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Identity Creating Goods and Free Trade

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Identity Creating Goods and Free Trade

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Abstract: Identity creating or cultural goods are characterized by a positive consumption network externality and increased utility because of doing what the reference group expects. Different countries have different cultural goods. It is shown that moving from autarky to free trade a country may suffer a welfare reduction if consumption of its own cultural good is reduced in favor of a foreign cultural good, regardless of comparative advantage. On the other hand, welfare may be increased even if the domestic cultural good disappears altogether.

JEL classification: F 10,

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Identity Creating Goods and Free Trade

1. Introduction

Some critics of globalization have claimed that it leads to the crowding out of goods and services which are considered to be part of the cultural and social identity of some countries. Examples are changes in food habits with "McDonaldization" as the culprit, traditional domestic music or even the way certain types of music are performed which is fading in favor of foreign influences, the dominance of Hollywood movies which is said to have ruined many national film industries which flourished in the past, or the fact that Santa Claus is dominating Christmas time even in countries in which traditionally the "Christkind" (Baby Jesus Christ) was believed to deliver the Christmas presents. In many cases it seems to be the "American way of life", its goods, services and customs which spreads at the expense of the way of life of smaller, economically weaker countries who are seen as victims of globalization and free trade which reduces rather than increases their welfare as compared to autarky.

Such claims are questioning one of the oldest and most cherished doctrines of economics, the theory of comparative advantage as put forward first by David Ricardo. According to this theory comparative advantage is not only the main driving force behind the flows of goods and commodities between countries but also a source of welfare improvements for all countries participating in free trade. It would also go against more recent models of intra-industrial trade which show that international trade improves welfare even in the absence of comparative advantage by increasing the number of available varieties of a differentiated product (Helpman and Krugman 1985). The claim made is that – on the contrary – free trade reduces variety by pushing certain goods completely out of the market.

The present paper adds to the still small literature on the topic by considering a simple model with three goods, one a standard consumption good and the two others "cultural" goods which compete with each other as differentiated products in a modified Hotelling "linear city" model. They are called "cultural" or "identity creating" goods for two reasons. First, the

utility a consumer derives from the consumption of such a good is increasing in the total number of consumers of the same good, i.e. there is a positive network externality. Second, for each country one of the goods is considered as “traditional”, meaning that its consumption creates additional utility. In addition, consumers in each country have “brand” preferences according to the ideal variety approach of differentiated products. Using this setting we first derive autarky equilibria in the domestic country and analyze their welfare properties. Then we allow free trade with another country whose “cultural” good is the other variety. To simplify the analysis we assume that the foreign country does not change its consumption habits and consumes only its own cultural good and the standard consumption good also with free trade. The consumption pattern of the domestic country depends on the parameters characterizing the cultural good and the brand preferences. We assume that with free trade there is also a network externality with respect to the consumption in the foreign country which is stronger than in autarky. If the domestic country is very traditional and inward looking, i.e. the network externality relating to the consumption of foreigners is weak, then free trade has no effect at all. If tradition is less powerful and the domestic country is less inward looking then in the free trade equilibrium less of the domestic cultural good is consumed and welfare is smaller than in autarky. This is the possibility envisaged by the above mentioned criticism of globalization. If the domestic country is outward looking, however, free trade leads to higher welfare than autarky, in some cases even if the domestic cultural good disappears altogether. This is the more remarkable as up to this stage no comparative advantage is assumed. Introducing comparative advantage does not change the above results in a substantial way. What is remarkable, however, is the possibility that the domestic country may be better off in a free trade regime without comparative advantage than if comparative advantage is present.

The paper is organized as follows. In the next section we survey related literature. Then we present the basic model, Afterwards we analyze equilibria in autarky and their welfare

properties. Then we consider free trade with a country whose cultural good is different and who does not change its consumption pattern. The main results of the paper are contained in the next section which offers a welfare comparison between autarky and free trade equilibria. Next it is shown that assuming comparative advantage does not change the main results. The paper concludes with a brief discussion of the model and possible further directions of research.

2. Related Literature

The model most similar to the present one is due to Janeba (2007). Essentially he also uses a Hotelling model of horizontal product differentiation with network externalities, though the formal setup is a bit different. A main difference between his model and that of this paper is that the choice of the "cultural good" in a particular country is governed by smaller costs of production, whereas in the present paper comparative advantage does not really play a role. Furthermore, Janeba focuses on Pareto-efficiency and does not consider a social welfare function, though this seems a natural route given the individual utility function. Furthmore, preference for one of the network good does not imply additional utility from its consumption as is assumed in the present paper.

The latter assumption is inspired by Akerlof and Kranton (2000). They propose an approach in which "identity", i.e. belonging to a particular group, enters the individual utility function. Identity, in turn, is created by following certain patterns of behavior, including consumption habits, and is strengthened by the size of the reference group. Utility is reduced, on the other hand, if members of the reference group break the implicit rules and behave differently from what is considered to be appropriate. The utility function used in the present paper can be viewed as a simplified version of that used by Akerlof and Kranton. The additional utility obtained from the domestic traditional good can be explained in various ways. The simplest way is to interpret it simply as the joy of adhering to tradition. One could also assume that using a particular good or doing things in a particular way leads to a learning process which

allows the production of greater utility from the same input. In any case, it seems reasonable to include a parameter that represents the utility of following a national tradition in the definition of a cultural good in the sense used in this paper.

While Akerlof and Kranton (2000) do not apply their approach to the problem of national identity in a globalized world, their concept seems very appropriate for that purpose. A paper in similar vein as Janeba's and the present one is Francois and vanYpersele (2002) who try to explain the (relative) decline of the European, particularly the French, film industry. Their model is combining horizontal and vertical product differentiation, as the two types of movies, Hollywood and French, not only present two different styles or varieties for which consumers have different preferences. They are also differentiated with respect to their appeal to wide audiences. French movies are assumed to be more specifically aimed at French spectators, whereas Hollywood tries to make the movies digestable for many different tastes without pleasing any of them in particular (the wording is deliberate as a comparison of French and American food would probably come to a similar verdict). In any case, the Hollywood way draws larger audiences, allows the exploitation of economies of scale and scope and could possibly push other types of movies out of the market. In such a situation subsidies may be justified.

Different conclusions are drawn by Bekkali and Beghin (2005) who show that promoting domestic cultural content in Broadcasting may be counter-productive because broadcasters who cannot be controlled that way may reduce the domestic content in such a way that it more than compensates the forced increase in regulated programs.

In a very interesting recent paper Rauch and Trindade (2009) consider dynamic effects. They use a love of variety approach and show first that free trade increases welfare as compared to autarky in a static framework, despite a reduction of the production of domestic cultural goods. But there is also some "learning by doing", the quality of cultural goods depends in a longer run perspective on the volume of production, and therefore domestic welfare may

suffer from the dominance of foreign cultural goods. This is in stark contrast to the views of Cowen (2002) who emphasizes the positive impact an encounter of domestic producers of cultural goods with foreign cultural goods may have, not least because of the new skills they may acquire at that occasion. His book is readable and full of anecdotal evidence, though quite on the optimistic side.

Trade and network externalities are also the topic of Pandey and Whalley (2004), though their focus is on social networks and not on cultural goods.

We turn now to the formal model of the present paper.

3. Basic model

3.1 Production

Consider an economy with labor as the only factor of production. It can produce three goods whose quantities are denoted as z, x_1 and x_2 respectively. The production functions are

$$z = L_z/a, \tag{1}$$

$$x_1 = L_1/k_1, \tag{2}$$

$$x_2 = L_2/k_2, \tag{3}$$

where L_i, i = z,1,2, denotes the labor input for the production of good i, and a, k_1 and k_2 denote the labor input coefficients. Unless stated otherwise it is assumed that $k_1 = k_2 \equiv k$. Total labor endowment is normalized to equal 1, and we assume $0 < k < 1$.

Denote the nominal wage rate as w and the prices of the three goods as p_i, i = z,1,2. We assume perfect competition, hence $p_z = wa$ and $p_j = wk_j$, j = 1,2. To simplify notation we set $w = 1$ unless stated otherwise.

3.2 Consumption

Consumers derive utility from two types of goods: From a (composite) consumption good whose quantity is denoted as z, and from a "cultural" good. In order to formalize some of the properties of a cultural good mentioned above we modify the Hotelling model of horizontal product differentiation as follows. Each of the two cultural goods is located at the endpoint of the unit interval. Each consumer buys one unit either of good 1 or of good 2. A continuum of consumers with measure one is uniformly distributed over the interval. A consumer located at point x in the interval suffers a reduction of his utility equal to the distance between his location and the good consumed times δ. Following the standard convention x measures the distance from point 0 and $1 - x$ the distance from point 1, hence the utility reduction when buying good 1 equals δx. In addition to this standard property of horizontal product differentiation there are two more parameters affecting the utility of a consumer. The first is a network effect: The utility derived from the consumption of a cultural good is increasing in

the number of consumers who buy the same good. Denoting the market share of good 1 as q the additional utility derived from good 1 equals νq. Economically δ can be interpreted as a measure of individualism and ν as a measure of (social) conformism.

The second parameter is supposed to capture the strength of national traditions or customs and is denoted as τ. It is associated with only one of the cultural goods, say good 1 for the country under consideration, and yields additional utility if the good is bought which by custom and tradition is considered to be the "right" one, the one that confers a sense of (national) identity in the sense of Akerlof (2000).

Putting all together, the gross utility of consumer x is defined as follows

$$u(x; z, x_1, x_2) = z + \begin{cases} \tau + \nu q - \delta x & if\ x_1 = 1 \\ \nu(1-q) - \delta(1-x) & if\ x_2 = 1 \end{cases} \tag{4}$$

Net utility is obtained by subtracting from (4) the expenditures for consumption, i.e. az and k. It is assumed that the parameter values are such that in equilibrium net utility is always positive for strictly positive quantities of the consumption good and one of the cultural goods. For reasons which will become apparent below we introduce the following terminology:

A country (or society) is called *conformist* if $\nu > \delta$.

A country (or society) is called *individualistic* if $\nu < \delta$.

A country (or society) is called tradition driven or, for short, *traditional* if $\tau > |\nu - \delta|$.

A country (or society) is called *non-traditional* if $\tau < |\nu - \delta|$.

3.3 Social Optimum

Total social welfare consists of gross utility as defined in (4) integrated over all consumers minus total expenditures. Clearly, the latter equal total labor income and are a constant normalized to be equal to one. Since each consumer by assumption consumes one unit of one of the cultural goods we get $z = a(1 - k)$ which is also a constant. Consequently, total social welfare is a function of q, and a social planner would maximize

$$\max W(q) = z + \tau q + \nu\left[q^2 + (1-q)^2\right] - \delta\left(\int_0^q y dy + \int_0^{1-q} y dy\right) - 1 \tag{5}$$

The interpretation of $W(q)$ is as follows: Total consumption of the consumption good equals z. A fraction q of consumers consumes cultural good 1 and enjoys the utility of following the tradition, denoted as τ. Each of those consumers enjoys also the positive network effect, given by νq, the other consumers buy good 2 and enjoy the network effect $\nu(1 - q)$. The next term captures total disutility from not getting the "ideal" variety, and finally total expenditures equal to one are subtracted.

Differentiating W with respect to q yields

$$dW/dq = \tau + 4\nu q - 2\nu - 2\delta q + \delta \tag{6}$$

Now clearly W is strictly convex in q as long as $2\nu > \delta$, which holds for a conformist country. Only in a very individualistic country with $\delta > 2\nu$ and little impact of tradition do we get an interior solution with $0 < q < 1$, or, more precisely

$$q = \frac{\delta - 2\nu + \tau}{2(\delta - 2\nu)}. \tag{7}$$

Obviously $q < 1$ requires $\tau < \delta - 2\nu$, and we call a country satisfying this inequality *super-individualistic.*

4. Autarky Equilibrium

Since in an autarky equilibrium all prices are given by the unit costs of production and the quantity of the consumption good equals $(1 - k)/a$ all that is left to determine is the fraction of consumers buying the traditional cultural good 1. Leaving all constants aside the modified Hotelling indifference condition equals

$$\tau + \nu q - \delta q = \nu(1 - q) - \delta(1 - q) \tag{8}$$

implying

$$q = \frac{1}{2} - \frac{\tau}{2(\nu - \delta)}. \tag{9}$$

4.1 Conformist country

Recall that a conformist country is defined by the property $\nu > \delta$. Consequently, there exists always a homogeneous equilibrium with $q = 1$. This is an equilibrium if not even the consumer with maximum dislike of good 1 has an incentive to change to good 2, formally if

$$\tau + \nu - \delta > 0 \tag{10}$$

holds. The left hand side of (8) equals the utility of the consumer located on the other end point of the interval if everybody buys good 1. He enjoys the value of adhering to tradition plus the maximum network effect, but he suffers also the maximum disutility. By moving to good 2 he loses the two positive effects, but he also has no disutility.

In a traditional conformist country $q = 1$ is the only equilibrium. There does not exist a diversified equilibrium: As can be seen from (9) $\tau > \nu - \delta$ implies that no positive value of q satisfies the indifference condition.

In a non-traditional conformist society there exist two more equilibria in addition to the homogenous one with $q = 1$. As can be seen from ( ) there exists a diversified equilibrium, denoted as q_d, with $0 < q < 1/2$. But there exists also the even more extreme anti-traditionalist equilibrium with $q_n = 0$. The equilibrium condition of the latter is

$$\nu - \delta > \tau. \tag{11}$$

The interpretation is analogous to that of (10). The consumer with the strongest preference for good 1 enjoys the maximum network utility minus maximum disutility if he buys like everybody else good 2 and gains the utility of following the tradition when switching to good 1.

While the equilibria with $q < 1/2$ are formally possible they do not make economic sense as they imply that a utility of tradition is attached to a good which is scarcely or not at all consumed. Whichever interpretation of τ is taken it requires substantial consumption of the traditional good in order to make sense, especially in autarky. It is also noteworthy that the welfare maximizing autarky equilibrium of a conformist society is given at $q^* = 1$.

4.2 Individualistic Country

Recalling that now we have $\delta > \nu$ it is useful to rewrite (9) as

$$q = \frac{1}{2} + \frac{\tau}{2(\delta - \nu)} \tag{9'}$$

Clearly in a traditional individualistic country no diversified equilibrium exists since $0 < q < 1$ is not compatible with $\tau > \delta - \nu$. On the other hand, q = 1 is an equilibrium as the following condition is satisfied:

$$\tau + \nu - \delta > 0. \tag{12}$$

Condition (12) again compares the utility of the consumer with the greatest preference for good 2 when consuming good 1 and consuming good 2.

Turning to a non-traditional individualistic country it is obvious from ( ) that the unique equilibrium is diversified with $1/2 < q < 1$. It is noteworthy, however, that such an equilibrium is not welfare-maximizing as there is too much diversification. Recall that the welfare-maximizing q for a super-individualistic society is given by

$$q^* = \frac{1}{2} + \frac{\tau}{2(\delta - 2\nu)}, \tag{7}$$

whereas the equilibrium value of q for a non-traditional individualistic society equals

$$q^e = \frac{1}{2} + \frac{\tau}{2(\delta - \nu)}, \tag{9'}$$

and clearly $q^* > q^e$. This is particularly obvious for $\delta - 2\nu < \tau < \delta - \nu$. For these values of τ we get $q^* = 1$ and $q^e < 1$.

The reason for the inefficiency of the diversified equilibrium is the positive network externality. An individual consumer considers only his own utility when deciding which good to buy, whereas a social planner would also take into account how all other consumers are affected.

We summarize our findings in the following

Proposition 1:

(i) In a traditional society ($\tau > |\nu - \delta|$) the equilibrium is unique and homogenous with $q = 1$.

(ii) In a conformist society ($\nu > \delta$) there exists always a homogenous equilibrium with $q = 1$.

(iii) In a non-traditional society ($\tau < |\nu - \delta|$) there exists always a diversified equilibrium with $0 < q < 1$, but the market share of the traditional good is smaller than would be welfare maximizing.

(iv) In a non-traditional individualistic society ($\tau < |\nu - \delta|$, $\delta > \nu$) the unique equilibrium is diversified.

Table 1: Autarky equilibrium and type of society

	Traditional: $\tau > \lvert\nu - \delta\rvert$	Non – traditional: $\tau < \lvert\nu - \delta\rvert$
Conformist: $\nu > \delta$	$q^e = 1$, $q^* = 1$	$q_t = 1$, $0 < q_d < 1$, $q_n = 0$, $q^* = 1$
Individualistic: $\nu < \delta < 2\nu$	$q^e = 1$, $q^* = 1$	$0 < q^e < 1$, $q^* = 1$
Super-individualistic: $\delta > 2\nu$	$q^e = 1$, $q^* = 1$	$0 < q^e < q^* < 1$

5. Equilibrium of a (Small) Open Economy

5.1 Trade without comparative advantage

Next we assume that the country with good 1 as the national identity creating good, for simplicity called the domestic country, enters free trade with a foreign country whose cultural good is good 2. We assume that the foreign country produces only the consumption good and good 2 and continues to do so also after trade with the domestic country is possible. One possible explanation is that the domestic country is small in the sense that it does not affect the consumption habits of the foreign country. As we shall see below, there are other potential causes for such inertia of habits, like a very large importance attached to tradition or an inward looking attitude. In order to focus on these aspects we assume that the two countries are identical with respect to the size of population and production functions.

As far as the consumers of the domestic country are concerned we assume that because of establishing trade relations with the foreign country the domestic consumers of good 2 may enjoy a positive network effect due to the consumption of this good by consumers of the foreign country. The assumption made in the previous section that in autarky no such network effects exist at all between domestic and foreign consumers may look at bit extreme in view of modern communication systems, but all we need is a significant increase of such an effect after the state of autarky is ended, and this appears to be plausible even if the home country was not completely isolated before trade started. To save notation we retain the assumption that the external network effect is zero in autarky. It seems reasonable, however, to assume that this effect remains smaller even with free trade than if it were caused by domestic consumers. We measure the degree of "cultural openness of a society by the parameter ω, with $0 \leq \omega \leq 1$, i.e. we rule out xenophobia in the sense that the utility of a good is reduced if there are many foreign consumers. The total (constant) marginal network effect due to foreign consumers is therefore $\omega\nu$. Consequently, the utility of a domestic consumer located at x can now be written as

$$u(x; z, x_1, x_2) = z + \begin{cases} \tau + \nu q - \delta x \ \ if \ \ x_1 = 1 \\ \nu(1-q) + \omega\nu - \delta(1-x) \ \ if \ \ x_2 = 1 \end{cases} \tag{13}$$

The only difference to (4) is the addition of $\omega\nu$ if good 2 is consumed (the market share of good 2 in the foreign country is assumed to be 1).

As in the case of autarky we start with the social optimum and discuss afterwards the equilibrium of different types of domestic societies.

5.1.1 Social optimum

A social planner would determine the share of domestic consumption of good 1 in order to maximize

$$\max W(q) = z + \tau q + \nu\left[q^2 + \omega - \omega q + (1-q)^2\right] - \delta\left(\int_0^q y dy + \int_0^{1-q} y dy\right) - 1 \tag{14}$$

The main difference to the welfare function in autarky is the addition of the term $\omega\nu(1-q)$, which is the additional utility consumers of good 2 enjoy because all foreign consumers also buy this good.

The first derivative of W equals

$$dW/dq = \tau + q[4\nu - 2\delta] - \nu[2 + \omega] + \delta. \tag{15}$$

Clearly, for $2\nu > \delta$ the welfare function is convex in q, hence its maximum is a corner solution either with $q = 0$ or $q = 1$. While in autarky it is clear that $W(1) > W(0)$ as long as $\tau > 0$ in an open economy it can be the other way round. Domestic consumers of good 2 don't enjoy the benefit of "doing the right thing", i.e. they lose τ, but they enjoy the network benefit of belonging to a large group of domestic and foreign consumers of good 2. More precisely, we get

$$W(1) \geq W(0) \Leftrightarrow \tau \geq \omega\nu. \tag{16}$$

We call a society with $\tau > \omega\nu$ inward looking, and outward looking if $\tau < \omega\nu$. An interior solution requires $\delta > 2\nu$, i.e. a very individualistic society. Setting dW/dq equal to zero yields

$$q^{**} = \frac{1}{2} + \frac{\tau - \omega\nu}{2(\delta - 2\nu)}. \tag{17}$$

This is compatible with $0 < q^{**} < 1$ only if $|\tau - \omega\nu| < \delta - 2\nu$. Comparing this to (7) shows that the condition on τ for an interior solution of q is weaker in an open economy than in autarky.

Next we characterize equilibria of various types of an open economy. A comparison with the equilibria of corresponding economies in autarky follows in the next section.

5.1.2 Open conformist country

Recall that our definition of a conformist country is given by the condition $\nu > \delta$. As has been shown in the previous section the welfare maximum is reached for an inward looking economy ($\tau > \omega\nu$) at $q = 1$ – as in autarky – or at $q = 0$ for an outward looking economy ($\tau < \omega\nu$). We look at first at sufficient conditions for a homogenous equilibrium. Starting with the first potential equilibrium it is easy to see that $q = 1$ is an equilibrium iff

$$\tau + \nu - \delta \geq \omega\nu \text{ or} \tag{18}$$

$$\tau \geq \delta - \nu(1 - \omega). \tag{18'}$$

The left hand side of (18) is the utility of the consumer located at the opposite side of the interval if he – like all other domestic consumers – buys good 1, the right hand side is his utility if he is the only one to switch to good 2. Note that $\nu > \delta$ is not sufficient for (18) to hold, in contrast to a state of autarky.

Similarly, the condition for $q = 0$ to be an equilibrium is

$$\nu(1 + \omega) - \delta \geq \tau. \tag{19}$$

It is straightforward to show that (18) and (19) can hold simultaneously, i.e. the equilibrium need not be unique. To see this consider the two inequalities

$$\nu(1 + \omega) - \delta \geq \tau, \tag{19}$$

$$\delta - \nu(1 - \omega) \leq \tau. \tag{18''}$$

Subtracting (18”) from (19) yields

$$2\nu - 2\delta \geq 0, \tag{20}$$

which holds for a conformist society.

Finally we show that in a free trade equilibrium a conformist economy may be diversified.

The indifference condition in the domestic country equals

$$\tau + (\nu - \delta)q = (\nu - \delta)(1 - q) + \omega\nu, \tag{21}$$

implying

$$q = \frac{1}{2} - \frac{\tau - \omega\nu}{2(\nu - \delta)}, \tag{22}$$

And we get $q = 1$ if

$$\tau \geq \nu(1 + \omega) - \delta. \tag{23}$$

We call an economy satisfying this condition *super-traditional*. Note that a super-traditional country cannot be outward looking, i.e. (23) can only hold if $\tau > \omega\nu$.

From the equilibrium conditions it follows that a conformist open economy may have the following equilibria:

Proposition 2:

(i) A super-traditional open economy ($\tau \geq \nu(1 + \omega) - \delta$) has a unique equilibrium $q_t = 1$. In this case the welfare maximizing market share of good 1 is also equal to 1 ($q^{**} = 1$).

(ii) A traditional open economy ($\nu(1 + \omega) - \delta > \tau > \delta - \nu(1 - \omega)$) has 3 equilibria:

a) $q_t = 1$

b) $q_o = 0$

c) $q_d = \frac{1}{2} - \frac{\tau - \omega\nu}{2(\nu - \delta)} \geq \frac{1}{2}$ as $\tau \leq \omega\nu$

(iii) A non-traditional conformist open economy ($\delta - \nu(1 - \omega) \geq \tau$) has a unique equilibrium $q_o = 0$, which is also welfare maximizing.

(iv) In a conformist economy welfare is maximized at $q = 1$ for an inward looking economy and at $q = 0$ for an outward looking economy.

Table 2: Free trade equilibria of conformist economies ($\delta < \nu$)

	Inward looking: $\tau > \omega\nu$	Outward looking: $\tau < \omega\nu$
Super-traditional: $\tau \geq \nu(1+\omega) - \delta$	$q^e = 1$, $q^{**} = 1$	–
Potentially diversified: $\nu(1+\omega) - \delta > \tau > \delta - \nu(1-\omega)$	$q_t = 1$, $q_o = 0$, $0 < q_d < 1/2$ $q^{**} = 1$.	$q_t = 1$, $q_o = 0$, $1/2 < q_d < 1$ $q^{**} = 0$.
Non-traditional: $\delta - \nu(1-\omega) \geq \tau$	–	$q^e = 0$, $q^{**} = 0$

As in autarky the equilibrium need not be unique, though the equilibrium in an inward looking traditional open economy with $q < 1$ is not very plausible, especially if $q = 0$. In an outward looking traditional economy an inefficiency arises if a positive quantity of good 1 is consumed.

5.1.3 Open individualistic country

5.1.3.1 Weakly individualistic country ($\delta - \nu > 0 > \delta - 2\nu$)

It is helpful to distinguish between a weakly individualistic country $(\delta - \nu > 0 > \delta - 2\nu)$ and a super-individualistic country $(\delta > 2\nu)$ as in the former the welfare maximizing q is 1 for an inward looking country and 0 for an outward looking country, as was observed for a conformist country.

An equilibrium with $q^e = 1$ requires $\tau > \delta - (1 - \omega)\nu$, and we call an open economy satisfying this condition *super-traditional individualistic*. Note that such an economy must be inward looking.

An equilibrium with $q^e = 0$ requires $(1 + \omega)\nu - \delta > \tau$. Note that this condition cannot be satisfied if the economy is inward looking or strongly individualistic.

A diversified equilibrium requires $|\tau - \omega\nu| < \delta - \nu$. At the same time this condition rules out the existence of an equilibrium at $q = 1$. For an outward looking country ($\omega\nu > \tau$) this condition implies that also the homogenous (and welfare maximizing) equilibrium $q^e = 0$ exists as $\delta - (1 - \omega)\nu > -\delta + (1 + \omega)\nu$.

We summarize our findings for a weakly individualistic economy in the following table.

Table 3: Free trade equilibria for a weakly individualistic country ($2\nu > \delta > \nu$)

	Inward looking: $\tau > \omega\nu$	Outward looking: $\tau < \omega\nu$
Super-traditional: $\tau > \delta - (1 - \omega)\nu$	$q^e = 1$, $q^{**} = 1$	–
Diversified: $\lvert\tau - \omega\nu\rvert < \delta - \nu$.	$1/2 < q_d < 1$, $q^{**} = 1$	$q_0 = 0$, $0 < q_d < 1/2$, $q^{**} = 0$
Non-traditional: $\tau < (1 + \omega)\nu - \delta$	–	$q_0 = 0$, $q^{**} = 0$

5.1.3.2 Strongly individualistic country ($\delta > 2\nu$)

From the above discussion it is obvious that there are two main differences between a strongly and a weakly individualistic country:

a) $q = 0$ cannot be an equilibrium in a strongly individualistic country.

b) The welfare maximizing q in a strongly individualistic country is 1 (0) if $|\tau - \omega\nu| > \delta - 2\nu$ and $\tau > \omega\nu$ ($\tau < \omega\nu$), and $0 < q^{**} < 1$ if $|\tau - \omega\nu| < \delta - 2\nu$.

Consequently, we can summarize the free trade equilibria of a strongly individualistic country in the following table.

Table 4: Free trade equilibria for a strongly individualistic country ($\delta > 2\nu$)

	Inward looking: $\tau > \omega\nu$	Outward looking: $\tau < \omega\nu$
Super-traditional: $\tau > \delta - (1 - \omega)\nu$	$q^e = 1$, $q^{**} = 1$	–
$\delta - 2\nu < \lvert\tau - \omega\nu\rvert < \delta - \nu$.	$1/2 < q_d < 1$, $q^{**} = 1$	$0 < q_d < 1/2$, $q^{**} = 0$
$\delta - 2\nu > \lvert\tau - \omega\nu\rvert$	$q_d < q^{**} < 1$	$q^{**} < q_d < 1/2$

Before turning to welfare comparisons we take note of some interesting welfare properties of free trade equilibria if the domestic country is individualistic.

Proposition 3:

If the domestic country is inward looking and not super-traditional then the free trade equilibria are not welfare maximizing because the consumption of good 1 is too small.

If the domestic country is outward looking and super-traditional then the free trade equilibria are not welfare maximizing because the consumption of good 1 is too large.

Proof: Consult tables 3 and 4.

It is noteworthy that the inefficiency of a free trade equilibrium, which by itself does not come as a surprise considering possible inefficiencies also in autarky, may be caused by over– rather than underproduction of the domestic cultural good. It is at least conceivable that the disappearance of cultural goods after free trade is allowed is welfare increasing, even without comparative advantage, though this could not happen with a traditional economy. A more detailed discussion of the welfare effects of a move from autarky to free trade follows in the next section.

5.2 Welfare Comparisons between autarky and free trade equilibria

As can be seen from tables 2 – 4 free trade equilibria are not welfare maximizing if they exhibit diversification, i.e. if $0 < q_f < 1$. Since we have set out to investigate whether a free trade equilibrium can be worse than an autarky equilibrium we look first at a country with $q_a = 1$ in autarky. As can be seen from table 1 this holds for a traditional country, i.e. $\tau > |\nu - \delta|$, and we turn to this case first.

5.2.1 Traditional Economy

In the first step we clarify which of the free trade equilibria shown in tables 2 – 4 are feasible for a country which is classified as "traditional" in autarky. This is done in the following observations.

Observation 1:

(i) A super-traditional open economy must be traditional in autarky, i.e.

$$\tau > \max\{\nu(1+\omega)-\delta, \delta-\nu(1-\omega)\} \Rightarrow \tau > |\nu-\delta|$$

(ii) The reverse implication does not hold, i.e. an economy which is traditional in autarky may become non-traditional in a free trade regime.

(iii) An economy which is traditional in autarky may become potentially diversifiable in a free trade regime, i.e. $\tau > |\nu - \delta|$ is compatible with $|\tau - \omega\nu| < |\nu - \delta|$.

(iv) An economy which is traditional in autarky and strongly individualistic cannot become non-traditional in a free trade regime, i.e. $\tau > \delta - \nu$ is not compatible with $\delta - 2\nu + \omega\nu > \tau$.

The proofs are straightforward and therefore omitted.

Observation 1 implies that for an economy which is traditional in autarky all free trade equlibria shown in tables 2 – 4 are possible except for the two "non-traditional" ones in row 3 of table 4. A comparison between welfare in autarky and in a free trade regime is given in the following proposition.

Proposition 4: Suppose the domestic economy is traditional in autarky and trades with another country which consumes only good 2 as its cultural good in the free trade regime.

1) If the domestic country is inward looking then its welfare in autarky is

(i) at least as large as in the free trade equilibrium;

(ii) strictly greater than in the free trade equilibrium if the domestic country is individualistic;

2) If the domestic country is outward looking and not super-individualistic then its highest welfare attainable in autarky is smaller than in the free trade equilibrium with the highest welfare level.

3) If the domestic country is outward looking and super-individualistic then its welfare in autarky is smaller than in the free trade equilibrium

Proof: Part 1) can be seen immediately from the left columns in tables 2 – 3 and Observation 1(iv). Part 2) can be seen from second row, right column in tables 2 – 3. Part 3) follows from the right column in table 4 and the fact that $W'(1) < 0$ (see appendix).

5.2.2 Non-traditional economy

A welfare comparison between autarky and free trade is complicated by the fact that the autarky equilibrium is either not unique (conformist economy) or diversified with respect to the consumption of the cultural good. Before turning to the results note that Observation 1(i) implies that an economy which is non-traditional in autarky cannot be super traditional in the free trade regime, hence the equilibria shown in the first rows of tables 2 – 4 are not feasible. For a welfare comparison between autarky and the feasible free trade equilibria the following proposition summarizes the main findings.

Proposition 5: Suppose the domestic economy is non-traditional in autarky and trades with another country which consumes only good 2 as its cultural good in the free trade regime.

1) If the domestic country is inward looking and conformist then its highest welfare level attainable in autarky is at least as large as in any free trade equilibrium.

2) If the domestic country is inward looking, individualistic and $\delta - 2\nu < |\tau - \omega\nu| < \delta - \nu$ then its welfare in autarky is strictly greater than in the free trade equilibrium. The converse holds if $\delta - 2\nu > |\tau - \omega\nu|$.

3) If the domestic country is outward looking then its highest welfare level attainable in autarky is not greater than the highest attainable welfare level in a free trade equilibrium.

Proof: Part 1) can be seen from table 1, row 1 column 2, i.e. $q = 1$ is an equilibrium for anon-traditional conformist economy in autarky, and table 2, row 2 column 1 showing that in the free trade equilibrium welfare is maximized at $q = 1$. The proofs of part 2 and part 3 a slightly less straightforward and given in the appendix.

5.3 Trade with comparative advantage

One objection against the above result that free trade may be welfare reducing for a country as compared to autarky is the assumed absence of any comparative advantage. In this section we show that comparative or even absolute advantage of the foreign country in the production of its cultural good 2 does not affect this result. In fact, the possibility that the home country can buy good 2 at a price from the foreign country that is lower than its own costs of production in autarky may reduce welfare even further.

Since we are mainly concerned with conditions under which free trade yields lower welfare for the home country than autarky we focus on an inward looking economy, i.e. $\tau > \omega\nu$. We assume that the labour input coefficient k_2 is smaller in the foreign country than in the domestic country, whereas a and k_1 are the same in both countries. Consequently, we get the following prices for goods 1 and 2 in the free trade regime

$$p_2^f = k_2^f < k_1 = p_1 \tag{24}$$

The utility function of a domestic consumer located in the unit interval at a distance x from good 1 equals

$$u(x; z, x_1, x_2) = \begin{cases} \dfrac{1-p_1}{a} + \tau + \nu q - \delta x \;\; if \;\; x_1 = 1 \\ \dfrac{1-p_2}{a} + \nu(1-q) + \omega\nu - \delta(1-x) \;\; if \;\; x_2 = 1 \end{cases} \tag{25}$$

The main difference between (9) and (25) is that the consumption of good z is no longer exogenous but depends on the choice of the cultural good. If the cheaper good 2 is consumed more income is left for z. Accordingly, the social welfare function (14) is changed to

$$\max W(q) = q\frac{1-p_1}{a} + (1-q)\frac{1-p_2}{a} + \tau q + \nu\left[q^2 + \omega - \omega q + (1-q)^2\right] - \delta\left(\int_0^q y dy + \int_0^{1-q} y dy\right) - 1 \tag{26}$$

Differentiating (26) with respect to q yields

$$dW/dq = \tau - \frac{p_1 - p_2}{a} + q[4\nu - 2\delta] - \nu[2 + \omega] + \delta. \tag{27}$$

Defining

$$\hat{\tau} = \frac{p_1 - p_2}{a} \tag{28}$$

we can rewrite (27) as

$$\frac{dW}{dq} = \hat{\tau} - \omega\nu - 2\nu + \delta + q[4\nu - 2\delta] \tag{27'}$$

which is the same as (15) after replacing τ by $\hat{\tau}$. In particular, for 2ν > δ W is convex in q and welfare in the domestic country is maximized at q = 1 if $\hat{\tau}$ > ων and at q = 0 otherwise. In a super-individualistic country we get an interior solution for the welfare maximum if $|\hat{\tau} - \omega\nu| < \delta - 2\nu$.

Turning next to a free trade equilibrium if there is a comparative advantage we can write the indifference condition for the home country as

$$\tau + \frac{1 - p_1}{a} + (\nu - \delta)q = \frac{1 - p_2}{a} + (\nu - \delta)(1 - q) + \omega\nu, \tag{29}$$

or, after substituting (28)

$$\hat{\tau} + (\nu - \delta)q = (\nu - \delta)(1 - q) + \omega\nu. \tag{29'}$$

This is the same as (21) after replacing τ by $\hat{\tau}$. As a consequence, introducing a comparative advantage does not change substantially the results obtained so far. In particular, Propositions 4.1) and 5.1) and 5.2) continue to hold once the definitions of inward looking, (potentially) diversified etc. have been modified appropriately by substituting $\hat{\tau}$ for τ. It is noteworthy that opening free trade with a country that has a comparative advantage in the production of good 2 may be worse than free trade relations without comparative advantage. Consider a traditional economy which would be super-traditional for τ, but (potentially) diversified for $\hat{\tau}$. In the former case it would remain at the same welfare level as in autarky, in the latter case it would be dragged into the trade equilibrium with smaller welfare than in autarky.

6. Concluding Remarks

We have shown that free trade may indeed lead to a reduction of welfare for a particular country as compared to its autarky equilibrium. The reason is that in the free trade equilibrium too little is consumed of the domestic cultural good, thus supporting the arguments raised against globalization. It has to be mentioned, however, that this is not the only possible outcome of moving from autarky to free trade. There exist also parameter values such that free trade yields higher welfare than autarky. Ironically, this is often the case when the domestic cultural good disappears altogether in the free trade regime. Comparative advantage of the foreign country in the production of its cultural good is neither necessary nor sufficient for these results.

A main simplification we have made in order to keep the analysis tractable is the inertia of the foreign country which is assumed to consume only its domestic cultural good even after trade has been opened. For our purpose, however, this assumption does not affect our results. First of all, our aim was to investigate whether circumstances exist under which free trade is worse than autarky for one country who consumes less of its cultural good when moving from autarky to free trade. For this purpose it is sufficient to come up with a robust example. Secondly, our analysis indicates which factors may lead to such inertia of consumption habits and thus sheds some light on what may go on in reality. One such factor is an extremely strong influence of tradition, as follows from Proposition 4.1). Another, related but not identical factor is the degree to which a country is inward looking. If the foreign country cares very little or not at all about consumption in the home country free trade will not change its consumption of its cultural good. Both factors represent preferences, and not much more can be said about them in this context. There are two additional factors, however, which may be more readily observable. One is size. A big country will not be affected much by the consumption patterns of a small country, even if it is open minded, i.e. ω is large in the framework of our model. The domestic network effect simply dominates the foreign one.

Finally, cost advantages play a role if they are sufficiently large. If there are economies of scale there is another link to (relative) size. So a scenario some of the critics of globalization may have in mind is that a large, traditional, inward looking and efficient country (like the U.S.A.?) will take over the international market for cultural goods, thereby reducing or even destroying the production of cultural goods of smaller and more open minded countries and diminishing their welfare. This would be supported by the present model.

It is not, however, the only scenario compatible with our analysis. It may be a bit euphemistic to describe the disappearance of certain national cultural goods in favour of those of a big, dominant country as joining a greater international community, but it is not all wrong. More importantly, the present model needs to be extended in several ways in order to get a wider picture. One shortcoming is certainly that each consumer buys only one of the cultural goods, and introducing elements of the love of variety approach would make the model more plausible. A related point is the possibility that domestic producers of cultural goods benefit from the experience of foreign producers, as emphasized by Cowen (2002).

Another extension concerns the preferences of consumers. Due to the large number of parameters the analysis is already quite messy, but network effects need not be monotonic, and tradition need not have the same value for all consumers. I suspect that there may still be more general circumstances under which free trade is not superior to autarky, but if this is the case it is desirable to understand these circumstances as clearly as possible in order to be able to find appropriate remedies.

Appendix

1. Proof of Proposition 4.3)

W(q) is concave for a super-individualistic country with $\delta > 2\nu$ as

$$dW/dq = \tau + q[4\nu - 2\delta] - \nu[2 + \omega] + \delta \qquad \text{(A1)}$$

implying

$$W''(q) = 4\nu - 2\delta < 0. \qquad \text{(A2)}$$

Furthermore, for an outward looking country with $\tau < \omega\nu$ we get

$$W'(1) = \tau + 2\nu - \delta - \omega\nu < 0, \qquad \text{(A3)}$$

$$W'(0) = \tau - \omega\nu - 2\nu + \delta < 0, \qquad \text{(A4)}$$

and therefore $W(q)$ reaches its minimum at $q = 1$. Q.E.D.

2. Proof of Proposition 5.2)

Note first that for any q satisfying $0 \leq q < 1$ welfare is strictly smaller in autarky than with free trade because of the addition of $\omega\nu(1 - q)$ in the latter regime.

a) Suppose first $\delta > \nu > \delta/2$. Setting $q = 1$ and $\tau > \omega\nu$ in (A1) shows that $W'(1) > 0$. Since $W(q)$ in this case is convex setting $W'(q) = 0$ yields the q with the smallest welfare level, thus

$$q_{\min} = \frac{1}{2} - \frac{\tau - \omega\nu}{2(2\nu - \delta)} \qquad \text{(A5)}$$

Now W reaches its maximum at $q = 1$. Therefore, W is increasing in q for $q > q_{\min}$. Recall that the autarky equilibrium equals under given assumptions

$$q_a = \frac{1}{2} + \frac{\tau}{2(\delta - \nu)} \qquad \text{(A6)}$$

and the free trade equilibrium is

$$q_f = \frac{1}{2} + \frac{\tau - \omega\nu}{2(\delta - \nu)} \qquad \text{(A7)}$$

and clearly $q_a > q_f > q_{\min}$, which proves the claim.

b) Suppose next $\delta > 2\nu$ and $\delta - 2\nu < |\tau - \omega\nu|$. Then $W(q)$ is concave in q, but $W'(1) > 0$ and $W'(0) > 0$, and the reasoning of part b) still applies.

c) Finally suppose $\delta - 2\nu > |\tau - \omega\nu|$. In that case (A5) would define the value of q at which W reaches its maximum. For all q greater than this value W is decreasing in q, hence $q_a > q_f$ $\Rightarrow W(q_a) < W(q_f)$ Q.E.D.

3. Proof of Proposition 5.3)

As long as $\delta > \nu > \delta/2$ a free trade equilibrium is reached at $q = 0$, which is also welfare maximizing. In a super-individualistic economy the same reasoning as in point c) of the proof of Proposition 5.2) applies. Q.E.D.

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