebsmæssig ramme, der kunne danne baggrund for den efterfølgende – meget empirisk orienterede – fremstilling.