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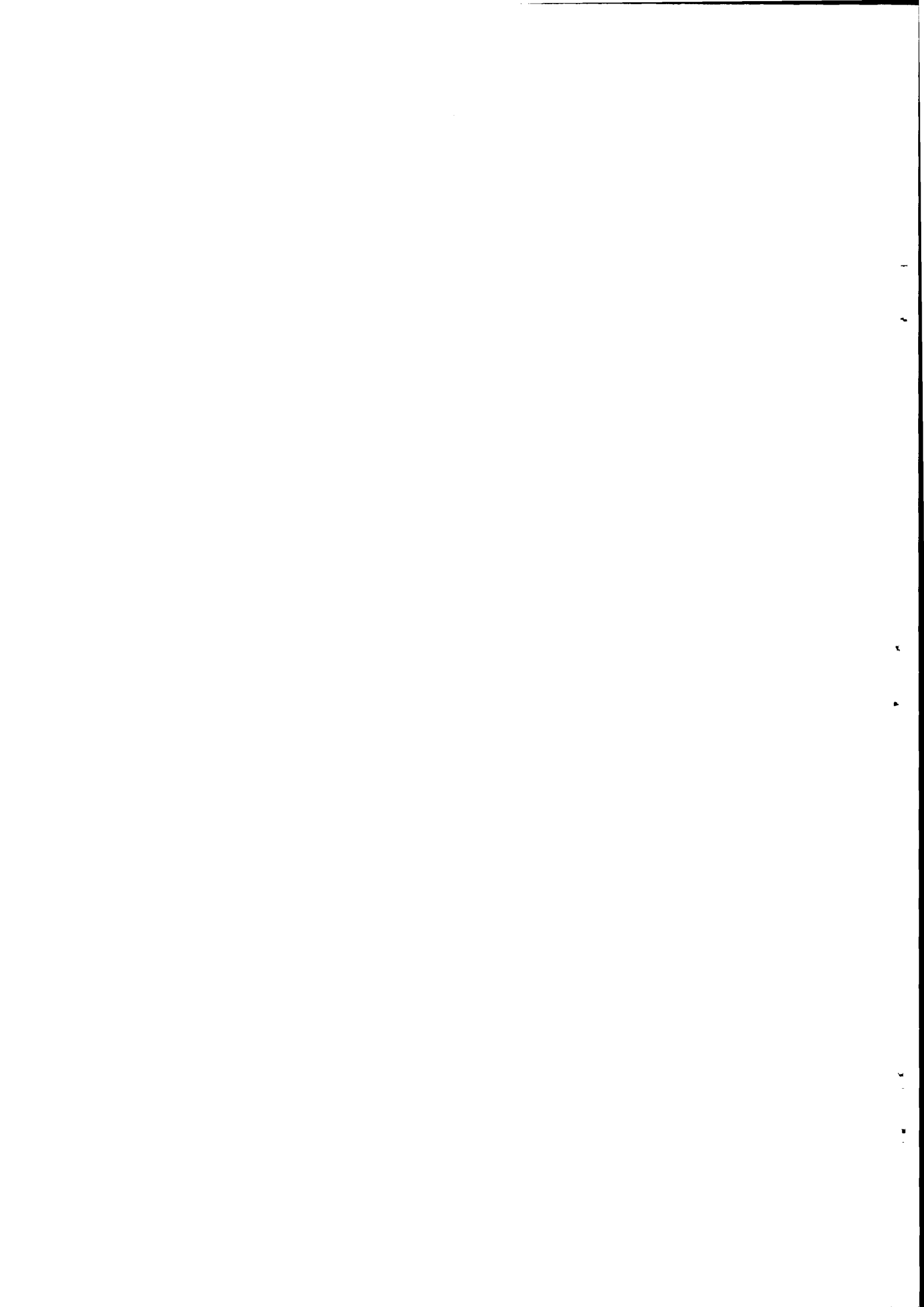
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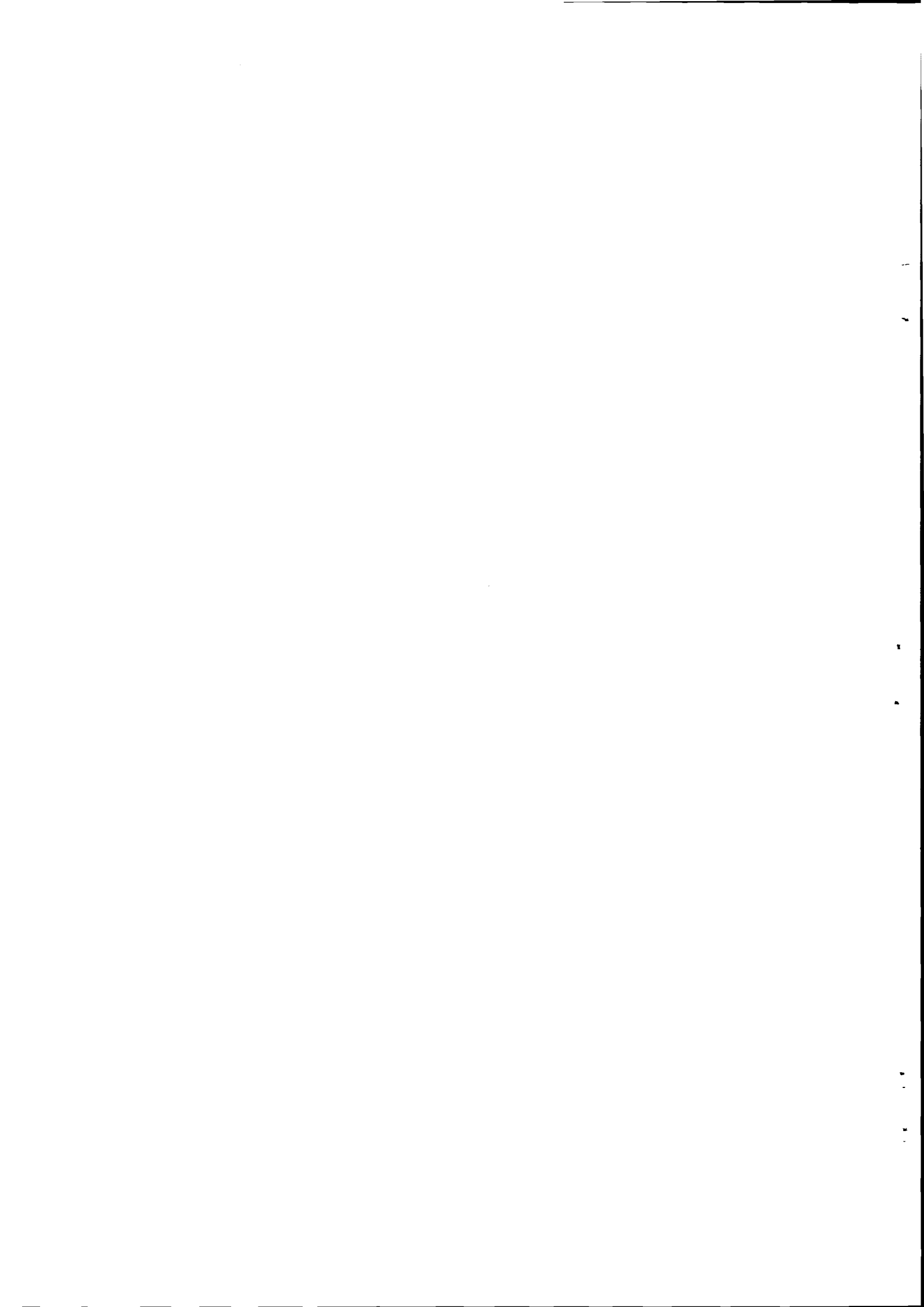
migration from the Rhine lands



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Does overpopulation explain emigration? The case of 18th century transatlantic migration from the Rhine lands

By Georg Fertig*

Introduction

Received wisdom in German social history has it that overpopulation was the fundamental cause of emigration to North America.¹ This standard explanation can also be found in much of recent research on 18th century transatlantic migration from Germany.² The view that people emigrated because their number was too high relative to the limited resources has been very popular in the political discourse on migration since the 18th century. It can be traced back to the corporatist practice and cameralist ideology of the territorial state. The bureaucratic police states of Central Europe defined themselves as institutions that guaranteed subsistence to their subjects in order to secure their 'happiness' and, as long as the 'balance' between population and subsistence was not endangered, keep them at home.³

At a first glance, the overpopulation approach seems to be very convincing. It looks at regional societies as self-regulating systems that are normally able to maintain a certain number of inhabitants, and that are equipped with a safety-valve which enables them to send out a certain proportion of these inhabitants in case their number becomes too high. However, it might be argued that the overpopulation perspective gives too narrow an explanation since it neglects the role of systems other than the sending society. Migration can be interpreted as a balancing process within world systems, thus including both the push and the pull contexts.⁴ It can also be interpreted as a self-generating and self-sustaining process, a system in itself. In this perspective, migration becomes more and more likely because of the information, credit or capital flows between the areas involved in migration—contacts created by migration cause additional migration.⁵ Third, it can be argued that when we want to interpret emigration, the allegedly overpopulated political territory and its lack of attraction for the emigrants is not the appropriate context, because the economic activities and general outlook of the population were in no way confined to the political territory they were belonging to.⁶ Indeed, the eurocentrism or even territorialism implied by the overpopulation approach has led to rather questionable descriptions

* Author's address: Georg Fertig, Graduiertenkolleg Westeuropa, FB III, DM 257, Universität Trier, D-54286 Trier, Germany, e-mail fertig@pcmail.uni-trier.de. The paper summarizes the quantitative aspects of my dissertation Fertig, 'Wanderungsmotivation' (1993). A previous version of this paper could be presented at the Twentieth Annual Meeting of the Social Science History Association at Chicago, November 16-19, 1995, thanks to financial support by The German Marshall Fund of the United States, Grant No. A-0316-11. I would also like to thank Walter Kamphoefner for organizing the SSHA session, and Steven Hochstadt and Walter Nugent for their comments.

1 Köllmann, 'Wanderungstheorie' (1976), Marschalck, *Überseewanderung* (1973).

2 Häberlein, *Oberrhein* (1993), Häberlein, 'German Migrants' (1993), Fogleman, 'Südbaden' (1987), Fogleman, 'Hopeful Journeys' (1991), von Hippel, *Auswanderung* (1984), Selig, *Räutige Schafe* (1988). Notable exceptions to the overpopulation approach include Wellenreuther, 'Arbeiter' (1986), and Wokeck, 'Harnessing the Lure' (1992).

3 Fertig, 'Anti-Migration Ideology' (1996), Justi, *Grundfeste* (1760) I, 257, see also Heinz, *Bleibe im Lande* (1989), 56.

4 Hoerder, 'Segmented Macrosystems' (1996).

5 Kamphoefner, *Westfalians* (1987), Lucassen, *Migrant Labour* (1987), Tilly, 'Migration' (1978).

6 Tilly, *Big Structures* (1984), 20-26.

of the information flow between America and central Europe. Information about America, it transpires from some recent research, was entirely dysfunctional, and people were conned into a redemptioner or indentured servitude system close to slavery by profit-oriented emigration agents.⁷

Overpopulation, thus, is not the only possible perspective we can take when we want to explain emigration. But this paper will not explore possible other perspectives in depth. It will rather test the overpopulation approach, focusing on the various implications this still dominant approach has for 18th century migration historiography. Several implications of the overpopulation approach will be discussed. First, if there is a causal connection between population pressure and transatlantic migration, it should be assumed that it is transatlantic migration that does all the balancing in the home country, and that internal migration can be neglected.⁸ This should be most true if those theories are correct that connect overpopulation not only with increased emigration but with the very possibility of migration—the 'latent propensity to migrate', whose mere 'sociogenesis' is discussed by some authors.⁹ If overpopulation was indeed the decisive cause of emigration in the 18th century, we should therefore expect that emigration during that age was a relatively surprising and unusual phenomenon, and that its numbers were far from insignificant.

Obviously, overpopulation is a normative concept. It even might imply some negative value judgement to say that a certain society or group of people suffers from overpopulation. Mostly, it is the others where we observe overpopulation, not ourselves. Consequently, Malthus noted that the English lower classes were overpopulated, German scholars in the 1930s were sure that the Slavic peoples in eastern Europe had an overpopulation problem, and it is still popular in the industrialized countries to worry about the overpopulation of the third world.¹⁰ To make it useful for scholarly analysis, the overpopulation concept must be defined in the first place. We may either say that by overpopulation we mean a situation when the population of a specific area exceeds the carrying capacity of that area, or we may say that it is an uncontrolled process that will sooner or later lead to such a situation, if it can not be stopped.¹¹ The second meaning is

7 It seems the use some of these authors make of the category 'pull factor' is less inspired by economic than by conspiracy theories. E.g. Bretting, 'Auswanderungsagenturen' (1991), 16 echoes the 18th century rumour that emigrant letters were forged by Rotterdam jews, leaving out the antisemitic aspect of what her source says but nevertheless reporting the rumour without any source criticism. She also believes that many newlanders (transatlantic small traders and letter carriers who organized travel for emigrants) never had been in America, and that they only said so in order to appear more credible. Von Hippel, *Auswanderung* (1984), 72 believes that the British merchant firms of Rotterdam were founded only in order to get a foothold in the German redemptioner trade. See also Brinck, *Auswanderungswelle* (1993), 136-137. For a more realistic weighing of the chances and risks the emigration decision could offer to people from the Rhine lands, see Häberlein, *Oberrhein* (1993).

8 As does the standard work on south west German emigration by von Hippel, *Auswanderung* (1984), who does not discuss 18th century migration to and from neighbouring territories in more than four and a half lines of text (p. 27).

9 Marschalck, *Überseewanderung* (1973), Köllmann, 'Wanderungstheorie' (1976), Bade, 'Migrationsforschung' (1988).

10 Malthus, *Essay* (1798/1976), 23-24, Conze, 'Übervölkerung' (1940).

11 There are other possible meanings of overpopulation, which I do not explore in this paper. One of them is underemployment, i.e. a relative surplus of labour force as compared how many persons would be necessary to produce the given output of an area, see Grigg, *Population Growth* (1980), 16-19. Also, overpopulation might be interpreted as an entirely subjective phenomenon, or a contemporary image that

probably more frequent in everyday usage, because few people will be able to say exactly what the carrying capacity is—they rather mean population growth is always a dangerous thing, based on an irrational human drive to procreate.¹² As far as the overpopulation approach in migration studies has this implication, testing it leads us to an exercise in differential demography. We will have to find out if people reacted to different economic situations by different ways of generative behaviour, and which were the social institutions that guaranteed such adaptation. Finding no difference in generative behaviour under different circumstances would support the thesis that population growth was based on irrational drives, and so would evidence on strong 'positive checks' or mortality ensuing from scarce resources. On the other hand, evidence of birth control, or evidence on individual generative behaviour that responded to economic variables would show us that physical reproduction was not as irrational as the overpopulation perspective would imply. Also, finding strong and successful institutional control mechanisms in an area of emigration would point against the overpopulation thesis because in this case, we might argue that there was emigration without any overpopulation process.

Still, a more exact definition of 'carrying capacity' might be helpful to test the thesis. An approach to this problem that is preferred by most population biologists is to define 'carrying capacity' as a function of the population development itself, namely as the maximum that is reached by a sigmoid growth process of the population, a phenomenon that has been described by Markus Mattmüller as the 'plafond'.¹³ Whenever the 'plafond' is reached or—for a short time—exceeded, we might thus assume 'overpopulation'. This definition has the advantage of being easy to use, but it probably does not fit exactly what most authors mean.

Another definition of 'carrying capacity' and, thus, 'overpopulation' would point to the amount of 'food' that was available in the given area. This usage is widely accepted in the Malthusian tradition. In agrarian societies, 'food' literally translates as 'grain'. Testing the overpopulation thesis would then mean to compare the amount of grain which could be consumed in an area of emigration to the nutritional needs of the population.¹⁴ A weaker form of the same argument might point to a insufficient amount of 'food' not for the population in general but for the poorer group,¹⁵ or to low crop yields in some years which should then correspond to a higher rate of emigration.¹⁶ One might however ask if such correlations should necessarily interpreted in terms of overpopulation, and if their influence seems to be decisive when compared to other variables.

all goods are limited and the world is full. It has been suggested that such a world view is indeed frequent in peasant societies, cf. Foster, 'Peasant Society' (1965).

¹² Ipsen, 'Agrarische Bevölkerung' (1940), 14. Ipsen's influence on the population theories employed by German social historians can hardly be exaggerated, although the racist aspects of his work would scarcely find any followers today. Cf. Ehmer, 'Bevölkerungsgeschichte' (1992/93).

¹³ Vogel, 'Populationsdichte-Regulation' (1986), 17. Mattmüller, *Bevölkerungsgeschichte* (1987) I, 425-427.

¹⁴ This is what Christian Pfister labels 'economical' or 'Malthusian carrying capacity': Pfister/Kellerhals, 'Verwaltung und Versorgung' (1989).

¹⁵ 'Social carrying capacity' (C. Pfister). Obviously, this argument leads to Wolfgang von Hippel's marginality thesis to be discussed below.

¹⁶ Heinz, *Bleibe im Lande* (1989), 42-43.

In this paper, I will first approach the problem by discussing proportions of internal and transatlantic migration. Second, I will discuss the temporal, spatial, and sociodifferential correlates of emigration to colonial North America—when did people leave, from what areas, and what kind of people?—and I will ask how these characteristics compare to the alleged influence of overpopulation in the Rhine lands. However, a thorough evaluation of sociodifferential migratory behaviour as well as a specific discussion of overpopulation is not possible on the level of southwest Germany and Switzerland as a whole. I shall therefore, for the rest of the paper, focus on one village, Göbrichen, which is situated right in the middle of the emigration area. Göbrichen was a grain producing village in a partible inheritance area, there was no local gentry exploiting the unfree labour of the peasants, and Göbrichen underwent considerable population growth during the 18th century. Thus, it had much in common with most areas of transatlantic emigration. My reason to choose this village for analysis was that there was considerable emigration to colonial North America,¹⁷ and that this place offers a unique combination of quantifiable sources: a full family reconstitution compiled by a hobby genealogist, and reasonably complete tax lists since the state of Baden-Durlach was the only major lord of the manor in this place.¹⁸ The Göbrichen data will be evaluated in the third part of the paper in order to find out what were the decisive characteristics of the emigrants—were they the victims of partible inheritance and increasing poverty? In the fourth part, I will test the proposition that this place was in a situation of overpopulation first by using the *plafond* definition, and second by comparing the agricultural product with the nutritional needs of the inhabitants. Fifth and finally, I will turn to overpopulation as a process, discussing the various social institutions and modes of decision-making that had an influence on reproductive behaviour in Göbrichen.

1. Proportions of 18th century emigration and internal mobility

Contemporary observers tended to view emigration as a deviant mass phenomenon of surprisingly large numbers. Also, it has been common wisdom in social history until the 1980s that peasants—and thus the large majority of the population—were 'immobile',¹⁹ and that in early-modern German towns 'migration approached zero'.²⁰ It was therefore possible to study emigration without addressing the topic of internal migration which was considered as being irrelevant to the population movement.²¹ However, a close look at the proportions of migration reveals that internal migration was in fact far more widespread in 18th century Germany than received wisdom would suggest.²² A conservative, if crude, estimate would be that roughly

17 At least 34 persons from 12 households; Göbrichen had around 50 households when emigration set in in 1742.

18 In 1736, Göbrichen had 41 landowning households headed by married men that can be used for correlation analysis. Fortunately, this is not too small for statistical analysis on a household level. Our chances to detect such correlations between two variables (e.g. poverty and outmigration rate) that explain at least 20 % of variance, are 87 % in a sample of 41 if we apply a significance level of 0.05 (power calculations based on a SAS program published by Judd/McClelland, *Data Analysis* (1989), A-96).

19 E.g. Wehler, *Gesellschaftsgeschichte* (1987) I, 77.

20 Shorter, *Family* (1975), 288.

21 von Hippel, *Auswanderung* (1984), 27.

22 For a more elaborate discussion, see Fertig, 'Explanations' (1994). My most important sources are Hochstadt, 'Preindustrial Germany' (1983), Imhof, *Lebenserwartungen* (1990), pp. 62-63, 72, and the figures I have calculated with reference to the village of Göbrichen.

every third adult individual in seventeenth and eighteenth century Germany changed his or her place of residence during their lives. We should also be aware that then even a short distance change of residence had far more consequences in everyday life than today. As it seems, no ,genesis' of a ,latent propensity to migrate' was necessary before the movement from the Rhine lands to Pennsylvania and the other British colonies in America could set in: German villagers and townspeople had shown a very manifest propensity to do so for many generations, although not necessarily over very long distances.

Also, the numbers of long distance migrants, especially to North America, have been grossly exaggerated both by contemporary observers who viewed emigration as sensational, and by filiopietistic migration historians who wanted to emphasize the German contribution to the building of America. While the migration of German-speakers to North America previous to 1800 traditionally has been given as roughly 200.000,²³ recent estimates seem to narrow down near 100.000.²⁴ Whatever the exact numbers were, and however important an instalment it may have been to the peopling of British North America with Europeans, the German emigration to American destinations was insignificant when considered (as in Table 1) in the context of total German migration of the eighteenth century. Those who did go to North America did not come from a spatially fixed, traditional German society. Rather we should think in terms of departure from the home community as being almost the norm for an individual born in eighteenth century Germany.²⁵

If departure from home was normal, it seems that ,overpopulation' is no necessary explanation of the fact that departure from home did occur. Also, it would be rather awkward to state that central Europe suffered from a fundamental ,overpopulation' crisis during the 18th century, and that this crisis uprooted no more than 1.3 % of the population.

Table 1:
Empire and Confederacy in the 18th century:
crude estimates of population and migration
(adults of several generations)

	Number	Percentage
Adult Population	46.000.000	100 %
Migrants to all destinations	15.000.000	33 %
to Eastern Europe	516.000	1.1 %
to North America	70.000	0.2 %

²³ E.g. Marschalck, *Bevölkerungsgeschichte* (1984), 21.

²⁴ For a discussion of the sources that are available for such estimates, see Fertig, ,Explanations' (1994). Basically, the ship lists for the port of Philadelphia must be checked against the charter parties in the port of Rotterdam. The results can be used to estimate the number of immigrants to Philadelphia. Having estimated what proportion went to destinations other than Philadelphia both from the charterparties and from the surname distribution in the first U.S. census of 1790, we arrive at a final estimate which corroborates the findings of Fogleman, ,New Estimates' (1992). It must be emphasized that the ship lists (on which all our guesswork about gross emigration numbers relies) are not complete. This does not mean our estimates are too low, given the way they are calculated, but they are certainly not exact.

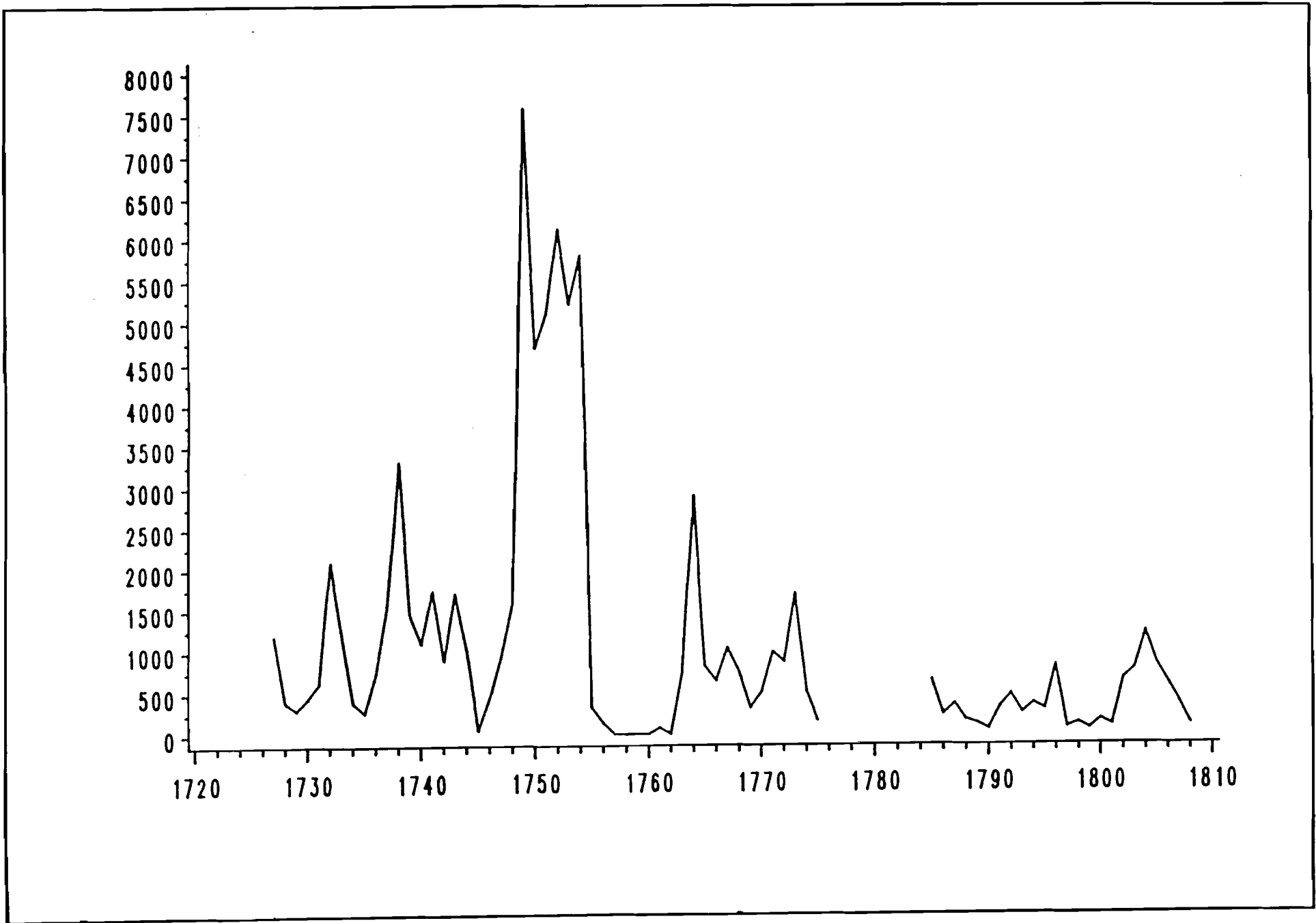
²⁵ The table gives numbers of adult migrants, only. For sources and calculation, see Fertig, ,Explanations' (1994). All estimates should be understood as very tentative.

2. The temporal, spatial, and socioeconomic dimensions of early transatlantic migration

Graph 1 shows the annual arrivals of German-speaking passengers in the port of Philadelphia.²⁶ Some patterns seem obvious: an increasing trend before the middle of the century, and a decreasing trend thereafter. Twice, immigration came to a complete stop in times of war. But which are the variables that explain these up- and downswings?

²⁶ Source: Wokeck, 'Flow and Composition' (1981), 260-261.

Graph 1: Annual number of German-speaking passengers arriving at Philadelphia



If we want to explain emigration in terms of 'overpopulation', the relation of supply and demand on the grain market should have some influence. Therefore, we should expect some correlation between grain prices and annual migration.²⁷ But a correlation between grain prices and emigration can also be interpreted without reference to 'overpopulation'. First, to equate high grain prices and high population pressure implies that changes in grain prices were demand driven. This seems to be very questionable at least for short term analysis. Therefore, data on precipitation and temperature in Switzerland have also been included as a proxy for grain supply in the Rhine lands.²⁸ A second problem with grain prices as a proxy for overpopulation is that they are also an indicator of real income—high grain prices corresponding with low real wages in those parts of the population that depended on the grain market. If low real incomes in Europe or high real incomes in America corresponded with high rates of emigration, such a finding could easily be integrated with an interpretation of migration as a balancing process within a transatlantic labour market.

For such an alternative interpretation, no reference to the concept of carrying capacity is necessary. It would predict that both the costs and the gains of migration should have an influence on its likelihood, or low real incomes in Europe (i.e. low opportunity costs of emigration), the absence of war on the travel routes (i.e. low travel costs compared to times of war), and high incomes in America. War and peace can easily be measured (I have used a dummy coding), and incomes in America may be approximated by a price index of exported colonial products.²⁹ Finally, if we think that migration flows were in some degree 'self-generating', then we should expect a high and positive serial correlation.³⁰ A high number of successful migrants in one year should trigger the departure of migrants in the following year, and also the calculations of ship owners should be working in the same direction, offering more transport if last year's demand was high.

In fact, a high first order serial correlation is the first and most striking result of a time series analysis done on the Philadelphia immigration data. Autocorrelation at lag 1 accounts for about 44 % of variance.³¹ By differentiating the series, we obtained a series that is no longer autocorrelated. Correlating this series with a number of independent variables, a regression analysis became possible which is presented in table 2.³²

27 Heinz, *Bleibe im Lande* (1989) makes use of grain prices as a proxy for overpopulation. The grain prices I use are an average of three series from Frankfort, Speyer, and Müllheim: Elsas, *Preise und Löhne* (1936, 1949) II, 467-468 (Frankfurt), 553-555 (Speyer); Straub, *Badisches Oberland* (1977), 165-166 (Müllheim).

28 Source: Pfister, *Klima* (1984). Professor C. Pfister has kindly made his data sets available to me in machine-readable form. I assume that climate ups and downs did not vary a lot between Switzerland and southwest Germany; also, Switzerland was part of the emigration area itself. Climate data comparable to Pfister's are not available on southwest Germany.

29 I have used the colonial price index Z 557 from United States, *Historical Statistics* (1975) which is highly correlated to, but more complete than the Bezanson index E 111.

30 Wokeck, 'Harnessing the Lure' (1992), 219.

31 Partial autocorrelation function lag 1: $r=0.66$. $DW=0.6714$, $PROB<DW=0.0001$. Rsq is based on regression analysis done with SAS PROC AUTOREG.

32 Analysis was done using SAS PROC ARIMA. It should be noted that several variables missed significance: A mortality index based on data from nine Württemberg parishes, grain prices, precipitation, and lag 0 where lag 1 is included with the model. Both grain prices and mortality were significant before I

Table 2:
Determinants of annual numbers of German-speaking immigrants to Philadelphia, 1727-1775

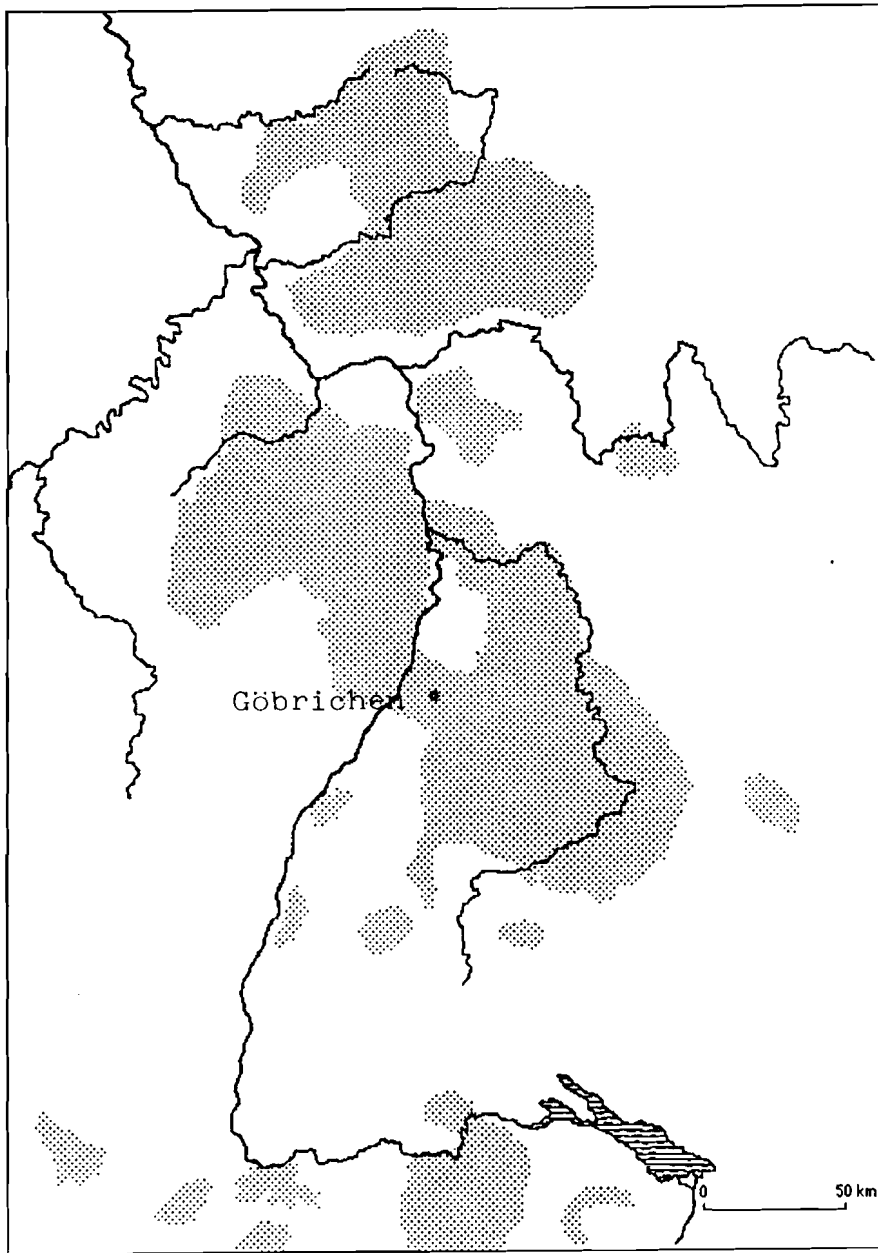
Variable	DF	B	T(B=0)	Prob> T	Beta	Type II semipartial Rsq
Intercept	1	-44.12	-0.262	0.7946	0.0000	
War	1	-2066.64	-3.522	0.0010	-0.4029	0.1600
Temp. Lag1	1	-790.50	-3.337	0.0017	-0.3873	0.1435
Z557 Lag1	1	94.35	3.054	0.0038	0.3546	0.1203

Durbin-Watson=2.5520 - PROB<DW=0.9777 - Model DF=3 - Error DF=44
 F=11.185 - Prob>F=0.0001 - Rsq=0.4327 - Adjusted Rsq=0.3940

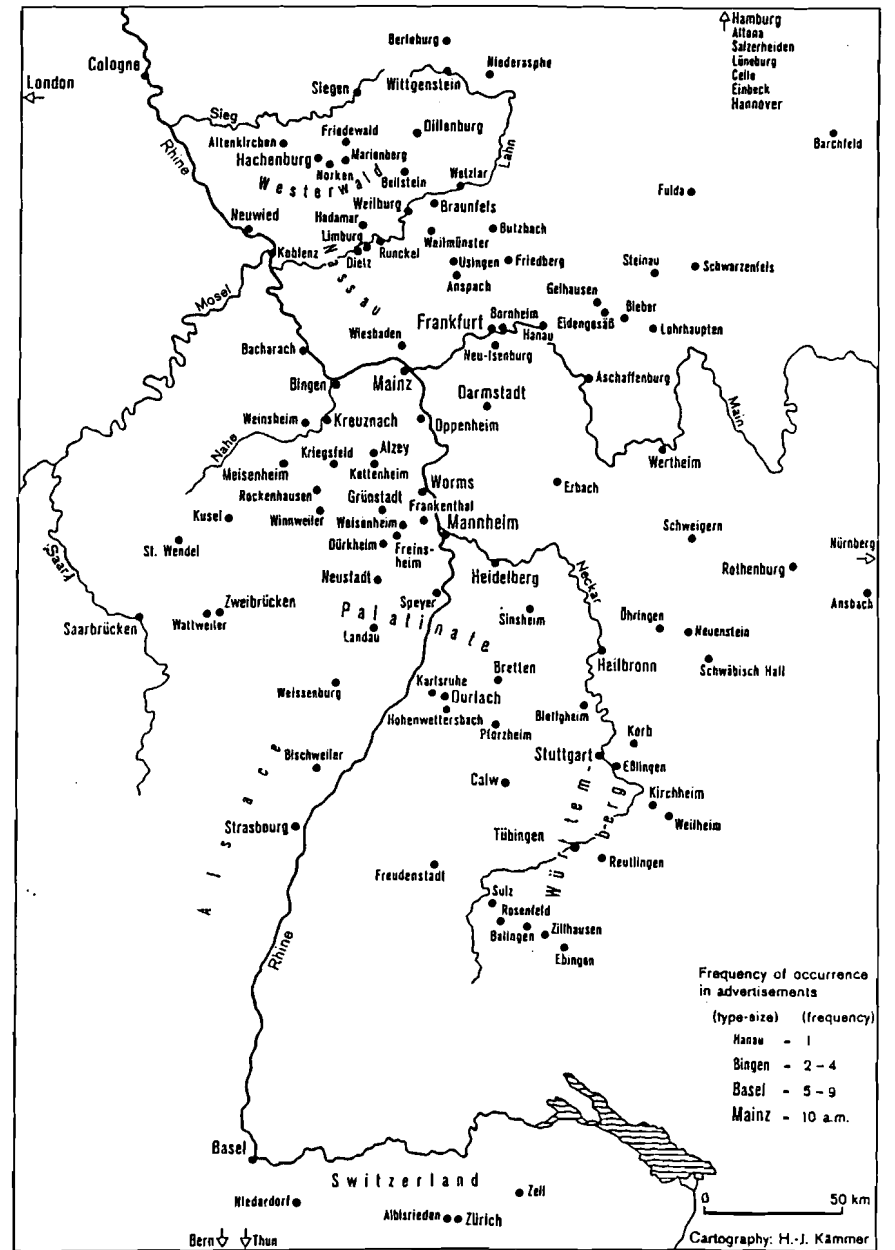
Even if we admit that low temperature may have caused low crop yields in some years that possibly might have been less harmful if the population would have been lower, it transpires from the data presented here that the overpopulation concept can not explain very much on the temporal level. Far more important was what Wokeck calls the 'self-generating momentum' of migration: this was a system with strong positive feedbacks. And interpreting these data requires looking at the labour market on both sides of the Atlantic. The demoeconomic system of origin alone offers perspectives which are too narrow for an explanation of the emigration process.

included the climate data. Compare the time series analysis in Grubb, 'Immigration and Servitude' (1984), 30-39. Grubb's results on autocorrelation and the influence of wars are corroborated by my analysis. But Grubb does not include indicators of short term economic opportunities, e.g. prices, 'since it is lifetime opportunities which are the key comparison when making permanent location choices' (p. 30). I think that short term opportunities should at least have an influence on the timing of the migration decision. Other than Grubb, I do not include the dynastic change in Electoral Palatinate (1743) with my model, while Grubb thinks the influence of the Jesuits led to increasing intolerance against Protestants (compare Schaab, *Kurpfalz* (1988-92) II, 173-179, 198-204 for a more balanced account of Palatine church history).

Map 1: Areas of origin for emigrants



Map 2: Destinations of 'newlanders'



While analysis of the when question can proceed in a rather formalized way, by means of time series analysis, the same is not true for the question, where the emigrants did come from. Most obviously, the migration flow connected a relatively poor and a relatively rich area within encompassing transatlantic labour and land markets. For one hundred litres of grain, between five and ten days of labour were necessary for colonial American workers, while German workers had to work up to twenty days for the same amount of food.³³ American workers consumed up to 225 g of meat daily,³⁴ while corresponding German figures are 27 to 55 g/day.³⁵ Prices of land were lower, average farms much bigger, and crop yields higher near Philadelphia than in the Rhine lands. We do not know if southwest Germany was poor in comparison with its 'scope of nourishment' (*Nahrungsspielraum*, as German social historians use to say) or carrying capacity. It was, however, poor when compared to 'the best poor man's country', Pennsylvania.³⁶

More specifically, the spatial distribution of emigration areas to North America can be seen in map 1.³⁷ Some patterns hardly deserve much discussion. The areas of emigration were situated near the Rhine, and their Reformed, Lutheran, and Anabaptist traditions facilitated communication with British North America. They may be described as the Protestant German-speaking hinterland of the port of Rotterdam. We might ask why Rotterdam and its anglophone merchants played such a decisive role in transatlantic migration, while the ports of Hamburg and Bremen never propelled comparable numbers to colonial America—but obviously, the latter were rather peripheral to the British Atlantic world, and Rotterdam was not. It is certainly not surprising that a transatlantic migration system developed exactly in this area. It is an almost classical case of migration causing migration: The emigration area is perfectly corresponding to the places—documented in map 2—that were visited by transatlantic letter carriers and small traders, so-called newlanders who brought letters from former emigrants, and in turn informed potential emigrants about America and helped them with their travel.³⁸

Still, proponents of the overpopulation thesis also point to the spatial origins of emigrants in areas of equal inheritance. According to this view, equal inheritance rights of men and women and a strong legal position of peasant proprietors in front of the manorial lords made it possible that people procreated in an irrational pace. Bureaucratic criticism of peasant reproductive behaviour has had a long history in Germany. German elites of the 18th and 19th centuries were convinced that social reproduction (marriage), physical reproduction (consumption), and biological reproduction (having children) in peasant families should be governed by norms of autarky and subsistence, as opposed to market dependency and growth. In the 19th century, Wilhelm Heinrich Riehl, the conservative founder of German folklorism, made the distinction between 'peasants of the good kind' and 'degenerated peasants'. Of course, it was the latter who divided their lands among daughters and sons, who were engaged in protoindustry, and who emigrated

33 Eßer, 'Lohn-Preis-Entwicklung' (1986).

34 Smith, *Lower Sort* (1990), 98.

35 Beck, *Naturale Ökonomie* (1986), 176.

36 Lemon, *Best Poor Man's Country* (1972).

37 A slightly corrected copy of map 2 in Scheuerbrandt, 'Kraichgau' (1985), 73, which is based on Bennion, 'Flight' (1971).

38 Sources: *Pennsylvanische Berichte*, 1746-1762, *Philadelphischer Staatsbote*, 1762-1768.

to America.³⁹ As Hermann Rebel has argued, the social logic of a patriarchal peasant household that uses its property in terms of stewardship only and puts its priority on the preservation of the farm, not on gain, is linked to the practice of emphyteusis or the transmission of manorial rights over peasants to nobility members by the bureaucratic early modern state.⁴⁰ Similar concepts of self-sufficient non-dividing peasants as a political norm can be found with Johann August Schlettwein, the physiocratic precursor of German liberalism, who described the corresponding roles of profit-oriented artisans and subsistence-oriented peasants within the system of political economy he envisaged, or with Friedrich List, leading theorist of German economic liberalism—in fact with many German political theorists of the 17th through 19th centuries.⁴¹

Saying that criticism of peasant subdivision originates from a specific political discourse does not prove that the causal connection between subdivision and transatlantic migration did not exist. However, evidence for this causal chain is rather weak, and its advocates tend to neglect some problems that are linked to it. First, the subdivision thesis says that subdivision leads to increased population growth.⁴² Possibly, this is true, but subdivision leads also to a higher rate of married and propertied persons with full citizenship rights in the younger age groups. Young persons were most likely to emigrate, but if married, they probably would not escape the early modern emigration bureaucracy without notice. Consequently, subdivision can be expected to influence the measurement of emigration.⁴³ Second, as Bernard Derouet has argued in the French case, peasant societies are not passive victims of ethnic tradition or legal systems when choosing a specific inheritance pattern.⁴⁴ They react to the ecological setting they are part of as well as to the alternative opportunities their children may find for subsistence. We may therefore expect that differences in population growth between areas of partible and impartible inheritance are caused by ecological differences, not only by inheritance customs. Third, the Malthusian Law should be understood as a version of the Law of Diminishing Returns so that *ceteris paribus*, an increase in population of a given proportion yields a 'food' increase of a smaller proportion. Thus, as a consequence of population growth the average per capita income would fall, although total production would rise.⁴⁵ Emigration, then, would not directly be caused by population growth but by low income. But the decisive point here is the *ceteris paribus* clause. Even if the population was growing faster in the partible inheritance areas, we have no evidence that this difference in population growth explains much of the variance in income differentials between areas. Finally,

39 Riehl, *Bürgerliche Gesellschaft* (1851).

40 Rebel, *Peasant Classes* (1983).

41 Schlettwein, 'Evidenzen' (1780-82). List, 'Ackerverfassung' (1842/1928).

42 Berkner/Mendels, 'Inheritance Systems' (1978), and Berkner, 'Household Organization' (1977) are frequently quoted for this thesis, e.g. by Selig, *Räutige Schafe* (1988), 94. Surprisingly, Selig quotes Berkner also for saying that partible inheritance leads to more emigration. What Berkner said was precisely the opposite. Compare also Fogleman, 'Südbaden' (1987), 106 (peasants in impartible inheritance areas had fewer children) to his source Strobel, *Agrarverfassung* (1972), 92 (they did not have fewer children).

43 It is therefore not necessary that the correlation Aaron Fogleman has observed in southern Baden between inheritance patterns and emigration to eastern Europe indicates a causal connection of inheritance, population growth, poverty, and emigration: Fogleman, 'Südbaden' (1987). Fogleman himself, it should be noted, does not say inheritance forms are the underlying cause of population growth, he rather treats them as indicators of popular attitudes towards population growth.

44 Derouet, 'Pratiques successorales' (1989).

45 Gordon, 'Malthusian Theory' (1976), see also Grigg, *Population Growth* (1980), 11-19.

as Hermann Wellenreuther has suggested, there is a correlation between peasant rights and mobility because strong property rights existed only where the local nobility was weak and did not control the labour power of their subjects.⁴⁶ The causal chain real partition—population growth—poverty—emigration thus seems rather weak, and as far as correlations can be observed, the influence of other variables like ecological settings, measurement problems, and the position of the nobility must be included.

Unfortunately, we are lacking data that have the village or micro-region as the unit of observation and could be used for testing the overpopulation thesis. We would need population data both for the beginning and the end of the 18th century, data on the natural increase of population, on emigration to America, on inheritance practices, and on agrarian productivity both before and after migration. Two data sets are available on six Ämter or administrative districts in Baden-Durlach, on the one hand,⁴⁷ and on 47 northern Kraichgau parishes, on the other hand.⁴⁸ Ironically, both seem to point into the opposite direction of what the respective theories of their compilers would predict. However, none of these data sets are dense enough for definite answers.

On the sociodifferential level, gender, age and skills of prospective migrants had some influence. A higher proportion of adult German migrants to North America than of adult rural Germans in general was in the age group from twenty one to thirty years. Unmarried males were more than twice as likely to move to Pennsylvania as were unmarried women. It has also been observed that literates, especially in their teens and twenties, had a higher propensity to migrate to Pennsylvania than illiterates. None of these characteristics is surprising when we interpret emigration as a rational decision about location on a transatlantic labour market. Redemptioner migration was an extension of the life cycle specific servant market in Germany, and both human capital and male gender could strengthen the position of a migrant on these markets.⁴⁹

46 Wellenreuther, 'Arbeiter' (1986), 85-86.

47 The correlation analysis includes 6 of the 7 districts of Baden-Durlach. I have left out Karlsruhe because in this district, population growth and migratory behaviour were influenced by the founding of Baden's new capital. As an indicator of emigration intensity, I have used the number of emigration cases to all destinations as listed in the register of places in Hacker, *Baden und Breisgau* (1980), divided by the number of inhabitants of the districts (Oberämter) in 1786 as given in Roeder, *Lexicon von Schwaben* (1800), I, p. 15. As an indicator of population increase, I have used the number of inhabitants in 1786 divided by the number of households in 1701 as given in *Generallandesarchiv Karlsruhe* 180/272. Dividing population increase by productive land in 1701 as given in the same source, I have derived an indicator that correlates strongly with emigration intensity ($Rho=0.89^*$, $N=6$). Although this result is significant, it must be emphasized that the number of cases is very low. Also, we would have needed natural population increase by increase of agrarian product as a more valid indicator of population pressure.

48 Fogleman, 'Hopeful Journeys' (1991), 363-364. Fogleman, a supporter of the overpopulation thesis, gives population in 1809, area, and persons emigrating for 53 parishes. I have excluded 6 of these from correlation analysis because they either were towns or the figures are insecure. I have then correlated population density in 1809 with the rate of emigration (defined as persons emigrating by population in 1809). The result was $Rho=0.07$ or practically nothing. Again, I doubt that valid indicators of population pressure can be constructed from these data because we do not anything about how population and productivity changed during the 18th century in these places.

49 Grubb, 'German Immigration' (1990), Grubb, 'Immigrant Literacy' (1987). For age composition in Germany compare Imhof, *Lebenserwartungen* (1990), for the position of men and women on the Philadelphia redemptioner market see Grubb, 'Immigration and Servitude' (1984), 272., for the wages of male and female servants in Germany see Elsas, *Preise und Löhne* (1936, 1949).

By the real partition and overpopulation theses, a causal connection between being poor compared to other people in the land of origin and the emigration decision is implied—other than in a more encompassing labour market perspective, where the decisive comparison would be made between income levels on the Atlantic labour market. Indeed, it has frequently been asserted both by contemporaries and by historians that poverty was the main cause of emigration. Also, the argument well known in migration history, that the very poorest usually could not finance their translocation, and that this explains their low percentage among migrants, does not hold in the case of early Rhine lands emigration across the Atlantic. Even the poorest migrants could finance translocation costs to British North America by the means of redemptioner contracts. If the basic dynamics of migration was one of 'overpopulation' causing poverty and poverty causing 'propensity to emigrate', in the case of German-language redemptioner migration to British North America it therefore should be expected that indeed the most marginalized classes were those who decided to emigrate. Wolfgang von Hippel, for instance, has stated that the existence of a large group of 'marginals' in an economic sense (*Grenzxistenzen*) in the 18th century was a necessary precondition of the 'latent propensity to emigrate'.⁵⁰

When we look at the governmental manumission lists compiled by Werner Hacker, it seems that indeed, most emigrants were very poor.⁵¹ Recently, Mark Häberlein has shown that it would have been impossible to buy a self-sufficient farm from the moneys that were exported by an average emigrant family.⁵² However, it has never been demonstrated that migrants to America were poorer than average Swiss or Germans in the 18th century.⁵³ Also, governmental sources in the country of origin tend to exaggerate emigrant poverty. This is so because poverty was an important justification for manumission, because the property declared at the moment of emigration was heavily taxed, and because the travel of prospective redemptioners could at least partially be financed by credit, so there was no reason to export all the money one might have been able to claim. Even if emigrants were poorer than nonmigrants, possibly this was a consequence of their relatively young age in a society where property was accumulated over a long life cycle. An analysis of the precise workings of peasant subdivision and population growth requires the comparison of migrant and nonmigrant wealth. Such an analysis is possible at the local level only, and must focus on the entire household property.

⁵⁰ von Hippel, *Auswanderung* (1984), pp. 56, 59.

⁵¹ For manumission lists, see e.g. Hacker, *Baden und Breisgau* (1980)

⁵² Häberlein, *Oberrhein* (1993), 48.

⁵³ Häberlein, *Oberrhein* (1993), 56; Blocher, *Zürcher Auswanderer* (1976), 88.

3. Differential migration at the household level

Table 3:
Correlations of socioeconomic variables with outmigration,
households in Göbrichen 1736

Correlation (Rho/Phi) N / significance	to America (yes/no)	all desti- nations
household acreage	-0.21 41	-0.10 38
Number of children surviving age 6	-0.06 41	0.20 38
acreage per survi- ving child	-0.14 41	-0.23 38
trade (yes/no)	-0.03 41	-0.12 38
officeholder (yes/no)	-0.16 41	-0.11 38
godparentship index	-0.14 41	-0.14 38
kinship index	-0.07 41	-0.16 38
birth control index (yes/no)	-0.26 23	-0.42 23 †
illegitimate births (yes/no)	-0.23 41	-0.24 38
premarital preg- nancy (yes/no)	0.12 38	0.25 35
husband immigrated (yes/no)	0.46 41**	0.45 38**
wife immigrated (yes/no)	0.00 41	-0.11 38

test statistics: Spearman's Rho, Wilcoxon's Z, Fisher's Exact Test
significance levels: ** 0.01, * 0.05, † 0.10

In Table 3, much of the information I have collected on the migration behaviour of Göbrichen households is condensed. The unit of observation are genealogical families, aggregated from multiple marriages of the husband if he was married more than once, and linked to information on landownership. Families were included into the analysis if they owned land in 1736 (this being the last date where we have landownership information before 1742, when emigration set in), and if both husband and wife were alive at that date. What is given in the cells are correlations—

Spearman rank correlations, if at least one of the variables involved is continuous, Phi correlations, if both are dichotomous.⁵⁴

In the first column, a dichotomous variable is analysed that indicates if members of the family (i.e. at least one child, husband, or wife) emigrated to British North America. The second column contains correlations with a variable that measures the percentage of children who survived age 6 but were never buried in the village. We would expect that such variables that specifically influenced the decision to emigrate to North America would yield high correlations in the first column. Such variables that generally influenced outmigration—to neighbouring villages or to other places in America, Germany, Russia or wherever—should yield high correlations in the second column.

In the first four rows, we find correlations between economic variables and migration. As it seems, the relative economic position of the families and the number of their children did not have a strong influence on migration behaviour in Göbrichen. However, if we split up our sample between households with a trade and pure peasant households, the picture changes. Among the 10 households with a trade—weavers, smiths, herdsman, a cooper, etc.—the number of children had a strong influence on outmigration to all destinations, and this group is also responsible for the high negative correlation between birth control and outmigration.⁵⁵ So if artisans had many children, these had difficulties finding a place in the village, and some of these couples seem to have reacted to this situation by limiting the number of their children. With pure peasants, the number of children did not play any role, but there was a significant negative correlation between acreage per surviving child and outmigration.⁵⁶ Possibly, the decision for North America was influenced by low land ownership in this group, but the correlation is rather weak.⁵⁷ In order to double-check the Göbrichen results, I have also analysed data from the neighbouring village of Bauschlott, using a comparable village genealogy and landownership information for the year 1742. From this data there is also no evidence that overpopulation and poverty was the driving force behind emigration to America. In Bauschlott, too, the number of children was not important for migration behaviour, and the decision for America was not influenced by the economic position of the households.⁵⁸ However, household acreage and acreage per child did have an influence on the rate of outmigration to all destinations in the Bauschlott households.⁵⁹ Being poor or having many siblings may in some cases have had some influence on migration behaviour. Migration to

⁵⁴ Basically, these correlations always measure the same thing—the square root of the proportional reduction of error that we would get if we were going to predict one variable from our knowledge of the other by using a linear regression model. Less technically speaking, they inform us about the apparent strength of influence of one variable on the other, provided that the influence works only in one direction and no additional variables are involved. Phi and Rho correlations are therefore comparable to each other and may be presented in the same table. Using Spearman's Rho is appropriate because otherwise problems with outsiders or lacking normal distribution might arise. If one variable is dichotomous and one continuous, Spearman's Rho can be interpreted as a pointbiserial correlation between the first variable and the ranks of the second. In these cases, the Wilcoxon rank sum test is appropriate.

⁵⁵ Rho = 0.73 *, N = 10 between number of surviving children and proportion of outmigrating children, Rho = 0.66, N = 7 between birth control indicator and outmigration.

⁵⁶ Rho = 0.42 *, N = 28.

⁵⁷ Rho = -0.32 †, N = 29.

⁵⁸ Correlations below 0.15.

⁵⁹ Rho -0.48** and -0.58**, N = 59.

North America, however, was not made more likely by these factors, if we can judge from the Göbrichen and Bauschlott household data.

The next rows—officeholding, godparenthood, kinship—measure the integration of the households in Göbrichen society.⁶⁰ The interpretation of transatlantic or other migration as an outsider phenomenon obviously is not supported by these data.⁶¹ Also, deviance from church and state norms of reproductive behaviour made no difference—birth control excepted which seemed to make staying in Göbrichen more likely.⁶² The one Göbrichen variable that really had a strong influence on emigration to America was the previous migratory experience of the husband in a given family. If he was not born in the village, both migration to America and general outmigration became more likely. The Bauschlott data partially confirm this observation, albeit only for migration to America and with a much weaker correlation.⁶³

The Göbrichen correlations certainly do not give us definite answers to the question, what were the specific characteristics of emigrants from southwest Germany to colonial North America. But they give us a certain sense of proportions. Obviously, Wolfgang von Hippel's marginality thesis is not supported by these results. Migration as a self-generating process, on the other hand, fares better: Male experience with migration seemed to make the outmigration of children more easy. Why do we not observe the same with the influence of mothers? I have no definite answer to that question. My proposal would be that migration to North America was dominated by male decision-making, and that male migration know-how was more valuable to male transatlantic migrants.⁶⁴

60 Political offices were Schultheiß (mayor), Anwalt (vice mayor), and Gerichtsmann (council member). The godparenthood index measures how frequently per year an average member of the household was called as a godparent between 1720 and 1759. The kinship index counts the households in the village with which a close kinship relation existed in 1736, i.e. husband or wife being first cousin or equally close kin with husband or wife of the other household.

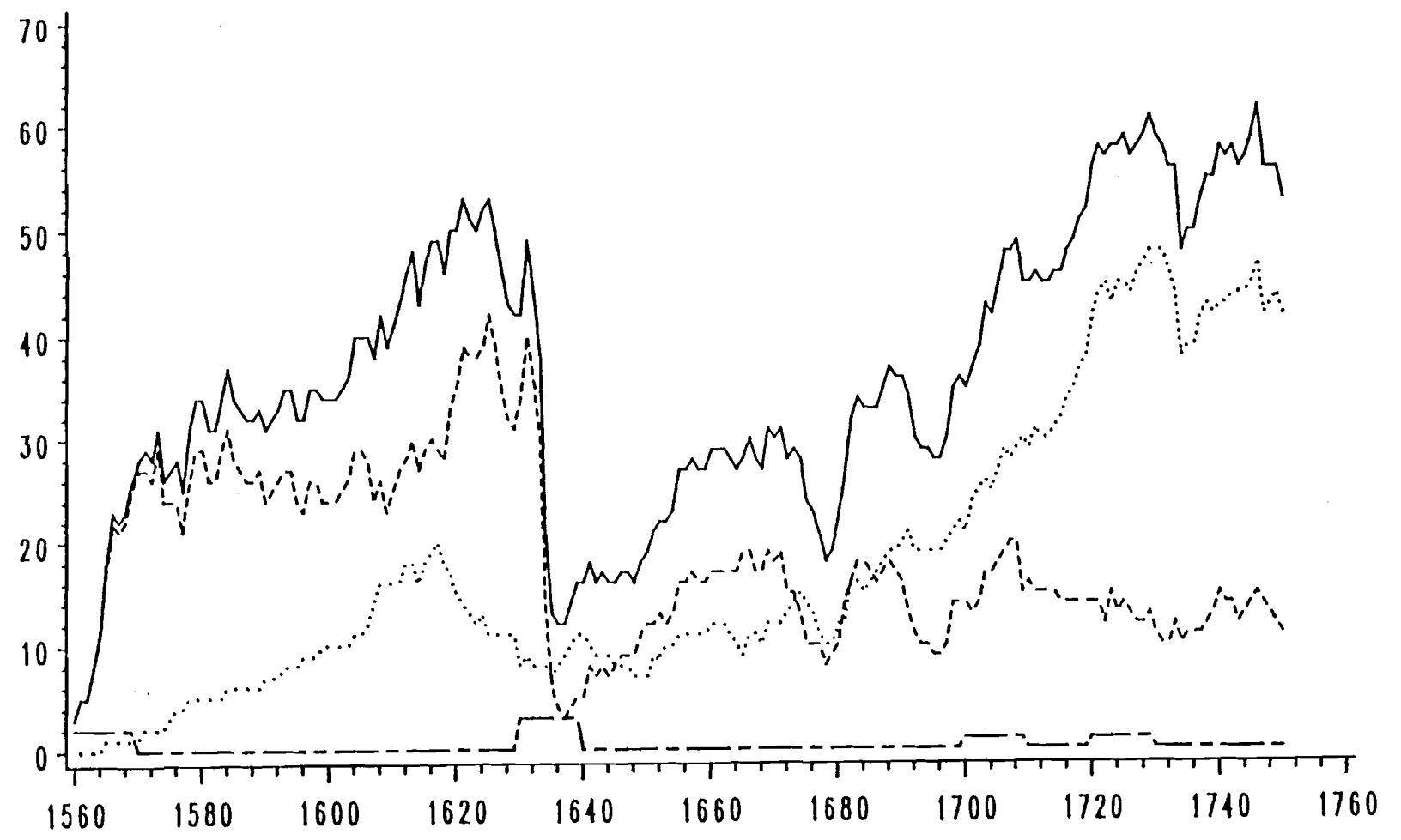
61 Cf. Blocher, *Zürcher Auswanderer* (1976).

62 The indicator of birth control I have used has been developed by Pfister, 'Geburtenbeschränkung' (1983), 213-232. It emphasizes stopping of births when a target number of children is reached.

63 $\Phi = 0.23$ †, $N = 64$.

64 An alternative explanation might be that male immigrants into Göbrichen were more likely to be social outsiders. However, this hypothesis is not confirmed by a differential analysis of immigrant and non-immigrant households.

Graph 2: Annual number of married couples living in Göbrichen



Information about beginning and end of marriage:

inexact	-----	—————	sum of inexact + exact
exact	- . - . -	in 10 years period

4. A situation of overpopulation?

In the previous section of this paper, we have made use of Göbrichen in order to test the marginality thesis connected with the overpopulation approach. But by saying that overpopulation causes emigration, the proponents of this thesis do not necessarily mean that those inhabitants who have the smallest resources are forced out of the country. Rather, it might be implied that overpopulation has a mobilizing effect on all strata of society, and that it changes the rules of behaviour for everybody. In a full world, it might be argued, the traditional norms of sedentariness will erode and even the upper and middle classes will be willing to leave such a place. Still, what a full world actually is remains to be defined. In this section, I will focus on static definitions of overpopulation, first using the plafond approach and then comparing agrarian production with nutritional needs.

In Göbrichen, emigration to British North America began in 1742. If the overpopulation thesis is correct, we should expect that the carrying capacity of Göbrichen was exceeded at this date or earlier. Plafond analysis would imply that the carrying capacity can be observed by looking at the growth process of the population. The plafond can be understood as a ceiling which can not be exceeded for more than very short periods; population growth will stop as soon as this point is reached. Can such a plafond be observed in Göbrichen, and had the population reached it when emigration set in?

Graph 2 gives the annual number of married couples that were living in Göbrichen between 1560 and 1750.⁶⁵ Counting couples from family reconstitution data is more feasible than determining exactly how many individuals lived in the parish. An individual may easily migrate to or from a place without being recorded in the church registers. Married couples, however, leave lots of traces and it is highly improbable that a couple remains completely unrecorded. Information about couples is not equally exact in all cases. In many cases, we have only the date before which a couple was married, or after which a person died. As can be seen from graph 2, in the 17th century there were more couples for whom we have imprecise information than precise, and it is possible that the sum of both underestimates the true number of couples more strongly in that period. For a small number of couples, only the decennium is known when they lived in Göbrichen, they may be neglected. Contemporary lists of citizens (*Bürger*) and denizens (*Hintersassen*) in Göbrichen correspond quite closely to our estimates given in graph 2.⁶⁶

The graph clearly does not show us anything like a plafond. The rapid upswing in the 1560s has technical reasons, the number of known couples increases simply because the parish registers set in during that period. But then it becomes clear that Göbrichen was growing rapidly, and this growth process was not stopped until the pest years of 1629 and 1635. Obviously, this double mortality crisis was a consequence of fighting in the Thirty Years War. It must be interpreted in

⁶⁵ Source: machine readable data set based on Hahner, *Ortssippenbuch Göbrichen* (1985), including all couples married prior to 1750.

⁶⁶ 1699: 34 couples according to *Generallandesarchiv Karlsruhe* 171/1512 (36 in our data set). 1709: 43 citizens and 4 denizens according to Jacob, *Einwohnerbuch Baden-Durlach 1709* (1935), p. 59 (45 in our data set). 1738: 52 and 3 (55) according to *Generallandesarchiv Karlsruhe* 180/232. 1743: about 50 (56) according to *Generallandesarchiv Karlsruhe* 180/165.

terms of the European state building process and not as a positive check within a balancing demoeconomic system. After the devastating year of 1635, the growth process set in again, with all the downswings closely associated to military activity—Prussian and Saxonian troops in 1674-75, French troops in 1689-92, the Polish Succession War in 1735, and in 1746, Göbrichen was hosting Württemberg dragoons.⁶⁷ The European underproduction crises of 1709-14 and 1740/41 did however not result in any local mortality peaks in Göbrichen.

Although the data set used contains only couples that married before 1750, we can also use it to estimate the number of married nonmigrant children of these couples which continued to increase for thirty more years at least. Also, it can be seen from additional contemporary population counts that Göbrichen did not even reach a plafond in the 19th century.⁶⁸ If by overpopulation it is meant that the carrying capacity of a specific area is exhausted, and if the carrying capacity is defined as the plafond that is reached, but in the long run not exceeded by a growing population, then obviously Göbrichen was not overpopulated during the 18th century.

But of course, carrying capacity can also be defined as the population level whose nutritional needs can be satisfied by the agrarian product. If the crops that were grown in Göbrichen did not suffice, we may speak of overpopulation, and it would then be rather plausible if some inhabitants would decide to leave the village and travel to North America.

So how did the agrarian product of Göbrichen compare to the needs of the population? 250 kilogrammes per person probably would certainly not underestimate the annual consumption of an average inhabitant, including children.⁶⁹ My calculations of agrarian productivity arrive at 1.380 kg/ha in the winter field.⁷⁰ The summer field added about 50 % to the winter field crops.⁷¹ If we neglect the products of the barren field such as hemp and potatoes, we arrive at an average of some 690 kilogrammes per hectare of land on all three fields of the crop rotation system.

The costs of agriculture, however, must be subtracted from this figure. We do not have sources from Göbrichen on the ratio of seeds to yield, but it is certainly not too optimistic to assume that 25 % of the gross yield had to be invested as seeds.⁷² Tithes, obviously, account for 10 % of

67 Sources: Göbrichen burial register, Hahner, *Ortssippenbuch Göbrichen* (1985), Tölke et al., *Kennzeichen PF* (1986), 96-97, Generallandesarchiv Karlsruhe 229/32175.

68 182 persons 1699, 328 persons 1761, 620 persons 1813, 812 persons 1844, 924 persons 1865. Sources 1699: *Generallandesarchiv Karlsruhe* 171/1512. 1761: *Generallandesarchiv Karlsruhe* 180/167. 1813: Kolb, *Lexicon von Baden* (1813) s.v. Göbrichen. 1844: *Universal-Lexikon Baden* (1844) s.v. Göbrichen. 1865: Kissling, *Ortslexikon Baden* (1865) s.v. Göbrichen.

69 Estimates between 180 and 250 kg are given in Pfister/Kellerhals, 'Verwaltung und Versorgung' (1989), 180; Henning, *Handbuch* (1991), 400; Beck, *Naturale Ökonomie* (1986) 176-185.

70 They are based on the pastor's tithe records for the years 1731-32 (1.073 kg/ha), a balancing for a Göbrichen demesne for the years 1740-57 (1.624 kg/ha), and the village's tithe records for 1792-97 (969 kg/ha). The latter, however, gives an underestimation of the real yields because it was auctioned off to the inhabitants, who were of course interested to pay as little as possible. When the tithe was directly collected by the village authorities after 1838, its returns increased by more than 50 % immediately. This has been taken into account: $(1.073+1.624+(969*1.5))/3=1.383,5$.

71 Pastor's tithe records 1731-32, tithe prognoses 1738-51, demesne balances.

72 Henning, *Handbuch* (1991), p. 807, Maisch, *Lebensbedingungen* (1992), 111; Beck, *Naturale Ökonomie* (1986), 158. Pfister/Kellerhals, 'Verwaltung und Versorgung' (1989), 178.

the harvest, and we may assume the same for state and manorial taxes.⁷³ Of the remaining 55 % or 380 kg/ha, we must detract at least some 12 % of bran and we might allow for some 6 % for other losses, before we arrive at an estimate of the net consumable product.⁷⁴ 310 kg per ha owned or 45 % of the gross harvest may be a pessimistic estimate of what the inhabitants of Göbrichen finally could consume.

This would mean that a peasant farm of 5,5 persons would have needed 4,4 hectares of land in Göbrichen in order to be self-sufficient—if we may for the moment assume that self-sufficiency is an appropriate concept for early modern peasant societies.⁷⁵ Of course, Göbrichen was no self-sufficient and isolated peasant village. It was embedded in relations of state support, credit, and labour markets. In our figure of 310 kg/ha, this is ignored as are the considerable possibilities for additional economic growth coming from protoindustry especially in the second half of the 18th century, and from increasing solar activity.

The most important form of economic growth, however, was certainly a consequence of the increase in land utilization. In 1701, 210 ha were cultivated in Göbrichen. In 1718, the growing population was farming on 475 ha of land, and the area expanded further until in 1791, 542 ha were plowed. Given a pessimistic estimate of productivity (310 kg/ha), and a relatively high estimate of consumption (250 kg/person), the carrying capacity of Göbrichen may be estimated as 260 persons in 1701, and at least 589 persons since 1718. In fact, there were only 182 persons or 70 % of the theoretical carrying capacity in the village at the beginning of the 18th century.⁷⁶ Until emigration set in, the population grew considerably—in 1743, about 237 persons were living in Göbrichen.⁷⁷ However, the economy of the village had been growing faster. Since 1718, its carrying capacity was about 589 persons according to our estimates, and the population that was living in Göbrichen when emigration set in took up only 40 % of the resources. If defined in terms of agrarian product and nutritional needs, the overpopulation concept tells us nothing about why so many people emigrated from this village.

5. A process of overpopulation?

We have so far applied static definitions of overpopulation that have pointed to a specific situation, not to a process. But saying that overpopulation was behind emigration might imply more than dull figures about grain and bran. The problem with overpopulation, as this concept is usually understood, is not that the parcels of land are too small, but that they become smaller and smaller in a never ending process of subdivision. The dynamic view of overpopulation implies a concept of human reproduction and an entire idea of historical change that is very popular in German social historiography. This concept says that people procreate in an irrational pace if

⁷³ Zimmermann, *Reformen* (1983), 30, and sources from Göbrichen.

⁷⁴ Pfister/Kellerhals, 'Verwaltung und Versorgung' (1989), 179.

⁷⁵ The figure of 4,4 ha is pretty close to what is usually given in the literature. On the self-sufficiency chimera, cf. Pruit, 'Self-Sufficiency' (1984).

⁷⁶ *Generallandesarchiv Karlsruhe* 171/1512 (visitation protocol 1699).

⁷⁷ *Generallandesarchiv Karlsruhe* 180/165 (visitation protocol 1743).

they are not hindered somehow on an institutional level, and that this process must either be linked to the economic growth process, or it will lead to all kinds of tensions and catastrophes, which have the most important historical consequences. To use the language of behavioural ecology: humans are seen as *r* strategists who tend to have more children than they are able to raise.⁷⁸ As the overpopulation and migration theorist Wolfgang Köllmann wrote, 'the realized danger of relative overpopulation should be interpreted as the one phenomenon that triggers off the dialectic processes of economy and demography'.⁷⁹ In the 1930s, German social historians even believed that overpopulation causes Bolshevism.⁸⁰

Social control seems necessary in order to prevent such developments. German social historians and population sociologists usually locate such modes of social procreation control in two traditional social settings: the guilds of the medieval and early modern towns with their economy of a just *Nahrung* (subsistence, nourishment), and the inheritance practices of nondividing peasants under manorial domination.⁸¹ The *Hufenbauer*, a peasant bound to a fixed and undividable piece of land, has even been identified with the European peasant as a social type opposed to the partitioning East Europeans.⁸²

In Göbrichen, the artisan group organized in guilds obviously was small. What might be expected is some influence of the old European *Hufen* as a preventive check to population growth. Indeed, *Hufen* of some 15 Morgen or 4,7 ha had once been given to the peasants of Göbrichen when the village was founded in the 8th century.⁸³ In the following millennium, the arable had been expanded and subdivided thoroughly, and the peasants had won full property rights over most fields. Even those manorial units were partitioned that were, *de jure*, the impartible property of the manorial lord. Corresponding to the 24 *Hufen* or pieces of land were *Hofstätten* or places in the village where houses could be built. But as early as 1526, two of these places were empty, while 41 houses stood on the remaining 22 original house places, not counting five houses that did not belong to the original manor. Partitioning was highly unpopular among the early modern bureaucrats for whom tax collecting became more difficult the higher the number of taxable units was. In Baden-Durlach, the political territory Göbrichen belonged to, even the partitioning of partible property (*Theilbare Güter*) was made dependent on official consent.⁸⁴ But this was theory. It was impossible to prevent the subdividing of the partible lands because they were *zinseigen*, full if rent-paying property of the peasants. In theory, also

78 Vogel, 'Populationsdichte-Regulation' (1986), 15. Examples for *r* strategists are rabbits, rats, and lemmings. It should however be noted that biologists do not think *homo sapiens* is a *r* strategist. Instead, humans and other big animals are labelled as *K* strategists who have only as many children as the carrying capacity *K* allows for.

79 Köllmann, 'Wanderungstheorie' (1976), 263-264 (my translation). Cf. Ipsen, 'Agrarische Bevölkerung' (1940), Conze, 'Übervölkerung' (1940), and Marschalck, *Bevölkerungsgeschichte* (1984), but see Marschalck, 'Deutungen' (1992) for a questioning of the high natural drive to procreate that is implied by the overpopulation approach. An early critical voice as far as the naturalistic concept of procreation drives is concerned was Mackenroth, *Bevölkerungslehre* (1953), 303.

80 Conze, 'Übervölkerung' (1940).

81 Sombart, *Bourgeois* (1920), 11-25, Ipsen, 'Bevölkerungsgeschichte' (1933/72), Conze, 'Übervölkerung' (1940), Marschalck, *Bevölkerungsgeschichte* (1984), 17.

82 Brunner, 'Bauerntum' (1968).

83 Tölke, *Göbrichen* (1995), vol. I, 404.

84 Landesordnung (1715) Section 6 Title 1.

the number of the house places in the village was limited. However, not only were some of these empty (5 out of 51 in 1526, and 15 out of 57 in 1718), but others were subdivided (3 in 1718), and no less than 13 married couples lived in the village without having an own house.⁸⁵ House and *Hufe*, hallmarks of traditional German social reproduction, do not seem to have had any controlling function in Göbrichen.

Another safeguard against overpopulation also did not exist in this village—the sharp division between ‚full‘ and ‚auxiliary positions‘ presupposed by German social history and population theory.⁸⁶ Forming a new household was not linked to getting a full peasant holding together with the social license for reproduction, as theory has it. Instead, property was accumulated over a long life course during marriage. Even law interpreted marriage as a kind of firm whose *Rungenschaft* or surplus should be divided amongst the heirs.⁸⁷ Being a peasant did not mean keeping the inherited farm together, it meant starting with little and ending with a profit.⁸⁸

Consequently, the annual number of deaths among the married men did not have a strong influence on the number of new marriages among the next generation in Göbrichen in the century before emigration set in.⁸⁹ A similar result will be found if we look at the first and second columns of table 4 below, which correlates the economic position of the households with their reproductive success. At least in 1701 and 1718, the arable land a household possessed had almost no influence on the number of children who finally would found a new household in Göbrichen a generation later ($Rho=0.15$ 1701, $Rho=0.16$ 1718). It seems that until emigration set in, Göbrichen reproductive behaviour did not follow the social logic of full family positions.

If there was no traditional social structure or internalized social logic that influenced the pace of population growth in Göbrichen, possible the early modern state might intervene as a substitute. Indeed, the marriage limitations that are so central to the German population theory of an ‚agrarian mode of social reproduction‘ are closely linked to the genesis of the bureaucratic police state. As Josef Ehmer has shown, they are more typical for the 19th century than for the early modern period.⁹⁰ In Baden-Durlach, such regulations were only introduced as late as 1717 and 1730.⁹¹

85 Other than might be concluded from Dupâquier, ‚La France surpeuplée?‘ (1974), 40, it was perfectly normal that some married children did not have their own household, as can be seen from the police ordinance of 15 May 1743, which regulated citizen obligations for these cases: *Wesentlicher Inhalt* (1782), 755.

86 For a critique of this concept, see Ehmer, *Heiratsverhalten* (1991).

87 Landrecht (1710), section 6.

88 Cf. Sabean, *Neckarhausen* (1990), 256-258.

89 This is the result of a time series analysis done on the number of first marriages, using the number of deaths of men once married as an independent variable, for the years from 1617 to 1740. Using death of men only makes sense since widowers kept the usufruct of their wives‘ property, other than widows. Using death of women also does not change the result much. By means of the Box-Jenkins method, a first order serial correlation of $r=0.25$ ($Rsq=0.06$) has been detected. Differencing did not remove autocorrelation, therefore a Yule-Walker regression model was applied, which explained 8 % of variance, controlled for autocorrelation. Of the input variables (deaths, deaths lag 1, deaths lag 2), only deaths at lag 2 were significant ($T\text{-Ratio}=2,074$).

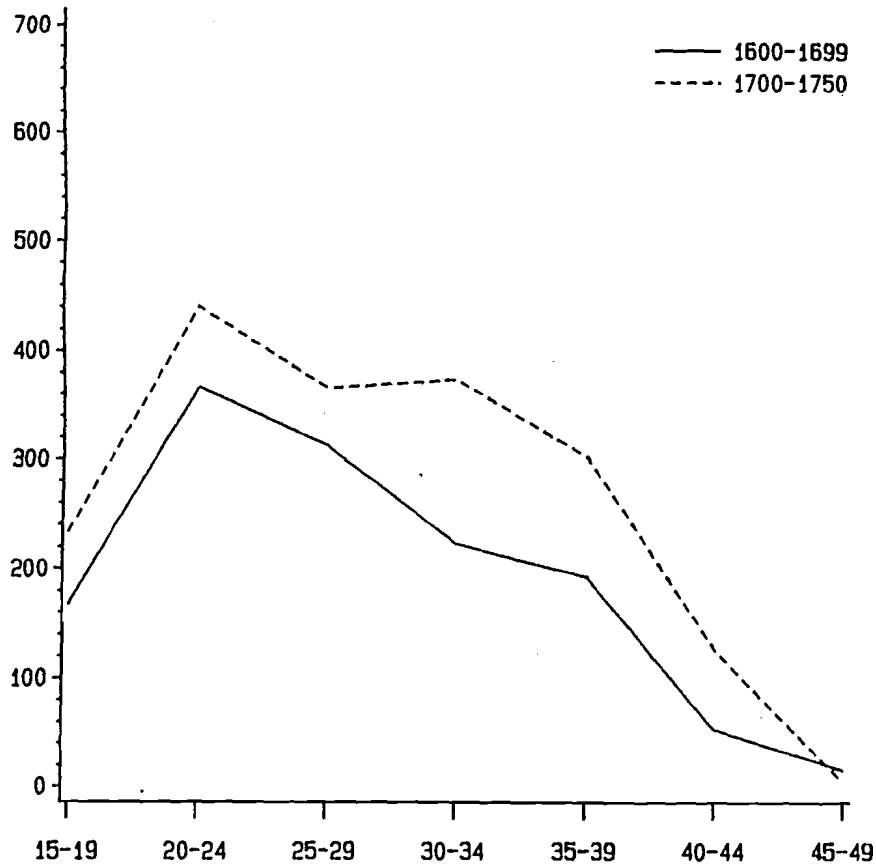
90 Mackenroth, *Bevölkerungslehre* (1953), 427, Ehmer, *Heiratsverhalten* (1991), 45-61.

91 Ordinances of 3 Apr 1730 on marriage age and previous service, 6 Feb 1717 on minimum property or previous military service (*Wesentlicher Inhalt* (1782) I, 258, 262-263).

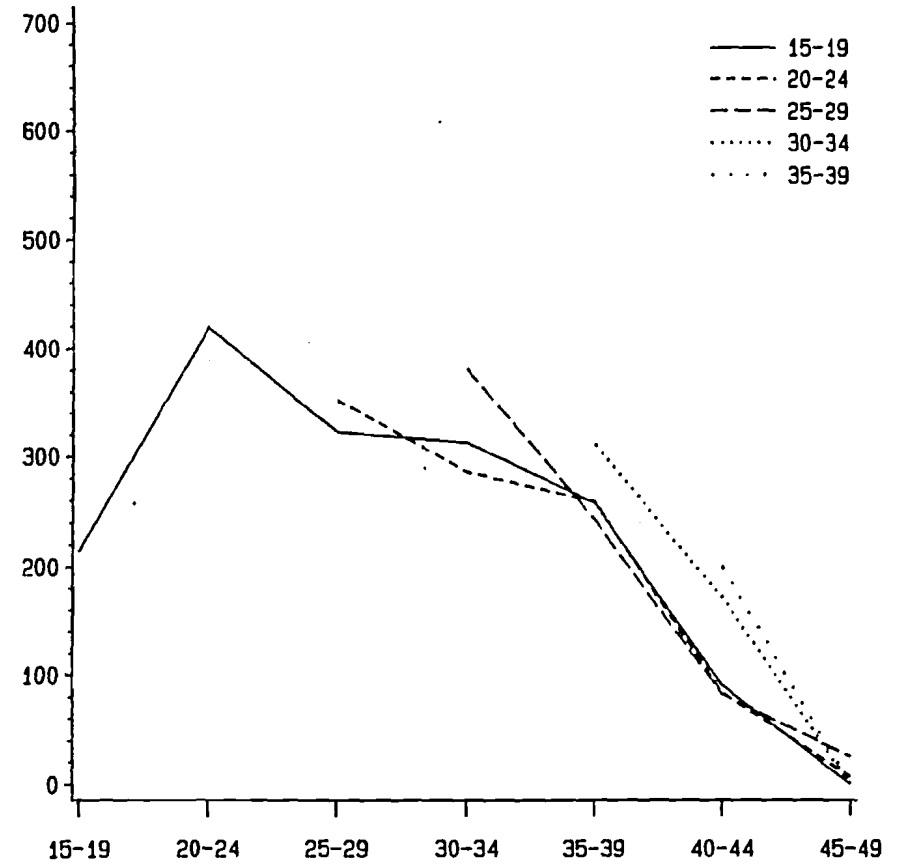
The effects of such police ordinances were rather limited in the 18th century, although a certain effect of the 1730 marriage age ordinance can be observed in our data.⁹²

⁹² On police ordinances cf. Raeff, *Well-ordered Police State* (1983). Between 1700 and 1730, 12 % of the brides were under 18, and 39 % of the grooms under 25. After the ordinance, none of the women and only 26 % of the men married younger than it was allowed. If the minimum property ordinance of 1717 had any effect, we should be able to observe a correlation between parents' property in 1718, and the number or proportion of marrying children in table 4.

Graph 3: Age specific fertility by marriage year



Graph 4: ASF by marriage age



Forbidding marriage to the poor had no base in law other than police ordinances. Marriage was valid independent of dowry, as the *Landrecht* of 1654 put it.⁹³ Villeinage did not imply that the margrave had any say so in the marriages of his subjects.⁹⁴ His consent was necessary only when his subjects wanted to marry the villeins of such foreign princes who were not part of the network of mutual marriage freedom that connected many territories of early modern Europe.⁹⁵ Also, the consent of the village community was not required for marriage. Only male immigrants had to be accepted as full citizens or denizens before they could found a household in Göbrichen. For citizenship, a minimum property was necessary, but denizens could marry as well.

The canonical rule that *consensus facit nuptias*, consent makes the marriage, was still valid in Lutheran Baden-Durlach.⁹⁶ This means that the legal position of a couple that intended to get married was very strong. Legally, if they declared their intention to each other, they were married, and even in cases where both were poor, such marriages could be enforced against the will of one of the partners. In 1698, this was the case with Andreas Kaiser, the third poorest landowner of Göbrichen, who had never been respected by his wife. The pastor and superintendent attempted to reconcile this marriage although it would have been unthinkable in terms of the 'agrarian mode of population'.⁹⁷ If a bridal pair either slept with each other or went to church for wedding, their marriage was consummated. As 16 % of the brides were pregnant in first marriages, we may assume that most marriages were consummated before wedding.⁹⁸ Sanctions against premarital intercourse were weak. It could be punished by the same fine as a guesthouse brawl in the night, or by denying a Tuesday wedding to the bridal pair. Before 1700, even the majority of pregnant brides managed to escape the latter sanction.

Parents were the only persons who had to give their consent to the marriage of their children. But this consent, too, was not indispensable, and if it was lacking, this did not make a consummated marriage void.⁹⁹ In case of conflict, the consent of the couple was more important than the opinion of the parents, at least in legal terms. Friedrich Christoph Wüst, for instance, did not get his father's consent for his marriage with Catharina Eichler, which he had promised and with whom he had already fathered a child. In 1738, Catharina enforced a wedding ceremony, which Friedrich appeared at, led by the militia, publicly declaring he wanted to be her husband out of his free will.¹⁰⁰

It seems that the processes of procreation and population growth were indeed not efficiently controlled by any authorities or social institutions, as it would be required by the theory of an

93 *Landrecht* (1710) section 4 title 24 paragraph 8.

94 Landesordnung of 21 Sep 1495, paragraph 2 (Carlebach, *Badische Rechtsgeschichte* (1906/09) I, 94).

95 Ulbrich, *Leibherrschaft* (1979), 233, Müller, *Ehegenossame* (1974), Hacker, *Baden und Breisgau* (1980), 110-111.

96 Wüstenberg, *Eheschließungsrecht* (1991).

97 *Generallandesarchiv Karlsruhe* 171/1512, visitation protocol 1698.

98 27 out of 167 first marriages between 1617 and 1740.

99 Wüstenberg, *Eheschließungsrecht* (1991), 96-122.

100 Hahner, *Ortssippenbuch Göbrichen* (1985), 3734.

agrarian mode of social reproduction.¹⁰¹ In the overpopulation perspective, we would then assume that some kind of unchecked lemming instinct was indeed at work in this subdividing and growing peasant population. Is this perspective appropriate?

Indicators of birth control suggest a sceptical answer to that question. Analysis of age specific fertility rates (ASF), given in graphs 3 and 4, shows that there was some limitation of family size in the 17th century and among those women who married early, as can be inferred from the concave or straight course of the ASF. For the other groups and for the early 18th century marriages, the curve runs in a convex line.¹⁰² We may infer that birth control was more widespread during the difficulties and crises of the 17th century than during the upswing of the early 18th century, and that those women who married earlier also reached the number of desired children at an earlier phase of their lives. Both results suggest a certain ability to adapt reproduction in front of changing circumstances.

While the Henry indicator refers to the behaviour of the entire population, an indicator suggested by Ulrich Pfister helps us detecting the specific couples who practised birth control. Birth control is assumed if the last birth occurred previous to the woman's 35th birthday or if there was a very long period between the second last and the last birth. If other explanations, e.g. death of husband, are possible, the couple is excluded from analysis.¹⁰³ The first two couples with a positive Pfister indicator were Barbara Wüst and Dorothea Hofsess with their respective husbands, who had married in 1673 and 1677. As all but four earlier marriages had to be excluded from analysis, we do not know if these two women were innovators. Still, their cases suggest that the population process in Göbrichen was controlled neither by the authorities nor by a social logic of full family positions but by the couples themselves and especially by the women of the village. In 1695, the women voted for Barbara Wüst as the village midwife, in 1698, Dorothea Hofsess was elected in another democratic vote. We may assume that their knowledge in birth control helped both of them in getting elected. In these years, a deep conflict between the parties of the two midwives was dividing the women of the parish, because the Hofsess group insisted that giving birth should become less dangerous. It seems the women of Göbrichen were no passive victims of an instinct driven reproductive process.¹⁰⁴

Let us now look again at table 4. Among the rich and poor landowners of 1701, demographic behaviour was equal. In the 1718 group, the number of births was possible limited by the poor,

101 Marschalck, *Bevölkerungsgeschichte* (1984), 20.

102 The concept of age specific fertility rates as an indicator for birth control has been introduced by Louis Henry. It infers the existence of a widespread practice of birth limitation in the entire population from the concavity of the age specific fertility curve. For calculations, I have followed the instructions given by Pfister, *Geburtenbeschränkung* (1985), 83-87. I have made use of those marriages that existed for the entire period of five years for that the age specific fertility rate was calculated. In the case of 15 to 19 years old women, all marriages have been used. Marriages were excluded if the birth year of at least one child is not known. The number of marriages that could be used for analysis is 102. 41 of them were started between 1604 and 1898, 61 between 1701 and 1748. In the age group of 30 to 34 years, the difference between the ASF of the women married with 20 to 24 years and the ASF of those married with 25-29 years is significant (Wilcoxon rank test $Z=2,05$, $Prob=0.04$).

103 For a complete definition see Pfister, 'Geburtenbeschränkung' (1983), 213-232.

104 Hahner, *Ortssippenbuch Göbrichen* (1985), 3728, 1455, *Generallandesarchiv Karlsruhe 171/1512* visitation protocol 1698, *Generallandesarchiv Karlsruhe 171/1512* visitation protocol 1699.

and the age at marriage—but not the celibacy rate—of the poor group children was higher. It should be noted that the marriage behaviour of the children obviously refers to the situation one generation after 1718—average children of the 1701 group married around 1717, those of the 1718 group about 1736, and those of the 1736 group in 1748, when emigration to North America peaked. Indeed, the differential demographic behaviour of the 1736 group was remarkable. The men in the lower strata of Göbrichen society seemed to marry older women and to spend a lower number of fertile years with them. Consequently, they fathered fewer children even if birth control was not more frequent among them. We have no exact information about the workings of differential infant mortality, but the outcome was a rather strong correlation between the acreage a couple possessed and the number of children that grew up. Also, the social position of the parents had an influence on their children's rate of celibacy, and apparently also on their age at marriage. In the end, not only the absolute number of children that married, or the reproductive success of a couple was highly dependent on being rich or poor, but even the life expectancy of those children who survived infant mortality. All this had no influence on migration, as can be seen from the last row of table 4. But in the middle of the 18th century, some demoeconomic process really must have been going on in Göbrichen: suddenly, being from a rich or poor family began to have a tremendous influence on one's chances in life. What was happening? Overpopulation?

Table 4:
Correlations of economic position with demographic behaviour in
Göbrichen, landowning households 1701 to 1736

Correlation (Rho) N / significance	acreage 1701	acreage 1718	acreage 1727	acreage 1736
age at first marriage (husband)	-0.10 23	-0.25 37	-0.14 41	-0.10 38
age at first marriage (first wife)	0.05 23	0.29 37	-0.12 41	-0.30 36 †
fertile years, all marriages to age 40	-0.20 23	0.09 36	0.12 41	0.31 36 †
intergenetic interval	0.18 23	0.14 42	0.10 46	0.02 40
birth control index (yes/no)	0.41 8	-0.40 20 †	-0.06 26	-0.08 27
number of births	0.00 26	0.26 42 †	0.16 46	0.36 41 *
proportion children with unknown fate	-0.18 25	0.07 42	0.04 46	-0.31 41 †
infant mortality up to age 6	0.02 25	0.04 42	-0.12 46	-0.16 41
number of children surviving age 6	-0.01 26	0.19 42	0.31 46 *	0.48 41**
proportion children marrying in Göbrichen	0.14 25	0.11 41	0.21 46	0.39 38 *
marriage age of children	-0.25 22	-0.45 35**	-0.22 38 *	-0.37 27 †
number of married children	0.15 26	0.16 42	0.33 46 *	0.57 41**
life expectancy of children over age 6	0.16 25	-0.03 41	0.11 46	0.46 38**
proportion of outmig- rants, all dest.	-0.17 25	0.11 41	0.01 46	-0.10 38

test statistics: Spearman's Rho, Wilcoxon's Z
significance levels: ** 0.01, * 0.05, † 0.10

I doubt it. Although the increase of differential mortality might be interpreted as a positive check, the procreation of the poor obviously was no decisive problem in Göbrichen. The reproductive success of the upper strata was higher than ever now, whilst the poor had fewer chances than before. As we have seen, the carrying capacity was not exhausted, and obviously, all these increasing adaptations of demographic behaviour to the economic resources strongly suggest that the Göbrichers were no *r* strategists. Their procreative behaviour was neither controlled by a feudal *Hufen* structure nor by the ordinances of an enlightened government, but it was elastic to differential resources nonetheless.

An alternative explanation would follow the results of David Sabean who has studied the southwest German village of Neckarhausen, some 50 km from Göbrichen. He has suggested that in the 18th century, an older 'vertical' form of marriage relations between the rich and poor classes was supplanted by a 'horizontal' model of increasing endogamy.¹⁰⁵ According to this concept of kinship classbuilding, rich and poor groups would become more closed, kinship would become more important, and belonging to a rich or poor family would indeed become more decisive in the course of the 18th century.

The Göbrichen data we have on the first half of the 18th century fit Sabean's model quite well. Since 1736, brides and grooms increasingly came from the same strata.¹⁰⁶ A similar development can be observed with the choice of godparents, which can be evaluated using data from 1720 to 1759. Until 1725, parents in Göbrichen neither preferred godparents of the same nor godparents of a different property group for their children, although godparents always tended to be more wealthy than the parents of their godchildren. Between 1725 and 1733, godparenthood relations tended to go across the limits of wealth groups, and after 1733, the rich tended to take rich godparents, and the poor to take poor.¹⁰⁷ Looking back from the 19th century, Sabean's proposal also seems to be quite plausible for Göbrichen where a wealthy kin group grew during the 18th century. It occupied most political positions and was strong enough, in 1807, to appropriate a forest that had once been one of the most valuable parts of the village commons.¹⁰⁸ Whatever the precise workings of the class and kinship group building process were, kinship as a concept certainly gives us a deeper insight into the social history of European emigration areas than overpopulation, besides explaining much of the workings of transatlantic migration as a system.¹⁰⁹

¹⁰⁵ Sabean, *Neckarhausen* (1990), 424-425.

¹⁰⁶ For every marriage between 1701 and 1750, I have estimated the inheritance portion that could be expected by both of the partners, by dividing the acreage of the parents by the number of the siblings, adding together first and second marriages of the respective fathers. Results could be estimated with both partners in 14 marriages. Spearman's Rho between husband's and wife's prospective portion was negative, -0.32, with the 7 marriages before 1736, and significantly positive, 0.84*, with the 7 couples after 1736.

¹⁰⁷ I have evaluated all baptisms between 1720 and 1759. A connection between a parent household and a godparent household was only included into analysis when occurring the first time. Wealth of both households was known in 97 cases (Rho=0.07). Ordering the observations by date of first baptism, four groups of equal size were assembled: February 1720 to December 1721 (N=24, Rho=0.13), 1722 to February 1725 (N=25, Rho=0.07), 1725 to April 1733 (N=24, Rho=-0.46*), 1733 to December 1758 (N=24, Rho=0.35+). On average, godparents came from families with 2,88 ha land more than parents.

¹⁰⁸ Tölke, *Göbrichen* (1995), vol. I, 222, 282-287.

¹⁰⁹ However, in the case of Göbrichen the emigrant households did not form a kinship subgroup that could have been distinguished from the other families. Cf. Ostergren, *Community Transplanted* (1988) for a very different 19th century case in Sweden.

Conclusion

This paper has stressed the importance of kinship, information, and other social networks for an understanding of early transatlantic migration as a self-generating system. It also does not deny the importance of relative productivities, supply and demand on the transatlantic land, labour, and credit markets that connected the Rhine lands with the best poor man's country, Pennsylvania. But it warns against the practice, rampant among social historians, to use the language of overpopulation when comparing the relatively poor home territories with the more rich destinations of migrants. In the best case, by overpopulation nothing more is meant than low productivity. Then we do not need a Malthusian population theory in order to explain why people left such areas. As far as the overpopulation concept is based on a corporatist ideology that looks at each territory as the only legitimate sphere of activity for its subjects, these implications are also misleading. Migration is a normal activity within encompassing systems, it cannot be interpreted within the isolated context of the emigration territory and its failure to keep the subjects at home. Otherwise, the overpopulation concept suggests statements about economic carrying capacities. As it has been demonstrated in this paper, these propositions may be wrong in some cases, and they require a precise knowledge of local production and population in order to be proven. In the worst case, by the overpopulation concept the idea is suggested that the reproductive behaviour of human beings is irrational and threatening. It has been demonstrated that this implication is utterly inadequate for an understanding of early modern society in an emigration area. As a standard explanation of emigration, we should therefore give up the concept of overpopulation.

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