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Quaas, Friedrun

Universität Leipzig

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Friedrun Quaas

Until recently, the name of Wolfgang Mühlpfordt (1872-1928)[1] was certainly not among those a theoretical economist was expected to know. Mühlpfordt has now been rehabilitated not only in the *Cambridge Journal of Economics*[2], but also in the German *Jahrbücher für Nationalökonomie und Statistik*.[3]

There are many points of correspondence between my own interpretation and the assessments of Mühlpfordt by Gilibert and by Howard and King. However, I believe it is possible to add some further remarks and also to make some corrections.

I.

It must indeed be admitted that by the standards of modern scientific terminology Mühlpfordt's writings are not always clear enough and that the meaning of the text seems to be opaque in several places. But are we really entitled to make this criticism of an author who wrote a hundred years ago? Unlike Howard and King I consider a definite interpretation of Mühlpfordt's text to be possible, there are sufficient points of reference with what in the meantime has become accepted knowledge about the so-called transformation problem.

II.

There cannot be any doubt about the purpose of Mühlpfordt's writings. He says clearly that it is the calculation of divergencies between prices and values on the basis of an equal average rate of profit (Mühlpfordt 1895, p. 96). We have to be aware of the fact that his solution is based on classical value theory, and must therefore be regarded as an immanent critique of Marx. It may prove helpful to 'translate' the terms used by Mühlpfordt into those employed by Marx; we therefore have to determine the divergencies between prices of production "p" and labour values "a".

Mühlpfordt introduces the term *price of a commodity W* by the following formula

$$P(W) = a \cdot x$$

where x stands for an unknown coefficient which we have to calculate. There is no reason not to interpret P(W) in this formula as the production price of an *unit* of commodity W. But it seems clear to me that Mühlpfordt's following formulas make sense only when P(W) refers to the prices of *aggregates of commodities* (outputs), i.e. prices multiplied by the quantity produced. Since we can anyway normalise the output at one unit there is no reason why "Mühlpfort can legitimately be criticised for this inconsistency in the use of his terms". (Howard and King 1991, p. 355)

III.

The quarrel between Gilibert on the one side and Howard and King on the other about the meanings of the terms a_i and a_{ij} used by Mühlpfordt can be resolved by consulting Mühlpfordt's doctoral dissertation, where those variables are clearly defined:

(1) We refer to the time taken to produce a commodity W_i ("Herstellungszeiten") by the term a_i. (See page 24.) Two pages further on he identifies the labour-time required to produce an article with its "natural" or "social" value.

(2) On page 25 we read that a_{p1}, a_{p2},... refer to those parts of commodity- quantities W_1, W_2,... which are required to produce the whole mass of commodities W_p. These are the "share-coefficients" in Gilibert's interpretation. (Gilibert 1991, p.353.)

Mühlpfordt's dissertation, which includes essentially the same mathematical economic model as that in his article has the advantage of being fuller elaborated and free of misprints.

IV.

The controversy about the (n+1)th equation used by Mühlpfordt in my view seems to be based on a misleading interpretation by Gilibert as well as by Howard and King. Both sides claim that Mühlpfordt follows the principle of *equating total profits with total surplus value*. (Gilibert 1991, p. 354 and Howard & King 1987, p.266) They do not take account of Mühlpfordt's distinction between the terms *labour time embodied in a commodity (die in einer Ware enthaltene Arbeitszeit)* and *labour time used up for producing a commodity (zur Herstellung einer Ware vergeudete Arbeitszeit)*. Let us try to use this distinction consistently. Both terms are indicators of the commodity-value and its magnitude. But whereas the former means the entire value embodied in a commodity, the latter indicates merely the labour- time really used up by the labourer, without the transfer of the constant capital to the product. In Marx's terminology we have the corresponding terms *(total) value of the product ("Produktenwert")* and *value-product or new-value ("Wertprodukt" or "Neuwert")*. The labour-time used to produce a commodity comprises not only that used to produce the surplus product (surplus labour-time), but also that used to produce the necessary product expressed in wages (necessary labour-time). For this reason, it is necessary to separate variable capital (expressed in wage-goods) from constant capital as soon as the term *vergeudete Arbeitszeit* comes into use. If Mühlpfordt considers the sum of all values as the sum of all labour-time used in producing the output, he means certainly not the sum of surplus-value, but the sum of new-value. Strictly speaking, Mühlpfordt is using neither the Marxian principle that *total value equals total price* nor that of *the equality of total surplus-value and total profit*. He has created another new *invariance postulate*[4]: *the sum of new-values equals the sum of their prices*.

Only if, like Gilibert, we are unwilling to consider v as a part of labour-time used up for producing the output, and as a result we subtract not only c, but also v from the value of the product (labour-time embodied in the output), only in this case can Mühlpfordt's formula be interpreted as the principle that *total surplus-value equals total profit*. In my opinion this interpretation does not do any justice to what Mühlpfordt meant.

First he insists several times - verbally, not mathematically - that the sum of values has to be equal to the sum of prices (Mühlpfordt 1895, pp. 96, 97). The ambiguity of his formula arises only from the fact that he is using the term "sum of values" in a incorrect matter: he does not, as one would expect, refer to the sum of the labour time embodied in the output, but to the labour time used up in its production.

Second, it is known (see Howard and King, 1991, and Quaas, 1992) that Mühlpfordt had correctly transformed this assumption into a mathematical formula in his dissertation (see Mühlpfordt 1895, p.97). I see no rational reason why he should have changed this clear account later unless he was consciously using this new postulate. But in that case, we have less reason than ever to call his postulate ambiguous, as Howard and King continue to do.

V.

The remark that Mühlpfordt "made no further contribution to Marxian political economy" (Howard and King 1991, p. 256) must be qualified, since there are more publications than those quoted by Howard and King (see my bibliography). But it remains true that the transformation problem plays no role in these writings. The papers published around 1919 give scarcely any indication of his intellectual past. Mühlpfordt harshly reprimands German social democracy and accuses it for contradictions between theory and policy (Mühlpfordt 1919[1], p.2), calling socialdemocratic policy "a policy of harmful sloganizing" (Mühlpfordt 1919[2], p.17). As far as I know, Mühlpfordt was a adviser to business enterprises in the last years of his life. He died on January 2nd, 1928, in Köslin (now in Poland) as a corporation lawyer.[5]

VI.

We do not know why Mühlpfordt did not react to Bortkiewicz's famous articles, to which he would certainly have had something to say. This follows from a structural comparison of the mathematical models used by both authors. On the basis of my interpretation of Mühlpfordt's writings as an immanent criticism of Marx's theory I have applied Mühlpfordt's model to the 3-sector scheme used by Bortkiewicz, yielding the result that both models are structurally identical in that case.[6] In this way it is proved that Mühlpfordt would really have been capable of making a substantial contribution to that discussion. But probably he had lost all interest in the topic by this time. This would be understandable in view of the way he was ignored. First there was a misleading and vicious commentary on his dissertation in the journal "Die Neue Zeit. Revue des geistigen und öffentlichen Lebens", edited by Karl Kautsky. The commentator depreciated his effort by claiming that he has said nothing new about price theory. Mühlpfordt was hopeful that this misjudgment would be corrected some time.[7] How disappointed he must have been after his second attempt, when instead of the expected response there was an icy silence.

VII.

There are no clear signs why Mühlpfordt's article remained undiscussed at the time - in spite of the fact that it appeared in a then famous journal. Maybe it was the arrogance of the Marxian "experts"; maybe they really did not know what to do with it. Moreover, we can not be sure whether Bortkiewicz deliberately failed to notice Mühlpfordt. On the other side, we can not

exclude the possibility that Bortkiewicz was inspired to write his own articles not only by the Russian economists Tugan- Baranowsky and Dmitriev whom he cited, but also by the German Mühlpfordt whom he did not. Bortkiewicz had an excellent knowledge of the field of German economic literature at that time. He was author of many articles in the same journal in which Mühlpfordt's article has been published, even one in the same year. Could he really have failed to notice Mühlpfordt's paper?

VIII.

For all these reasons I consider a historical reassessment to be required. It is not Bortkiewicz who was the father of a correct method for the solution of the so-called transformation problem, because Mühlpfordt found one before him. In the long discussion of this problem Bortkiewicz has been eulogised again and again. It is now time to correct this judgment and to give Mühlpfordt at least the same title. Moreover, Mühlpfordt was more advanced than Bortkiewicz, since his mathematical approach is of more general validity and he prepared the way for the modern theory of production prices which is now associated with, among others, the name of Piero Sraffa.

Notes

1 The name is *Mühlpfordt*. The wrong spelling *Mühlpfort* has its origin in the article from 1895.
2 I would like to thank Mr. B. Schefold who drew my attention to the discussion in the *Cambridge Journal of Economics*.
3 Cf. Quaas (1991). The manuscript was given to the editors of "Jahrbücher für Nationalökonomie und Statistik" in summer 1990.
4 F. Seton remarked already that these well-known alternative postulates do not exhaust all possibilities (Seton 1956, p. 153).
5 Cf. Koerner (1930), section Mühlpfordt-Mühlpfort-Mühlenpfordt.
6 Cf. Quaas (1991) and Quaas (1992), chapter 4.
7 Cf. Mühlpfort (1895), foot-note 1, p. 98.

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Friedrun Quaas, University of Leipzig
e-mail*: quaas@wifa.uni-leipzig.de*
homepage: www.friedrun-quaas.de