

# Letter to the editor

## Famines: the Bowbrick–Sen dispute and some related issues

'Throw your mistemper'd weapons to the ground.'  
*Romeo and Juliet, Act I, Scene 1*

'Seal up the mouth of outrage for a while,  
Till we can clear these ambiguities,  
And know their spring, their head, their true descent.'  
*Romeo and Juliet, Act V, Scene 3*

*Sir/Madam:* It is perhaps presumptuous for me to expect to be as successful as the Prince of Verona. In any case, he finally admits that he is partly to blame for the troubles he has witnessed!

Whatever else may be said, the controversy between Mr Bowbrick and Professor Sen in the last issue of *Food Policy* does not lack an element of excitement. In this clash over the interpretations of famines in general and of the 1943 Bengal Famine in particular, there cannot be much doubt that in the verbal fisticuffs Professor Sen is a clear winner.

I started with some considerable sympathy for Professor Sen. Mr Bowbrick's earlier paper on this subject to the Agricultural Economics Society, and for all I know that to the Development Studies Association Conference (p126, Ref 4), should certainly have been formulated less aggressively. And Professor Sen is justified in complaining that the *Food Policy* critique contains some errors of attribution, as well as points which might have been better phrased.<sup>1</sup> Yet, after the semantic whirlwind of an 'affluent combination of conceptual confusions, empirical misstatements and systematic misrepresentations' and other such items, as well as the failure to note and answer many of Mr Bowbrick's more important points, I regret that the Drummond Professor could not have found a more generous manner of reply.

This comment does not intend to pick up every point and counterpoint, which would only generate more contention and confusion than it may in any case produce. It takes up certain critical issues to argue that there is much of substance in Mr Bowbrick's

analysis. However, a few minutiae may be in order first.

1) There is nothing of 'a hint of battiness' in attributing Professor Sen's theory 'to periods earlier than its publication' (p125). This is a perfectly orthodox means of categorization.<sup>2</sup>

2) Mr Bowbrick's discussion is 'rendered rather chaotic by his persistent confusion between 1) availability decline over time, and 2) supply inadequacy and shortage at a point of time' (p126). I do not find this persistency.

3) Mr Bowbrick is accused of *suppressing* the context of some of the Famine Inquiry Commission evidence, sure in his 'faith in the gullibility of the reader' (p128). Later, I shall support Mr Bowbrick's view that Professor Sen's reference to the work of Professor G. Blyn misleads the reader. But this is an *inadvertent* error, a fallibility which he might allow for his opponent.

4) Developing this last criticism, Professor Sen states that the error 'provides Bowbrick's basis for rejecting both the official estimate of food production and the Famine Inquiry Commission's own adjusted figures' (p128). This is totally unfair. It is a rather small part of a much more detailed argument, as will be illustrated by some of Mr Bowbrick's material specified later.

5) Professor Sen states that 'In arguing against my view that the Bengal Famine was related to the "uneven expansion of purchasing power", Mr Bowbrick begins by taking, out of context, an illustrative example . . . to outline the general nature of the conflict (which can be between one group of the poor against another) involved in a famine boom. Since I had made the general remark that "something of

this nature happened in the economy of Bengal in 1943", Mr Bowbrick promptly takes the illustrative figure to be *exactly* those of Bengal in 1943' (p130). If the reader will check the quotation, given on p117, he may feel that the 'general remark' was something more, the punch-line, and that it could reasonably be interpreted as signifying that something close to the specified magnitudes applied to Bengal. Yes, Mr Bowbrick should have qualified his calculation, but he was entitled to believe that the detailed example was meant to be near reality – the 'poor section' being, say, somewhere between 16% and 24% of the total population, instead of the 20% he used. On this basis his calculation would have constituted a forceful point, and not much different from that shown on p117.<sup>3</sup>

### Sen's attitude to FAD

I have not read the full set of documents which Mr Bowbrick claims show Professor Sen's 'scathing' attitude to those who emphasize sudden food availability decline (FAD). But on the basis of the leading item, *Poverty and Famines*, and a 1981 Quarterly Journal of Economics article,<sup>4</sup> Professor Sen gives short shrift and is not exactly complimentary:

- '[If] the approach of entitlements . . . appears odd and unusual, this can be because of the hold of the tradition of thinking in terms of what *exists* rather than in terms of who can *command* what. The mesmerising simplicity of focusing on the ratio of food to population has persistently played an obscuring role over centuries, and continues to plague policy discussions today much as it has deranged anti-famine policies in the past' (*Poverty and Famines*, p8).
- 'The FAD approach gives little clue to the causal mechanism of starvation, since it does not go into the *relationship* of people to food. Whatever may be the oracular power of the FAD view, it is certainly Delphic in its reticence' (*Poverty and Famines*, p154).
- The critical FAD-ist concern over

approaches to measuring changes in the aggregate food supply/demand and balance are the central issues in the present controversy. Mr Bowbrick has made a number of substantial points which are far from adequately answered.

Professor Sen states (p128) that his empirical analysis was based on examining both the official estimates and those "adjusted" figures given by the Famine Commission. In *Poverty and Famines*, the adjustments to the production estimates are described as follows:

The official estimates of agricultural production in India have been criticized for a long time, eg by P.C. Mahalanobis. Among recent contributions, Blyn (1966) provides fairly comprehensive estimates of agricultural trends in India, though yield data are not given separately for Bengal, Bihar, and Orissa. But the picture of a better food production situation in 1943 compared with 1941 is confirmed. . . . Some corrections to the official estimates were carried out by the Famine Inquiry Commission itself, on the lines suggested by Mahalanobis and others. These include corrections also to the trade data, to increase coverage of movements across the frontier by road or by country-boat (pp58-59).

The reader might reasonably assume that Professor G. Blyn's *Agricultural Trends in India 1891-1947: Output, Availability and Production* significantly supplemented earlier data. Yet, as far as I can see, Mr Bowbrick is entirely right. Professor Blyn was working with the same data as the Famine Inquiry Commission and cannot add to our understanding of annual fluctuations in supply in the critical years.

Professor Sen's Ref 11 (p128) does not address Mr Bowbrick's concern (Ref 19, p111) that the reader will assume that the Blyn study provides independent evidence. Further, Professor Sen states that 'it is, in fact, no accident that Blyn chooses to use what Bowbrick calls "the same poor data"'. (Ref 11). Agreed - he had no alternative, and he judged it sufficiently accurate for his dominant purpose: the calculation of five-year averages for trend analysis.<sup>12</sup>

The official rice production statistics used by the Famine Inquiry Commission were based on subjective estimation

Table 1. Famine Commission adjusted estimates for rice (as % of official estimates).

Harvest year	Output	Output and net imports
1938	116.2	117.3
1939	115.1	115.6
1940	115.8	116.5
1941	112.8	113.8
1942	115.9	117.2
1943	113.2	112.7
Average	114.8	115.8

Source: calculated from *Poverty and Famines*, Table 6.2.

mates of planted area and of probable yields and not on post-harvest measurement. Mr Bowbrick outlines the procedure (pp111-12) and then raises three substantial points which Professor Sen only answers indirectly by re-stating his dependence on the Commission's adjusted estimates (and on Professor Blyn).

(1) Conditions made the system particularly difficult to operate in assessing the all-critical 1952 *aman* rice crop in parts of Bengal - cyclone damage and political disturbances. (Surely the increasing strains and other priorities on the administration in this losing period of the war must have reduced the quality of survey supervision, to complicate matters further?) (2) A tendency found by Professor Mahalanobis for numerators to select the best fields and best areas of damaged fields could have given a serious upward bias with the severity of damaged *aman* crop of 1942. (3) Mr Bowbrick draws attention to my evidence in other situations that subjective valuation consistently tends to underestimate the extremes in variations of crops (and in some other agricultural values) substantially.<sup>13</sup>

The preparation of this letter has revealed an even more pertinent view: Some authors believe that the primary reporting agencies tended to overestimate bad years and underestimate good ones. In the absence of any positive evidence, it is difficult to say anything about the merit of such an assumption (M. M. Islam, *Bengal Agriculture 1920-1946*, Cambridge University Press, 1978).

The caution of the second sentence is excessive if, as seems likely, the UK and US evidence illustrates a much more universal tendency.

A plausible guess is that estimating biases of this kind could lead to a very poor crop being over-estimated by 3% - 5%, and a similar undervaluation for crop some part of the bias is probably covered by the Mahalanobis observation under point 2) above.

The net effect of these particular distortions may, or may not, be serious. However, when taken together with the other possible data inadequacies which Mr Bowbrick specifies (p112), they indicate the very large margin of error which is probably inherent in any standard statistical analysis of demand and supply. (The possibilities in the less standard techniques of quantitative model building are discussed briefly below.)

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possibly extremely low food stocks prior to the December 1942 harvest in Bengal gets half a page in *Poverty and Famines*. That may (or may not) suffice, but it deserves a better title than the dismissive 'The so-called "carry-over" of old rice' (*Poverty and Famines*, p62).

- Still on Bengal, 'when the time came to report the famine and assess what had happened, the Famine Inquiry Commission also adopted FAD as its main approach . . . The occurrence of the famine was squared with production and trade figures by assuming a sharp decline of that mysterious – and unobserved – "carry-over from previous years". Like the Phoenix, the FAD theory arose rejuvenated from the ashes, and it can be found today chirping in the current literature on the food crisis of the world, even making occasional references to the Bengal Famine, "when floods destroyed the rice crop, costing some 2 million to 4 million lives"' (*Poverty and Famines*, p83).<sup>5</sup>
- The general review of FAD thinking in the reprinted article is too short at less than one page and, as will be argued below, insufficiently representative.

These quotations and references fully cover for the two sources Professor Sen's general view of FAD thinking. Hardly 'scathing', but when seen in their general context and against the accompanying empirical emphasis of his case studies they are something more than just the trechant use of a forceful pen.

### Extreme and moderate FAD

Shlomo Reutlinger of the World Bank has said that Professor Sen 'has overreacted to the excesses of those who hold that famines are caused by a food availability decline'.<sup>6</sup> Part of the problem is that Professor Sen seems not to have cast his net widely enough and has caught virtually none but the extremists.

His bibliographies contain the names of many writers in the 1970s whom he would consider FAD-ists,

such as the Erlichs (distinct extremists). But he quotes none in *Poverty and Famines*, and in his article cited above he takes from only two books, one by René Dumont and one by Brown and Eckholm. Dumont was an eminent French *agronomist*. Brown and Eckholm were not, I think, economists. These, like many others who wrote from outside economics, provided the FAD-extremists.<sup>7</sup>

I do not know by any means the work of all those commentators on his drafts that Professor Sen mentions, eg as in *Poverty and Famines*, pviii. But those I recognize were at the time either generalists on development, entitlement oriented in their interest in the rural sector, or population specialists. Those with some concern for FAD-ism's contribution were Mohiuddin Alamgir and, I assume, Roger Hay. However, clearly missing are 'old line' agricultural economists who had been involved in the nitty-gritty of the workings of the price mechanism in agriculture.

In 1974–76 there was a strong emphasis among many economists on FAD – for the very good reason of the well known decline in global food supplies available to the Third World in 1972–75. Let it be conceded that for the time being many of us had forgotten the 'entitlement issues', or at any rate had pushed them well into the background in the face of other preoccupations. But, I doubt whether that carried beyond 1977. If nothing else, we had Radha Sinha and Keith Griffin to keep us up to scratch, as well as various radical political scientists.

It is highly speculative, and possibly self-serving, to guess today what might have emerged if Professor Sen had sought out non-extreme FAD-ism among economists more than he appears to have done, especially as our present judgments have been much stimulated by his own work, particularly its climax in *Poverty and Famines*, and for me at least by the present controversy.

However, it is likely that a successful hunt would have produced two ideas quickly.

*One:* there would have been a plea for the greater historical perspective which Shlomo Reutlinger sees as

missing.<sup>8</sup> If nothing else, there would have been the suggestion for inclusion of the distinctly, but of course not completely, FAD Irish famine of the 1840s as well as some of the pre-1943 famines in the Indian subcontinent – the latter coming from the evident stimulus to re-read that major study by B.M. Bhatia<sup>9</sup> – the Soviet famine and possibly some of the pre-1939 Chinese experience in which there were FAD elements.

*Two:* Bhatia most likely would have set some other bells ringing:

A part of the crop raised by the agriculturalist is retained by him for self-consumption. It has been estimated that before the War, half of Bengal's annual output of rice was retained by the producers and the other half found its way to the market. The marketable surplus was, however, a highly elastic quantity for, as is to be expected under the circumstances, the subsistence farmer will retain more if by selling a smaller quantity he could get sufficient cash to discharge his fixed money obligations of rent, moneylender's charges, etc (*Famines in India*, p320).

This notion of producers' reservation demand resulting in a *marketed supply* less elastic than *produced supply* was well established by 1945–50.<sup>10</sup> It is highly likely that the Bhatia statement would have produced a response making clear that a FAD element on economists' thinking incorporated both marketed and produced supply, thereby greatly strengthening its conceptual and empirical values.

Professor Sen refers to the proposal of M. Alamgir to modify FAD by identifying marketed supply as a distinct variable, but rejects it by insisting on using "availability" as conventionally defined (eg as used in Malthus's analysis), *viz.*, total available supply.<sup>11</sup> Professor Sen is denying a concept which would be well understood by many work-a-day economists sympathetic to 'sensible' FAD-ism in the late 1970s.

FAD is not explored sufficiently by Professor Sen. The complaint should be 'scant' rather than Mr Bowbrick's 'scathing'.

### Food supply/demand balance

The degree of reliability of the food production statistics and the

availability, as 'a reasonable way of looking at the carry-over problem in the absence of direct information' (*Poverty and Famines*, p62). He now says that he does 'not believe that moving averages analysis is a good method of dealing with carryovers in all contexts' (p129). It is never admissible unless one can be confident that the *implicitly* assumed changes in stocks are economically unimportant.<sup>17</sup> Even quite small changes can be critical for an economy at the margin of bare subsistence.

Professor Sen has not avoided the stock problem, but his view on it is implicit. He calculates an index of foodgrain availability (shown on a per capita basis) from one for total supplies. He is either assuming that within each year the actual totals are the same, ie zero carryover as Mr Bowbrick suggests, or that they differ from each other year by year by some unchanging and unanalysed proportion, which seems more likely.

Mr Bowbrick's attempt to set out a demand/supply balance sheet embodying Professor Sen's production data is entirely in order.<sup>18</sup> He has, of course, made life more difficult for himself: 1) His 'arbitrary assumption' on opening stocks in 1939 was meant, I suspect, as a level which seemed reasonable in the light of the apparent demand/supply conditions at the time. If so, he has a tenable position. 2) Somewhat more 'imagination' might have been introduced into the consumption assumptions, particularly by showing a substantial fall for 1943. Some short-term positive association with changes in current production probably should be incorporated for other years. 3) This adjustment would have avoided the strange negative carryover in November 1943.

However, the most critical issue would be the size of the fall in inventory from 1939 to 1943, given a tenable view on consumption, which would be independent of the assumed opening level of stocks.

Obviously, there is enormous conjecture in this approach, but at least it is out in the open. Professor Sen's approach may be closer to or further from the mark, but the problem is out of sight. If Professor Sen cannot pro-

duce a reasonably confident statistical statement as comprehensive as Mr Bowbrick's Table 1, he cannot make his case.

In this section of the controversy, Mr Bowbrick has demonstrated the weak foundations on which Professor Sen has built his statistical analysis of supply. He has convinced me at least that there is no way forward from Table 6.2 in *Poverty and Famines*, which is critical for Professor Sen. The production statistics of the Famine Commission seem much too unreliable, and there are no others.

### Unreliable statistics

'Mr Bowbrick is always rejecting statistics on grounds of their reliability . . . in favour of no statistics at all' (pp131-32). Mr Bowbrick is not quite so extreme, but his attitude is fundamentally correct. What is the use of statistical data if they are too unreliable to be used with any confidence? We have two approaches left.

*Standard economic analysis:* obviously, we can extend the use of the time-honoured techniques of analysis, bringing together whatever separate pieces of reasonably reliable information (qualitative or numerate), with theory as the link between these various stepping stones and as the test of the plausibility of the analysis and of its empirical content. Here Mr Bowbrick has pointed to two useful extensions of Professor Sen's work.

1) His section on speculation, elaborating his Figures 3 and 4,<sup>19</sup> demonstrates that price experience should be examined<sup>20</sup> for any implications regarding the importance of FAD relative to speculation by traders or households. The less the role of FAD and the greater that of speculation the sooner prices should break as 'profit taking' begins and hoarders see the opportunity to reduce idle balances.

2) Whether or not Mr Bowbrick is abusing Professor Sen's 'illustrative example' on the poorest 20% of the population, discussed above, he is at least attempting a necessary step in his section on 'uneven expansion of purchasing power'; ie testing whether or not the demand forces which Professor Sen emphasizes could be a suffi-

ciently powerful reinforcement of other non-FAD influences to explain the price experience without resorting to FAD.

There was a fivefold increase in rice prices, if we are to believe the data, between December 1941 and mid-1943. Intuitively, this change seems to require some very exceptional speculation and demand elasticities if FAD is unimportant.<sup>21</sup>

*Some non-standard analysis:* there is only one way which might offer some hope of resolving the disagreement over the respective role of FAD and the effective demand components of the entitlement approach, namely a simulation model of the Bengal economy in 1942 with sufficient structural and parametric variables to provide adequate, comprehensive permutations of their values to test the plausibility of alternative theories. In this way some insights might be obtained with the use of data which some would consider much too uncertain to support a single econometric model. This may, for all I know, be under way already. Others are much more qualified than I to comment further.

### A small concession from Sen?

When Professor Sen originally prepared *Poverty and Famines* there was insufficient information to incorporate the 1959-61 food crisis in China in the analysis. Yet in 1982 it could be said:

It is now clear that China suffered what can only be described as a very large famine during 1959 to 1961 . . . [Estimates] yield remarkably high figures of extra mortality over the food-shortage years . . . The scale of the Chinese food-shortage-mortality must be seen to be much larger than the largest famine in India in the last century, which occurred before independence . . . It is not difficult to explain why food output was so low in China during the period 1959 to 1961 but that in itself cannot explain the famine itself. Why did not the Chinese government import more food? Why did it not organize more redistribution between the different regions in the country . . .? Could there not have been a better rationing system . . .? In tackling these questions we have to look at the prevailing political beliefs and dogmas . . . and we have to look also at the nature of political organization and news-distribution systems in China.

Is this evidence for the significance of

FAD?; or an extension of the mechanics of entitlements?; or some of both?<sup>22</sup> It is certainly evidence of Professor Sen, in a stimulating paper which should be more widely known.<sup>23</sup> His aim is to widen perceptions on entitlements, but FAD has also slipped in without in any way weakening his main argument. Yet, Professor Sen's latest statements show no change in his fundamental position as set out in *Poverty and Famines*.<sup>24</sup> Mr Bowbrick's view that Professor Sen's theory can lead to famines by causing governments and their officials to neglect the impact of FAD is overdone, not only in manner of expression, but also in implication. There are famines where preoccupation with FAD could lead to a much more serious neglect of entitlements. But there is some truth that, in general, to err by overestimating FAD will lead to less harm than an assessment which overstates the entitlement component. Economic analysis designed to influence the real world must try to mitigate the consequences of its misunderstanding and misapplication.

Many readers of *Poverty and Famines*, not only Mr Bowbrick, have come away feeling that Professor Sen virtually rules out FAD effects. That is the *tone* of the book. Without abandoning his basic position, could he not in future emphasize that there might be a FAD issue in any famine and that care must be taken in this respect?

Mr Bowbrick's article is unlikely to undermine the fundamental part which Professor Sen played in our understanding of famines. But, warts and all, it makes its own significant contribution, and I hope that other readers will find it as usefully stimulating as my offering is intended to show.

George Allen  
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<sup>1</sup>Respective examples being: 'Unlike Sen, I consider that one cannot discuss famines without constantly taking into account aggregate food supply' (p106), and the title to Mr Bowbrick's Figure 4, 'Expected price if there was no shortage and excessive speculation (Sen's hypothesis)' (p119).

<sup>2</sup>In exactly the same way as one might claim to find Keynesian ideas in the writings of a few of the early nineteenth

century monetary writers (eg Henry Thornton). The issue would be the accuracy of the diagnosis, not one's mental state.

<sup>3</sup>Unless the reader can infer that the numerical component is somewhere near reality, he has no means of judging the practical significance Sen's general argument.

<sup>4</sup>'Ingredients of famine analysis: availability and entitlements', reprinted in A. Sen, *Resources, Values and Development*, Blackwell, Oxford, UK, 1984.

<sup>5</sup>Professor Sen is quoting from L.R. Brown and E.P. Eckholm, *By Bread Alone*, Pergamon Press, Oxford, UK, 1974.

<sup>6</sup>Shlomo Reutlinger, review of *Poverty and Famines in Economic and Cultural Change*, Vol 32, No 4, July 1984.

<sup>7</sup>Even where, as with Dumont, they were extremely sensitive to the needs for reforms to improve what Professor Sen came to call 'entitlements'. See René Dumont and Bernard Rosier, *Nous Allons à la Famine*, 1966, republished in translation as *The Hungry Future*, Andre Deutsch, 1969.

<sup>8</sup>Reutlinger, *op cit*, Ref 6.

<sup>9</sup>B.M. Bhatia, *Famines in India 1850-1945*, New India Press, 1963.

<sup>10</sup>The starting point would be J.R. Hicks, *Value and Capital*, Oxford University Press, Oxford, UK, 1939, Figure 9, or even the now very basic concepts in the late Lord Robbin's Elasticity of Demand for Income in Terms of Effort, *Economica*, 1930. On the applied side, for example and if memory serves, there were in these earlier post-war years some studies by French economists of the behaviour of 'autoconsumption' among the French peasantry, perhaps in part stimulated by the problems of securing marketed supplies in war-time.

<sup>11</sup>*Poverty and Famines*, Ref 15, p63. Is it only Professor Sen that is allowed to introduce additional analytical concepts? (Professor Sen is discussing a 1980 manuscript, *Famine in South Asia - Political Economy of Mass Starvation in Bangladesh*. I do not know how this corresponds to M. Amalgir's more comprehensive *Famines in South Asia*, published as a book in 1980.

<sup>12</sup>While indeed being 'among recent publications' (1966), Professor Blyn's work was much more dated. It was a PhD thesis based on study in the late 1940s and early 1950s, and as such was used by others around 1956-58, eg S.J. Patel, publishing in January 1958. See Bhatia, *op cit*, Ref 9, p311.

<sup>13</sup>G.R. Allen, *Agricultural Marketing Policies*, pp164-168, covering crop yield estimates and wool grading in the UK and livestock grading in the USA. This bias reflects a natural tendency for most people generally to avoid extremes, or to be unwilling to accept extremes, in many business situations.

<sup>14</sup>The six years may over represent the influence of severely poor crops. If so, the trend might be put at around 15.5%,

weakening but not destroying the argument.

<sup>15</sup>Although Mr Bowbrick seems to be rather over-egging the pudding when quantifying the likely error ranges.

<sup>16</sup>Mr Bowbrick contrasts Professor Sen's extremely brief review with the ten pages of analysis by the Famine Commission (p113, Ref 32).

<sup>17</sup>Professor Sen does not develop such an argument, although he could have done so had he been inclined to accept the opinion of one of the Commission members, Mr M. Afzal Hussain. See *Poverty and Famines*, p62 for Hussain's (apparently minority) view that 'a carry-over in the sense of surplus over consumption must have vanished years ago'.

<sup>18</sup>Perhaps I should take any blame. My suggestion has started Mr Bowbrick down this particular 'path of dalliance'.

<sup>19</sup>But removing '(Sen hypothesis)' from the second title.

<sup>20</sup>Assuming the data is reliable enough for the task.

<sup>21</sup>It all might work out if there was strong reserve demand by farm families, giving a backward sloping *marketed* supply curve as their terms of trade improved. But, as already noted, this is FAD with a vengeance. (Should we say that the entitlement of the farm family sector had improved? But that, I think, would be perverse, and not what Professor Sen intended.)

<sup>22</sup>It would be interesting to know how far Mao's policy of 'draining the fishpond' reflected the belief that there was just about enough food to get by. To the extent that it was, the neglect of FAD is clear.

<sup>23</sup>Food battles: conflicts in the access to food', Twelfth Coromandel Lecture, New Delhi, December 1982, in *Fertilizer News*, Fertilizer Association of India, February 1983.

<sup>24</sup>His Elmhirst Lecture to the International Association of Agricultural Economists, August 1985, and its slightly edited version 'Food economics and entitlements', *Lloyds Bank Review*, April 1986.

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