Here's something you never asked for, didn't know existed, and can't easily obtain: A search model of gift giving

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Abstract

Gift giving is thought to be welfare decreasing. This claim rests on two key assumptions, namely, full information as to the whereabouts of all goods and the ability to reach the stores that contain desired goods costlessly. In this paper, we replace these two assumptions with the more realistic assumptions of uncertainty about the location of goods and search costs. In contrast to existing economic models of gift giving, gifts in our model are given only when they enhance expected welfare, that is, the amount they save the receiver looking for the gift himself is higher than the expected price of unwanted gifts. In fact, we show that the welfare improvement from gift giving is higher than that from any possible trade equilibrium. The more difficult it is for the recipient to obtain the good he desires or the lower the price of this good, the more likely he is to receive it as a gift. Search costs affect not only the decision to give but also the choice of gift. We characterize the relationship between gift giving and the giver's information about the recipient's preferences as well as her information about the gifts available in the economy. We use our model to explain a number of stylized facts about gift giving in modern and foraging societies.

keywords: gift giving, search, welfare, refunds

Journal of Economic Literature classification numbers: A12, D60, D83.

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Gift giving is thought to be welfare decreasing. This claim rests on two key assumptions, namely, full information as to the whereabouts of all goods and the ability to reach the stores that contain desired goods costlessly. In this paper, we replace these two assumptions with the more realistic assumptions of uncertainty about the location of goods and search costs. In contrast to existing economic models of gift giving, gifts in our model are given only when they enhance expected welfare, that is, the amount they save the receiver looking for the gift himself is higher than the expected price of unwanted gifts. In fact, we show that the welfare improvement from gift giving is higher than that from any possible trade equilibrium. The more difficult it is for the recipient to obtain the good he desires or the lower the price of this good, the more likely he is to receive it as a gift. Search costs affect not only the decision to give but also the choice of gift. We characterize the relationship between gift giving and the giver's information about the recipient's preferences as well as her information about the gifts available in the economy. We use our model to explain a number of stylized facts about gift giving in modern and foraging societies.

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1 Introduction

For economists gift giving presents a puzzle: it persists in modern society despite the claim that in-kind gifts are necessarily inefficient and welfare reducing. This claim has

spawned theoretical models attempting to account for it (see Camerer, 1988, Carmichael and MacLeod, 1997 and Ruffle, 1999) as well as empirical tests of the magnitude of the welfare loss of gift giving (see Waldfogel, 1993, Solnick and Hemenway, 1996, List and Shogren, 1998, and Ruffle and Tykocinski, 2000, along with a more detailed literature review in section 2).

Yet this claim rests on the assumptions that gift recipients possess full information as to the whereabouts of the goods they desire and that they are able to obtain such goods costlessly. In this paper, we relax these assumptions by adding uncertainty about the existence and location of goods and search costs to resolve this uncertainty. That uncertainty often exists concerning the location and availability of consumer goods is clear. Evidence of the importance of search cost savings in modern gift giving can be heard in common expressions of gratitude upon receipt of a gift: "where did you find it? I didn't know such an item existed," "I've looked all over for it, and couldn't find it," or, "I've wanted this for a long time, but never remember to buy it." In hunterer-gatherer societies, anthropological accounts point to the reduction of search costs as a motive for gift exchange and choice of exchange partners.

In our model (described in section 3), the giver and the receiver visit different stores. These stores sell only one kind of good, say good A or good B. Only the person visiting the store knows for sure the type of good sold by the store. The giver and the receiver each has a unit demand exclusively for good A or good B and zero utility for the other good. Each person knows his own preference and that the other person shares the same preference with probability μ. Each person simultaneously decides whether to purchase a unit of the good sold by his store. The giver, wishing to maximize the pair's expected utility, also decides whether to purchase a unit of her store's good as a gift for the receiver.[1] The giver and the receiver then decide independently whether to pay the search cost to visit the other's store.

Other features of real-world gift giving captured by our model include gift givers' in-

[1]To distinguish between the giver and the receiver, we adopt the convention that the giver is female, and the receiver is male.

complete information about recipients' preferences and the search cost inherent in shopping. We characterize the relationship between each of these features and gift giving. For instance, we show that gift giving increases as the search cost increases. Search costs affect not only the decision to give but also the choice of gift given. In addition, the better informed the giver is about the receiver's preferences, the more likely she is to purchase an expensive gift and the less likely she is to buy a cheap one. In either case, more information about the receiver's preferences increases the likelihood of giving a gift valued by the receiver and avoiding an unwanted gift, thereby increasing the expected welfare yield from gift giving.

More generally, we show in section 4 that gifts in our model are welfare improving over autarky. One may ask if there exists a trade equilibrium that could duplicate the welfare of our gift-giving model. In a trade economy, the giver may buy the gift in the hope of selling it to the receiver at a profit. However, we show that there are some cases in which gift giving yields a welfare gain for the pair, but in a trade equilibrium the inability of the giver to make a profit prevents trade. Consequently, the welfare improvement from gift giving is higher than that from any possible trade equilibrium.

The assumption that the giver maximizes the pair's joint welfare renders our model inappropriate for many gift-giving scenarios. Most notably, gifts given at the beginning of a relationship often involve intentionally and visibly high search costs as a way to communicate caring, thoughtfulness, trustworthiness and a willingness to continue to invest in the relationship. The models of Camerer (1988), Carmichael and MacLeod (1997) and Ruffle (1999) explain well such scenarios. The giver in our model, by contrast, gives a gift only when her search costs for the gift are lower than those of the recipient. The reduction of search costs as a motivation for gift giving is more appropriate in well-established, close relationships in which altruism or paternalism come into play. Even in the absence of altruism or paternalism, the reduction of search costs may still motivate gift giving. For instance, parties who have access to different goods may wish to engage in the kind of gift exchange typical in hunter-gatherer societies. More generally, differential gift-giving opportunities or differential knowledge of the availability and the suitability

of certain goods due to, for instance, travel, unequal access to goods in an economy and greater familiarity or experience with a particular good lead to gift giving in our model.

In modern gift giving, unwanted gifts may be returned for exchange, credit or a refund. Section 5 extends our model to include the possibility that the gift recipient may return for a refund a gift item he already has or one that does not match his preferences. Adding refunds to our model increases the welfare yield from gifts still further.

In section 6 we discuss the empirical support for search cost related reasons for valuing gifts. We also discuss the ability of our model to account for other stylized facts about gift giving such as the giving of cash gifts to children and grandchildren, the custom of bringing gifts home from a trip abroad and the role of gender in gift giving. In addition to modern giving, we propose that the existence of search costs played a role in the adoption of gift giving as a means of exchange, the choice of trading partners, and the types of goods exchanged in the much studied gift-giving customs of hunter-gatherer societies. Moreover, the demise of gift giving in these societies, we and others argue, came about, in part, due to contact with systems involving still lower search costs, namely markets. Section 7 concludes with some final remarks.

2 Gift-Giving Motives in Economics

Once considered a subject studied primarily by sociologists and anthropologists, gift giving has more recently attracted the attention of economists. Economists have attributed a wide range of motives to gift giving. Waldfogel (1993) assumes that gift givers are altruistic (care about the utility of the receivers), while Tremblay and Tremblay (1997) posit paternalistic givers (care about what the receivers consume) to explain why in-kind gifts are usually preferred to cash gifts.

Most of the economics literature on gift giving, however, has been concerned with explaining why gifts are exchanged if they reduce welfare, and estimating the welfare yield of gifts. Camerer (1988) develops a model in which gifts are given in the first stage

of a two-stage investment game. The more inefficient the gift, the more credibly it signals the giver's willingness to invest in the relationship in the second stage. Carmichael and MacLeod (1997) use an evolutionary framework to show how the exchange of inefficient gifts at the beginning of a relationship discourage parasites thereby promoting trust necessary for long-term cooperation.

Ruffle (1999) does not assume that gifts are welfare reducing as his starting point. In his model, the utility from gifts consists of not only the monetary cost and monetary value of the gift but also the emotions associated with the gift as measured by the difference between the gift expected and the gift given. He derives the condition that gift giving improves welfare if the giver's pride and the receiver's surprise from the gift plus the receiver's monetary valuation of the gift exceed the giver's monetary cost.

Apart from emotional and other psychological factors, there appear to be two *economic* sources of welfare-improving gifts. First, gifts may procure a source of insurance for the giver. Parents may give gifts to their children in the hope that the children will care for them in their old age. Posner (1980) discusses the role of gift giving in hunter-gatherer societies as insurance against hunger. Given the high variance in returns from production and the paucity of alternatives on which to spend excess output, surplus was given to another group with the implied obligation of repayment at some future date. Such insurance-motivated gifts may indeed be welfare improving.

While our model is consistent with the insurance motive for gifts under certain conditions – in fact, we apply our model to gift giving and food-sharing rules in hunter-gatherer societies – we focus on a second source of welfare-improving gifts, namely, the giver's ability to find a suitable match between gift good and recipient. For this to occur, the giver must know something about the receiver's preferences and, equally importantly, she must know more about some aspect of the gift good than the receiver. A receiver cannot always easily or cheaply obtain the good he desires, or may not even know it exists. (Our title captures these two possibilities.) The giver who possesses superior information about such a good, i.e. lower search costs, gives it as a gift. The good's features, availability, location and price are all potential sources of the giver's superior knowledge of the gift good. The

giver may, when traveling abroad, for instance, come across a good not easily found or at a lower price than available to the recipient. The giver may also possess superior information about the gift good due to her own experience with or own consumption of the good. Indeed, the following excerpt offers a colorful example.

> "History records that during the reign of Queen Elizabeth the custom of presenting New Year's gifts was carried to great extremes. Gifts of extravagant value were presented to the Queen, and the people made many gifts among themselves ... the least valuable of the gifts which the Queen received was a pair of black silk knit stockings. Such stockings were rare, indeed. Until that time the Queen had worn cloth hose. But the gift so delighted her that she vowed never to wear cloth hose again. Nor did she!" (Eichler, 1924, p. 281)

In a similar vein, there are goods for which the recipient needs to make some investment before he begins to enjoy their consumption, that is, the recipient must learn to consume them. For instance, the giver may know that her parents could make good use of a computer, a palm pilot or a video camera, if only they knew how to operate such hi-tech items. Likewise, the recipient may learn his preferences only by consuming the good. Goods like classical music or fine wines are an acquired taste or, in the words of Stigler and Becker (1977), require a degree of "consumption capital" before the consumer is able to appreciate them. The giver may recognize the recipient has the potential to enjoy such goods if only he was exposed more regularly to them.

What unifies all of these types of gifts is that the content of the gift is a source of value to the receiver. For gift giving motivated by strengthening social ties or for which the act of giving itself is the source of value, the models of Camerer (1988), Carmichael and MacLeod (1997), and Ruffle (1999) are better suited. By contrast, our model does particularly well at explaining valuable or useful gifts. We elaborate on additional examples throughout the paper and especially in section 6 on stylized facts.

3 Model

3.1 Setup

Suppose there are two stores and two types of goods, A and B. Each store sells one good only, the price of which is p. Suppose that *a priori* each store is as likely to sell good A as it is good B (0.5 probability of selling either good). However, together the stores have a known probability $\alpha \in [0, 1]$ of selling the same good. There are two people whom we shall refer to as G and R. The giver, G, decides whether to purchase a gift for the receiver, R. Each person is risk neutral and has utility v for the consumption of one unit of his preferred good (exclusively either good A or good B), and zero utility for the other good; the purchase of a unit of either good entails disutility equal to the good's price p. Each person knows his own preference and knows that the other has the same preference as his own with probability $\mu \in [0, 1]$.

Each person simultaneously visits a different store from the other person (Table 1 displays the joint probabilities that G and R will a particular pair of goods in the first stores they visit). While at the store, each person decides independently whether to purchase for himself a unit of the good that his store sells. In addition, G, whose objective it is to maximize the sum of G and R's net expected utility, decides whether to purchase a unit of her store's good as a gift for R.[2] Next, not observing the other's purchase decision, each person decides whether to visit the other store at a cost of c. At the second store, both people again face the same decision, whether to buy the store's good for themselves; G also decides whether to buy a unit of the good as a gift for R.

[2]The giver and receiver in our model employ the strategies that maximize the sum of the pair's net expected utility. This fits gift giving motivated by altruism or paternalism. For gift giving in foraging societies, we prefer an alternative interpretation. The returns from hunting, being as much a matter of timing as skill, are characterized by randomness and high variance. The kill of animals larger than can be consumed by a single family, primitive meat storage technologies and the necessity of all to eat regularly lead to the adoption of group-oriented consumption rules, such as the simple one described by our model. By contrast, such consumption "mechanisms are unappealing when resource accrual is a matter of effort rather than of luck" (Cosmides and Tooby, 1994, p. 331).

G \ R	A	B
A	$\frac{\alpha}{2}$	$\frac{1-\alpha}{2}$
B	$\frac{1-\alpha}{2}$	$\frac{\alpha}{2}$

Table 1: The joint probabilities that G and R will encounter a particular pair of goods in the first stores they visit.

Note that with the widespread use of cellular phones, one may wonder why the giver doesn't simply call the receiver from the store and ask whether he would like the good and, if so, purchase it for him, or at least inform him of its location. Besides spoiling the surprise element of gift giving, cellular phones are not universal, the potential gift recipient may be unavailable, and the calls are not costless and sometimes not even feasible, as may be the case for gift shopping abroad. Moreover, many objects cannot be adequately described over the telephone. For these reasons we rule out communication of one's preferences in our model, as indicated by the first phrase of our title, "something you never asked for."

3.2 Equilibrium Analysis

Consider the two strategies that R has available to satisfy his unit demand for his desired good. No matter his strategy, R definitely buys his desired good if the first store he visits sells the good. If it doesn't, his first strategy dictates that he does not continue to search and thus does not visit the second store. His second strategy indicates that he continues to the second store.

If R follows the first strategy, then G has four possible pure strategies: she may never buy a gift (`never1`); she may always buy a gift independent of the store she visits (`always`); she may buy a gift if and only if she visits a store that sells her own desired good (`if own`); or she may buy a gift if and only if she visits a store that sells the other good, the one for which she has zero utility, in the hope that it is valued by R (`if other`).

Taking each of these strategies in turn, consider the sum of G and R's expected utility, that is, R's expected utility from the consumption of his preferred good minus the expected

cost incurred by G and R from the purchase of goods A and B.[3] We call this the pair's net expected utility. Without loss of generality, we assume R's desired good to be good A throughout the analysis. With probability 1/2, the store that R visits sells good A and he purchases a unit for himself in which case his expected utility is $\frac{1}{2}(v-p)$. If G's strategy is never to buy R a gift (`never1`), then this is also the pair's net expected utility, that is,

$$EU(\texttt{never1}) = \frac{1}{2}(\texttt{v} - \texttt{p}). \tag{1}$$

If G follows the strategy always buy R a gift (`always`), then G and R's total expected cost from purchases equals $\frac{3}{2}p$, since G always buys R a gift and R buys the good for himself half of the time (whenever he visits an A store first). Only when both G and R's stores sell good B does R not receive his desired good. This occurs with probability $\alpha/2$ implying that R's expected utility from the consumption of his desired good is $v(1-\alpha/2)$. Summing these two expressions yields,

$$EU(\texttt{always}) = \texttt{v}(1 - \alpha/2) - \frac{3}{2}\texttt{p}. \tag{2}$$

If G buys R a gift only when she visits a store that sells her own desired good (`if own`), then p is the expected cost in attempting to satisfy R's unit demand: half of the time G's store sells her own desired good ($\frac{1}{2}p$) and half of the time R's store sells good A ($\frac{1}{2}p$). The recipient values G's gift if and only if G and R have the same preferences (μ) *and* G visits an A store while R visits a B store ($\frac{1-\alpha}{2}$). With probability 1/2, R purchases his desired good for himself ($\frac{1}{2}v$). Taking these expressions together, we obtain the pair's net expected utility from this strategy:

$$EU(\texttt{if own}) = \frac{1}{2}\texttt{v}(1 + \mu(1 - \alpha)) - \texttt{p}. \tag{3}$$

An analogous logic leads us to the expected utility from the strategy `if other` in which G buys R a gift if and only if she visits a store that doesn't sell her preferred good.

$$EU(\texttt{if other}) = \texttt{v}(1 - \alpha/2 - \mu/2 + \alpha\mu/2) - \texttt{p}. \tag{4}$$

[3]We do not include G's expected utility from consuming her preferred good since it is irrelevant to our analysis.

Note that the three strategies that involve the purchase of a gift (`always`, `if own`, `if other`) imply that the gift is bought in the *first* store that G visits. Given that there are only two stores, G will never purchase a gift from the second store since she knows that R has already been there and would have purchased from that store if it sells R's desired good.

Let us now consider R's second available strategy, that is, to continue to the second store if the first store he visits does not sell his desired good. If this is R's strategy, G would never buy a gift good for R because she knows that R will come to her store (`never2`).[4] The expected utility of R from this strategy (which equals the pair's net expected utility since G buys no gift) equals $1/2(v-p)$ in the case that R's first store sells good A, and $1/2(1-\alpha)(v-p)-c/2$ if it does not. Simplifying, we obtain:

$$EU(\texttt{never2}) = (\texttt{v}-\texttt{p})(1-\alpha/2)-\texttt{c}/2. \tag{5}$$

By comparing the expected utilities of each of the strategies, we can solve for the conditions under which each one is the equilibrium strategy.

1. `always` *is the equilibrium strategy if and only if* $v(1-\alpha)>2p$, $v(1-\alpha)(1-\mu)>p$, $\mu v(1-\alpha)>p$ *and* $c>p(1+\alpha)$.

The last condition reveals that `always` can never be an equilibrium strategy if $p>c$. This is so because either G will allow R to buy the good for himself (`never2`) when μ is close to one half, or she will restrict herself to buying a gift when she believes it to be suitable for R, that is, when μ is close to 1 (`if own`) or close to 0 (`if other`).

The intuition underlying the `always` equilibrium can be most easily seen for the case of perfectly negatively correlated stores ($\alpha=0$). In this case, if the price of buying a gift

[4]In a modified setup not considered herein there may exist a third possible strategy for R which we may think of as `never0`. The recipient may choose never to buy the good even if his store sells the good he desires. Instead of assuming that the two stores sell the same good with probability α, suppose that there is a high probability, say 0.95, that G's store sells good A and a low probability, say 0.01, that R's store sells good A. For the appropriate parameters, even if R's store sells good A, he will not buy the good for himself since he expects to receive it from G.

is less than R's search cost, c, then G will always buy R a gift unless she is almost certain of R's type in which case she restricts herself to buying a gift only when she is at the store that sells R's preferred good. Put differently, as the price of buying a gift decreases, G is more likely always to buy R a gift since it is cheap to do so compared to R's cost of buying the good himself.

When visiting a foreign country and custom dictates an exchange of gifts between host and guest who may not know each other's preferences well, an inexpensive gift from one's home country that is not readily available in the foreign country is typical. Scott Seligman's popular guidebook for Western business travelers to China captures this sentiment nicely. For Americans visiting China, he recommends the following gifts for hosts, business contacts and friends: "Many Americans find that folk and pop music go over extremely well. Foreign liquor, cigarettes, and coffee are also highly appreciated, as are T-shirts with English words on them – it hardly matters what they say." (p. 120) This example captures the following, roughly stated features of our model which lead to purchasing a gift always: a relatively inexpensive gift (low p), items not readily available in China (high c for the recipient), and unknown preferences of the recipient (μ close to $1/2$).[5]

On the other hand, if G has better information about R's preferences, then she may restrict her purchase of a gift to a store that contains the good she believes R prefers. Namely,

2. the equilibrium strategy is `if own` *if and only if* $p > v(1-\alpha)(1-\mu)$, $\mu v(1-\alpha) > p$, $\mu > 1/2$ *and* $c > v(1-\alpha)(1-\mu) + \alpha p$.

3. the equilibrium strategy is `if other` *if and only if* $p > \mu v(1-\alpha)$, $v(1-\alpha)(1-\mu) > p$, $\mu < 1/2$ *and* $c > \mu v(1-\alpha) + \alpha p$.

It is common to bring home gifts from a trip abroad. Having become somewhat of an

[5]The following scenario illustrates another appropriate use of the `always` strategy. It is July and fresh corn on the cob has just come in season. You are on your way to visit a friend when you pass a roadside stand with fresh cobs on sale, 12 for $2. You don't remember if your friend likes corn on the cob, but since you are right there and it's only $2, you pick up a dozen corn for your friend.

obligatory custom, many gifts brought home from abroad are no doubt welfare reducing. For instance, a gift of perfume, a souvenir keychain or exotic chocolates to the office secretary or a colleague at work whose preferences are not well may well be given out of a sense of obligation, a desire not to disappoint (Ruffle, 1999) or to signal thoughtfulness or caring (Camerer, 1988). On the other hand, the gifts given to closer friends or family members whose preferences are well known may be more tailored to their tastes and selected precisely because of the difficulty in procuring such desired goods at home. For instance, while visiting India you may bring back a doll for a friend whom you know collects dolls because you know that his cost of locating such a doll is prohibitive (`if own` or `if other` depending on your own preferences).

4. `never1` *is the equilibrium if and only if* $2p > v(1-\alpha)$, $p > \mu v(1-\alpha)$, $p > v(1-\alpha)(1-\mu)$ *and* $c > v(1-\alpha) - p(1-\alpha)$.

If the giver is uncertain whether the recipient really likes dolls, and the particular handmade doll from India is expensive, then the giver does not buy it (`never1`). If one does not have to travel to India to find such a doll, but can readily find it at certain local gift shops (low c and α close to 1), then, uncertain about the receiver's preferences, the giver concludes that if the recipient wants the doll, he can easily buy it for himself (`never2`).

5. `never2` *is the equilibrium strategy if and only if* $p(1+\alpha)$, $v(1-\alpha) - p(1-\alpha) < c$, $v(1-\alpha)(1-\mu) + \alpha p > c$ *and* $\mu v(1-\alpha) + \alpha p > c$.

To illustrate these different equilibria, we may fix $v = 100$ and $c = v/4 = 25$, choose a particular value of α, and graph the equilibrium regions as a function of p and μ. Figures 1, 2 and 3 do this for $\alpha = 0$ (perfect negative correlation between the stores), $\alpha = 1/2$ (the goods sold by the stores are uncorrelated) and $\alpha = 2/3$ (positive correlation between the goods sold in the two stores), respectively. We chose c sufficiently small so that all five strategies exist in equilibrium. For c sufficiently large, `never2` cannot be an equilibrium strategy; that is, high search costs discourage R from continuing to the second store. To solve for the appropriate c we need to solve simultaneously the conditions under which

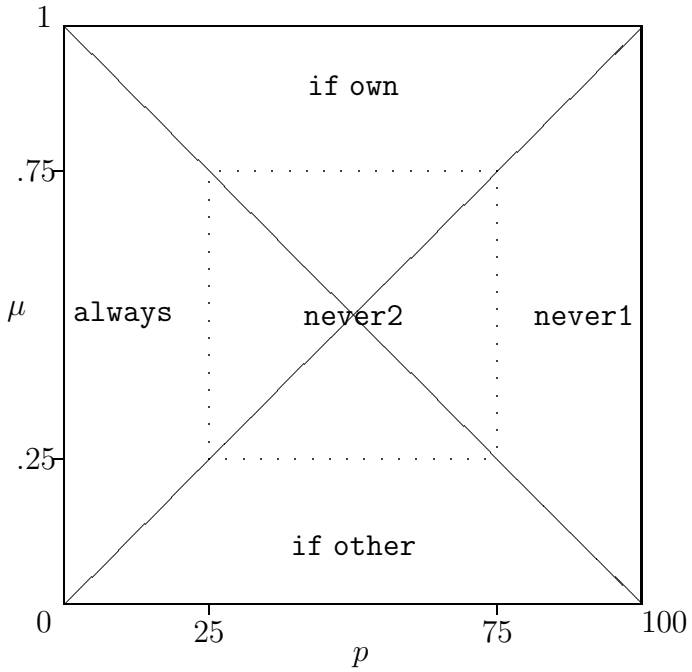

Figure 1: The equilibrium regions of the giver's five strategies as a function of the price of the gift (p) and the probability (μ) that the giver assigns to the receiver having the same preferences as her own. The case of perfect negative correlation between the goods sold by the two stores (α=0), $v = 100$ and $c = 25$ is shown here. The dotted line delineates the boundary between the `never2` region and the other indicated regions.

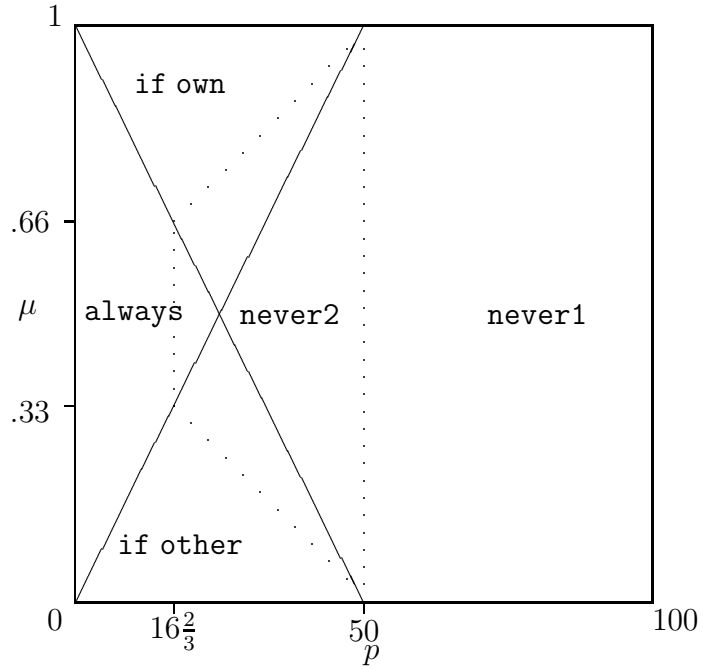

Figure 2: The equilibrium regions of the giver's five strategies when the goods sold by the two stores are uncorrelated (α=1/2), $v = 100$ and $c = 25$.

`always` and `never1` are preferred to `never2`. The solution yields $c = \frac{v(1+\alpha)(1-\alpha)}{2}$. Notice that as α increases, the critical value for c decreases since there is an increasing chance that the good sold in the second store is the same one he passed up in the first store.

More generally, for any value of α, the entire (p, μ) parameter space can be characterized by the following six linear inequalities.

$$\texttt{if own} \geq \texttt{always} \text{ and } \texttt{if other} \leq \texttt{never1} \;\Leftrightarrow\; \mu \geq 1 - \frac{p}{v} \cdot \frac{1}{1-\alpha} \tag{6}$$

$$\texttt{if own} \leq \texttt{never1} \text{ and } \texttt{always} \leq \texttt{if other} \;\Leftrightarrow\; \mu \leq \frac{p}{v} \cdot \frac{1}{1-\alpha} \tag{7}$$

$$\texttt{never1} \geq \texttt{never2} \;\Leftrightarrow\; v - p \leq \frac{c}{1-\alpha} \tag{8}$$

$$\texttt{never2} \geq \texttt{always} \;\Leftrightarrow\; p \geq \frac{c}{1+\alpha} \tag{9}$$

$$\texttt{if own} \geq \texttt{never2} \;\Leftrightarrow\; \mu \geq 1 + \frac{\alpha p - c}{v(1-\alpha)} \tag{10}$$

$$\texttt{if other} \leq \texttt{never2} \;\Leftrightarrow\; \mu \geq \frac{c - \alpha p}{v(1-\alpha)} \tag{11}$$

These equations will be useful in deriving propositions concerning gift giving. Let us

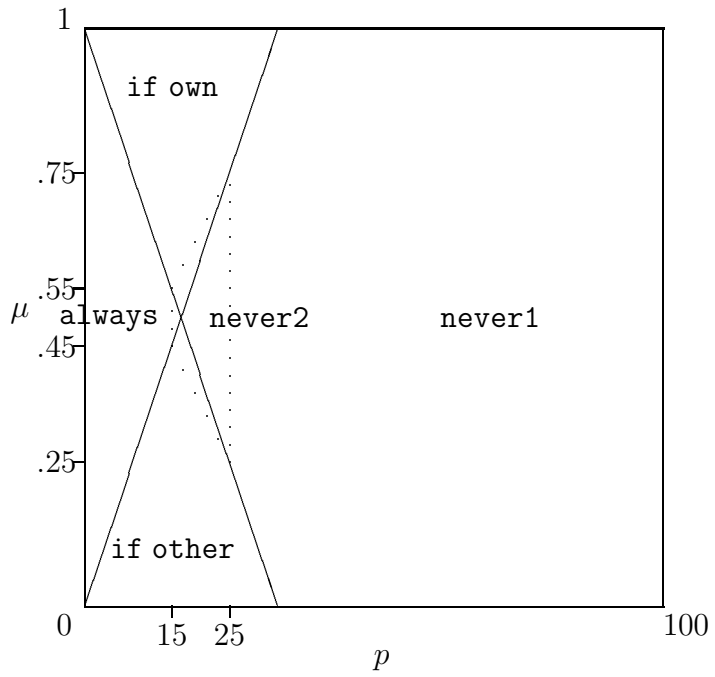

Figure 3: The equilibrium regions of the giver's five strategies where the goods sold by the two stores are positively correlated (e.g. α=2/3), $v = 100$ and $c = 25$.

define gift giving as expected number of gifts given from G to R.

Proposition 1 *As the receiver's cost of search, c, increases, gift giving increases.*

Proof: From equations (1)-(5), we observe that c affects the expected utility of the `never2` strategy only. Thus, all other equilibrium regions are affected by a change in c only to the extent that they border on `never2`. As c decreases, R increasingly prefers to continue to search rather than stop after not finding his preferred good in the first store he visits. Put differently, the `never2` region shrinks as c increases. This means that the three gift-giving equilibrium regions all expand as c increases. Gift giving increases. □

Loosely speaking, lower search costs mean that G need not take a chance on buying a gift for R that he may not like. By continuing to search at little additional cost, R can buy the good for himself.

If a gift-giving occasion or the nature of a relationship dictates that a gift must nonetheless be given, Proposition 1 suggests that the type of gifts changes as a function of c. Food

was once the habitual wedding gift throughout most of the world. Today, however, "food holds a place of lesser importance, because it is ordinarily available to everyone" (Eichler, 1924, p. 278). Since Eichler wrote her 1924 book on the evolution of modern customs, including gift giving, low search costs have rendered food practically extinct as a wedding gift in the Western world. Newlyweds can satisfy all of their grocery needs at the supermarket like everyone else. Similarly, parents tend to replace in-kind gifts with money as their children grow up, one reason being that a child's independence entails decreased search costs for goods.[6]

Proposition 2 *As the utility from consuming a unit of one's desired good, v, increases, gift giving increases.*

Proof: From equation (8) we see that `never1` shrinks with respect to `never2` as v increases. While this involves no change in gift giving, all remaining shifts in equilibrium strategy result in increased gift giving. For instance, Equations (6) and (7) reveal that: i) `never1` decreases with respect to the two gift-giving strategies with which it borders, namely, `if own` and `if other`; ii) `always` increases with respect to `if own` and `if other`. Gift-giving strategies `if own` and `if other` increase at the expense of `never2`, as seen by (10) and (11), respectively. □

Because the gift good is worth more to the receiver, it is more important that he indeed consumes it. Thus, he is more likely to receive it as a gift (Proposition 2) or search for the good himself (and hence `never2` increases relative to `never1`).

Proposition 3 *As the price of the gift, p, decreases, gift giving increases. In fact, for small enough p, to always give a gift becomes the equilibrium.*

Proof: As Figures 1-3 reveal, a sufficient decrease in p causes one of six possible shifts in the equilibrium strategy, all of them resulting in decreased gift giving. The six possible changes in equilibrium strategy are as follows: i) from `never1` to `never2`, ii) from `never2`

[6]Section 6 discusses this stylized fact in greater detail.

to `always`, iii)-iv) from `never1` to `if own` or to `if other`, v)-vi) from `if own` or `if other` to `always`. Except for i) which involves no change in gift giving, all other possible shifts entail an increase in gift giving. □

This is simply the law of demand for gift giving. As the price of a gift decreases (relative to its potential utility), the giver is more likely to buy it, paying less attention to whether the gift may actually suit the recipient preferences. The suggestion above to give to Chinese hosts and business associates T-shirts with English words on them, the content of which "hardly matters" (since v is so high) aptly illustrates this point.

Perhaps the best example of `always` as the equilibrium strategy for sufficiently small p are the egalitarian food-sharing rules characteristic of many hunter-gatherer societies. A hunter who kills a large animal, such as a giraffe, a bear or an antelope, gives away much of the kill to tribe members outside his immediate family. For inadequate storage technologies guarantee the meat's spoilage before he and his family can consume all of it. The excess meat thus costs him next to nothing, while the implied obligation of reciprocity ensures that his gift will be returned at some future date.

Proposition 4 *There exists a price threshold, $\hat{p}$, such that, i) above this threshold more information about the recipient's preferences increases gift giving; more formally, for $p > \hat{p}$, if $\mu > 1/2$, then gift giving increases as μ increases; while if $\mu < 1/2$, then gift giving increases as μ decreases.*
ii) below this price threshold, more information about the recipient's preferences decreases gift giving; more formally, for $p < \hat{p}$, if $\mu > 1/2$, then gift giving decreases as μ increases; while if $\mu < 1/2$, then gift giving decreases as μ decreases.

Proof: To show i) in Proposition 4, let us initially restrict attention to p such that the equilibrium strategy is `never2`. To this end, choose $\hat{p} = \frac{c}{1+\alpha}$. By (8) and (9), `never2` obtains as long as $v - \frac{c}{1-\alpha} > p > \frac{c}{1+\alpha}$ and, by (10), $\mu < 1 + \frac{\alpha p - c}{v(1-\alpha)}$. Given $\mu > 1/2$, as μ increases it crosses the boundary with, and enters, the `if own` equilibrium region, thereby increasing gift giving. Alternatively, given $\mu < 1/2$, as μ decreases it crosses

the boundary with, and enters, the `if other` equilibrium region, thereby increasing gift giving. To complete the proof of i), choose $\hat{p} = v - \frac{c}{1-\alpha}$ so that `never1` is the equilibrium strategy. If $\mu > 1/2$, then increasing μ will eventually lead to the `if own` equilibrium; while if $\mu < 1/2$, then decreasing μ will eventually lead to the `if other` equilibrium. In both of these cases, gift giving increases.

For ii), choose $\hat{p} = \frac{c}{1+\alpha}$. For $p < \hat{p}$ and the appropriate initial beliefs given by (6) and (7), `always` is the equilibrium strategy, as seen by (9). If $\mu > 1/2$, then increasing μ eventually shifts the equilibrium strategy to `if own`. Similarly, if $\mu < 1/2$, then decreasing μ eventually shifts the equilibrium strategy to `if other` Both of these shifts away from `always` decrease gift giving. □

Proposition 4 illustrates the importance of beliefs about the recipient's preferences in the decision to give and the choice of gift. Below a certain price, $\hat{p}$, more information about R's preferences decreases gift giving: the giver may not always buy the (cheap) gift if she knows that it is not appropriate. While a bottle of perfume or liquor, or a box of chocolates may be an appropriate gift for the office secretary or a colleague at work, you may well know that a best friend would not particularly appreciate such a gift, and therefore not buy it. On the other hand, above this threshold price, gift giving increases with more information about R's preferences. You are not likely to take a chance with a relatively expensive gift unless you know the recipient will like it.

Proposition 5 *For sufficiently high search cost c, as α increases, gift giving decreases.*

Proof: If c is sufficiently large such that `never2` cannot be an equilibrium strategy, namely, $c > \frac{v(1+\alpha)(1-\alpha)}{2}$ (as shown above), then for any given v, p and μ, it is always the case that gift giving (weakly) decreases as α increases. Explicitly, from (6), since $\frac{\partial \mu}{\partial \alpha} > 0$, `always` decreases with respect to `if own`, and `if other` decreases with respect to `never1`. Equation (7) reveals that `always` decreases with respect to `if other`, and `if own` shrinks with respect to `never1` since $\frac{\partial \mu}{\partial \alpha} < 0$. □

Intuitively, the likelihood that R already has the gift good increases with α; therefore G is less likely to buy this good for him as a gift.

Proposition 6 *For sufficiently low search cost c, as α increases, gift giving necessarily increases for a certain set of parameters.*

Proof: For this proposition to hold, we require that `never2` exists as an equilibrium strategy; in other words, $c \leq \frac{v(1+\alpha)(1-\alpha)}{2}$. For such a c, fix a $p = \bar{p}$ on the boundary line between `never 2` and `if own`. Consider the μ that meets this condition, $\mu = 1 + \frac{\alpha\bar{p}-c}{v(1-\alpha)}$. Taking the derivative of this expression with respect to α, we obtain $\frac{\partial \mu}{\partial \alpha} = \frac{1}{v}\frac{\bar{p}-c}{(1-\alpha)^2}$. Hence, if $p < c$, then $\frac{\partial \mu}{\partial \alpha} < 0$. Thus, for any α, all points on the boundary between `never2` and `if own` fall strictly within the `if own` region as α increases. Furthermore, due to continuity, for small enough ϵ below this line, there exists a $\delta > 0$ such that if α increases by δ, the points within ϵ of the line move from `never2` to `if own`. □

In words, as α increases, the boundary between `never2` and `if own` swivels in a counter-clockwise direction. For points on this line close enough to the `always` region, μ is falling as α increases. Thus, points that were previously located on the boundary of `never2-if own` or strictly within `never2` for a particular α fall within `if own` as α increases. A similar logic applies to points located within `never2` near the `always` and `if other` boundaries. As α increases, these points fall within the `if other` region.

At first glance, that gift giving can actually increase as the probability that the two stores sell the same goods increases seems counterintuitive. However, when the cost of search and the gift's price are non-trivial and G is neither completely uninformed nor completely certain of R's preferences, then in the case of perfect negatively correlated stores, if R does not find his preferred good at the first store, he knows that he can obtain it with certainty at the second store. Since $v - p > c$, he will proceed to purchase the good at the second store. G gives no gift (`never2`). As the correlation between the stores increases, after not finding his desired good at his own store, R becomes less and less certain that the second store sells it. Given the non-trivial search cost and G's partial knowledge about R's preference, G will save R the search cost by buying him the good as a gift.

The following scenario captures roughly the intuition behind this proposition. The

recipient may have looked around for something similar, didn't find it, and therefore is surprised to receive the item as a gift. Put differently, not having found a particular good, the receiver may conclude that it is not available in the economy, that it doesn't exist. This source of utility and motive for gift giving are heightened, the higher the α.

4 Welfare Implications

Standard economics claims that unless a gift that costs the giver p dollars exactly matches the way in which the recipient would have spent the p dollars, the gift is suboptimal: the cost to the giver exceeds the gift's value to the recipient; gifts are therefore welfare decreasing and a source of inefficiency.[7] Thus, cash is the optimal gift because it allows the recipient to allocate optimally the money, according to his preferences. In fact, Waldfogel (1993) conducts a survey of Christmas gifts received to test this claim. He finds that, on average, recipients value the gifts they receive at 13% less than their estimates costs.[8]

The tack taken by economists has been to show that gifts serve some (economic) function that compensates for the welfare loss associated with gifts. Camerer (1988) develops a signaling model in which gifts, particularly inefficient ones, serve as costly signals of the giver's intent to invest in a future relationship. Inefficient gifts in Carmichael and MacLeod's (1997) evolutionary framework also aid in relationship building where gifts exchanged break down mistrust and permit cooperation.

These models beg the question: why continue to give gifts in well-established relationships in which signaling plays no role and issues of mistrust are not relevant? The answer

[7] Waldfogel (1993) provides a useful diagrammatic exposition of the theoretical welfare loss from gifts.

[8] Solnick and Hemenway (1996) replicate Waldfogel's survey and find that Christmas gifts actually produce a 214% welfare gain. Ruffle and Tykocinski (2000) design a series of experiments to account for the two studies' divergent findings. They show that the difference in the wording of the value question between the two surveys produces drastically different valuations of gifts. List and Shogren (1998) conduct a random n-th price auction in which subjects indicate the prices at which they are willing to sell individual gifts received for Christmas. They find that on average subjects value their gifts at 121% to 135% of the estimated costs.

may lie in the fact that gifts may not be as inefficient as economists typically assume.

The economic model of gift giving assumes that individuals, receivers in particular, possess full information (as to the whereabouts of all desired goods) and that they are able to obtain these goods costlessly, that is, a frictionless economy. However, this same model denies the giver full information regarding the receiver's preferences. The conclusion that gifts are welfare reducing thus rests on the selective application of the full information assumption. More realistically, informational asymmetries and frictions such as transaction costs and search costs exist and differentiate individuals. Our model relaxes the assumption that receivers possess full information and introduces frictions in the form of search costs.

By construction, the giver in our model buys a gift if and only if it has positive expected utility for the pair. She chooses the gift-giving strategy that maximizes the pair's net expected utility. Thus, gift giving is welfare improving in our model.

The above conclusion states that gift giving yields higher welfare than autarky. Still, the need for gift giving would not arise if its welfare properties could be duplicated in a trade economy. In the framework of our model, a giver could speculate on buying a gift in order to sell it to the receiver at a profit, namely, at a negotiated price above her purchase price. To examine this possibility, we need to determine how the negotiated price is formed. Two different information scenarios are possible: the receiver observes the gift either before or after the price is negotiated. Consider first the case in which the type of good is concealed from the receiver at the time of negotiation. In order for the giver to purchase the good with the intent to sell it, the expected negotiated price must be greater than or equal to the purchase price, p.[9] However, if the expected negotiated price is above p, then adverse selection suggests that a giver who normally would not purchase the good would do so in order to sell it at a profit. Thus, full efficiency can occur only if the expected negotiated price is exactly p. This seems unlikely to occur consistently, particularly in view of the inherent hold-up problem resulting from the giver

[9]The term "expected negotiated price" includes the case in which the receiver has already bought the good in his store and therefore no negotiation takes place.

having already sunk the purchase cost of the good at the time of negotiation.

In the second scenario, the receiver observes the good before bargaining takes place and thus would buy the good only if it is the good he desires. An exchange is efficient if the expected value of the good exceeds the expected negotiated price. Recall that in order for the giver to purchase the gift, the expected negotiated price must be greater than or equal to the purchase price. If the negotiated price is strictly less than v, then there exist parameters for which the expected negotiated price is less than the purchase price, even though the expected value is greater than the purchase price. Thus, efficiency is possible only when the negotiated price is precisely v. This again is unlikely since it requires that the giver has all of the bargaining power. Furthermore, if $p + c < v$, then the receiver, having seen that the other store carries his desired good, can simply visit the other store to purchase it. We thus conclude that gift giving cannot be replaced by trade without loss of efficiency.

A simple example to illustrate the welfare improvement gift giving offers over trade relates to the custom in some countries of buying rounds of drinks. The alternative involves each individual purchasing his own drinks over the course of the night. This requires each person to approach separately the bar and pay for his own order. By designating one person (who alternates after each round of drinks) to purchase the drinks for the entire table, there are obvious time savings for the group in terms of trips to the bar and counting money.

Let us now calculate the expected welfare gain from our gift-giving equilibria, that is, the expected value minus the expected cost. The expected cost of a gift received is simply p. The expected value of a gift depends on the gift-giving strategy employed. The expected value of a gift received when `always` is the giver's strategy equals $\frac{1}{2}v(1-\alpha/2)$. The strategy `if own` yields $\frac{1}{2}v(1+\mu(1-\alpha))$. For `if other`, a gift's expected value equals $v(1-\alpha/2-\mu/2+\alpha\mu/2)$. Notice that the partial derivative of all three of these expressions with respect to α is negative. Namely, the expected welfare gain of gifts is a decreasing function of α. As the correlation between the goods sold by two stores increases, the likelihood that the receiver already owns the gift (and therefore derives zero utility from an

additional unit of it) increases. In addition, as can be seen from the expected values of gifts received from the `if own` and `if other` strategies, the more informed is the giver about the recipient's preferences, the greater the welfare yield: $\frac{\partial EU(\texttt{if own})}{\partial \mu} > 0$ and $\frac{\partial EU(\texttt{if other})}{\partial (1-\mu)} > 0$.

5 Refunds

In modern societies, unwanted gifts may often be returned for exchange, credit or a refund. In this section, we extend our model to permit returns. If the gift is a good that R already has or does not want, then he may return it. Because we assume that stores sell only one type of good, we exclude the possibility of exchange or credit and focus our attention on refunds. Assume that R pays c to return the good.[10] When returned, R receives a refund in the amount paid for the good, p. We examine how the possibility of refunds affects G's optimal gift-giving behavior.

First of all, notice that for $p < c$, the recipient will not bother to return the gift. Put differently, for $p < c$ the equilibrium regions remain unaffected for all α since there are no returns. This implies that the `always` equilibrium region remains unchanged since $p < c$ is a necessary condition for the existence of the `always` equilibrium. The addition of returns therefore affects the utility of the gift-giving strategies `if own` and `if other` only. The pair's net expected utility from each of these strategies in light of returns is given below:[11]

$$EU^{refund}(\texttt{if own}) = \frac{v}{2}(1+\mu(1-\alpha)) - p + \max\{p-c,0\} \cdot \frac{1-\mu(1-\alpha)}{2} \quad (12)$$

$$EU^{refund}(\texttt{if other}) = \frac{v}{2}(2-\alpha-\mu(1+\alpha)) - p + \max\{p-c,0\} \cdot \frac{\alpha+\mu(1-\alpha)}{2} \quad (13)$$

If $p > c$ (i.e. it is worthwhile for R to return unwanted gifts), then both of these

[10] One might argue that with the hassle of returning a good, the cost of returning the gift should, in some cases, be higher than c. Alternatively, the return cost may be lower than the search cost in the case that R already bought the same good since he can return it to his local store. We avoid these issues and simply assume that since R must visit a store to return a good, the cost of which equals c.

[11] The calculations of the strategies' expected utilities and their corresponding equilibrium regions follow the same logic as that described in section 3 and therefore have been omitted.

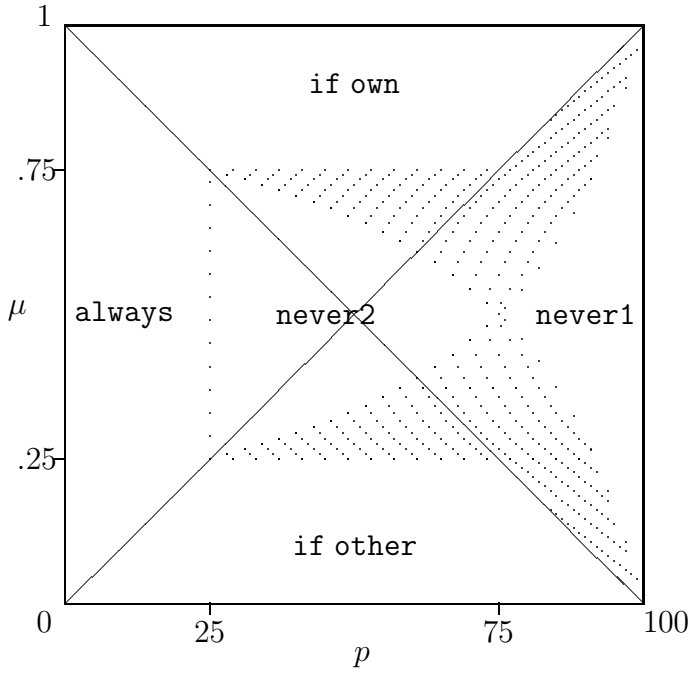

Figure 4: Refund equilibrium regions for α=0, $v = 100$ and $c = 25$. The shaded regions indicate the increase in gift giving (regions `if own` and `if other` expand at the expense of `never1` and `never2`) when refunds are allowed.

expressions are greater than the respective ones without returns. The `if own` and `if other` regions therefore expand at the expense of `never2` and `never1`, as shown by the shaded regions in Figure 4.[12] In summation, the possibility of refunding an unwanted gift increases gift giving and the welfare yield from gifts.

6 Stylized Facts

1. Cash Gifts to Children and Grandchildren: While money is widely considered a poor choice of gift (Pieters and Robben, 1999, survey the numerous reasons why this is so), there are some notable exceptions. For example, as children grow up, parents tend to

[12]The `never2` and `if own` along with the `never1` and `if other` borders are both described by $\mu = (100 - p)/(125 - p)$, while the `never2` and `if other` as well as the `never1` and `if own` boundaries are described by $\mu = 25/(125 - p)$. However, note that when $\alpha > 0$ each of these four boundaries is characterized by a separate equation.

substitute money for in-kind gifts (see Camerer, 1988, p. S198 and Caplow, 1982, p. 386).

Our model offers two explanations for this stylized fact. First, as children spend less time with their parents and begin to develop their own identities, parents know less well their children's preferences, and therefore tend to give a gift certain to be of use to their children, namely, money. Second, as children become more independent their search costs shrink and along with this so do the parents' previously held informational advantages (the location of a desired good, or its range of available prices). While parents may know what sort of toy would make a suitable gift for their eight-year-old child, and where to find it, they may be at loss when it comes to the music or fashion preferred by their fifteen-year-old child.

The disappearance of the parents' search cost advantage over their child culminates with the child's wedding: the child now has a spouse to share in the division of labor, including the search for goods. Cash gifts as a wedding present from parents are thus ubiquitous.

Children receive cash gifts from their grandparents even more frequently and from an earlier age. Both Caplow (1982) and Waldfogel (1993) report that grandparents were the most frequent givers of money; nearly half of the gifts received from grandparents in their studies were money. The grandparents choice may be motivated by insufficient information about their grandchild's preferences. Our model is not only consistent with this explanation (μ close to 1/2 implies `never1` or `never2` for p sufficiently high), but also offers an additional one: in spite of a lower opportunity cost of time, grandparents may have higher search costs than other family members either because they have more difficulty locating a gift their grandchild will appreciate, or because poor health or limited mobility reduces their ability to search.

2. Bringing Gifts Home from a Trip Abroad: As noted in the discussion of the `if own` and `if other` equilibria on pages 11 and 10, it is customary to bring home gifts for loved ones when returning from a trip abroad. If gift giving is welfare reducing, how did this custom evolve? The answer is that specialty items purchased abroad may be

welfare improving. Either because such items are not available at home ($\alpha = 0$ and high c) or they are considerably more expensive at home, givers take advantage of their trip abroad to purchase good-value gifts they know receivers will appreciate, welfare-improving gifts. Persian carpets from Turkey, truffles from Belgium, wooden cuckoo clocks from Switzerland, fabrics and clothing from India and rum from Jamaica are examples of such commonly purchased gift items.

3. Reasons for Valuing Gifts: That search costs are an important motivation for gifts finds ample support in studies on modern gift giving. Respondents in Solnick and Hemenway's (1996) survey designed to measure the welfare yield of Christmas gifts cited eight different reasons for valuing a gift, four of which concern search costs. 22% of their 155 respondents indicated that "the item is something [they] needed/wanted but never remember to get" (high c). Another 20% "wouldn't have wanted to shop for this gift" (high c, possibly due to α close to 0). 13% of respondents said the gift "is not readily available where [they] live" (α close to 0 and therefore high c). Finally, 6% of the receivers revealed that they "didn't know this item was available" (a low probability of locating it).[13] It is worth adding that these reasons and the associated percentages concern Christmas gifts. As the previous stylized fact points out, search costs and the unavailability of the gift item are even more important factors for non-gift-giving occasions, such as trips abroad.

4. The Role of Gender in Gift Giving: Several studies suggest that women are much more involved in gift giving than men. Based on 299 in-home interviews on Christmas gift giving, Fischer and Arnold (1990) conclude that women give Christmas gifts to more recipients than men (on average, 12.5 versus 8), start shopping for gifts earlier than men (in October versus November), devote more time to selecting the appropriate gift (2.4 hours per recipient versus 2.1 hours), and are more successful in finding a desirable gift (10 percent of women's gifts were returned or exchanged compared to 16 percent of men's

[13]Not knowing an item existed or was available may follow from one of two scenarios in our model: first, if α is close 1 and the good is unavailable at R's own store, R does not bother to visit the second store. Second, if R expects to find the good at his own store but doesn't and α is close to 0, R concludes that it is probably unavailable at the second store.

gifts). One of the explanations put forth by Fischer and Arnold for their findings is the sense of duty which women attach to the task of shopping for gifts, and the need to carry it out "efficiently and effectively" (p. 334). They propose that women may possess greater gift-shopping skills than men because they typically do the regular shopping for the family and are more familiar with the tastes, wants and needs of recipients. One woman described how she shopped for her husband as follows: "It takes me a while to figure out what he'd really like. Then I watch for it, to see what market trends are, what goes on sale" (Fischer and Arnold, p. 336). In the language of our model, women have lower search costs than men due to their greater familiarity with the recipient's preferences, their superior knowledge of the availability, location and price of gift goods and, according to traditional gender roles, their lower opportunity cost of time. Our model further predicts that in more egalitarian households in which earned incomes, hours worked and shopping duties are more equal between husband and wife, gift giving will also be divided more equally. This prediction is confirmed by Fischer and Arnold: "More egalitarian men are slightly more involved than traditional men, while more egalitarian women are slightly less involved than traditional women" (p. 342).

Yet men may still have a comparative advantage in shopping for some gifts. In his celebrated study of Christmas gift giving in "Middletown" (Muncie, Indiana), Caplow (1982, p. 386) notes that, "Women are much more likely than men to give ornaments, craft objects, food, plants and flowers. Men give most of the appliances and sports equipment." Traditional gender roles suggest that the gifts given predominantly by women are items about which women are more knowledgeable, either through personal consumption or shopping for such items. Likewise, men may possess a comparative search cost advantage about the mechanics of certain household appliances and sports equipment and therefore choose to give them as gifts.

5. *Gift Giving in Hunter-Gatherer Societies*: Gift giving in hunter-gatherer societies takes on several different forms. Tribes interested in establishing trust and a trading relationship between one another often exchange their most valuable possessions, or in more extreme cases, burn them in ostentatious displays of wealth (see Mauss, 1969). Camerer

(1988) and Carmichael and MacLeod's (1997) models are valuable in understanding the need for inefficiency in this form of pre-relationship exchange. However, once the tribes have established a trading relationship, once they 'get down to business', gift exchange occurs on a much more regular basis; gifts are given and then reciprocated at some later date.

To illustrate the role of search costs in gift exchange in hunter-gatherer societies, we focus on the !Kung tribe of the Kalahari desert in southern Africa. The !Kung are the most thoroughly studied and best documented of all hunterer-gatherer societies.

Anthropologists have attributed several motives to gift exchange among the !Kung or *hxaro* as it is known in their native language (see Lee, 1979, and Wiessner, 1982, for detailed accounts of *hxaro*). For example, gift exchange maintains and expands one's set of social ties. Second, the ability to request a particular gift from someone and the obligation to comply serves to level wealth differences. As concerns the giving of meat, perhaps the most significant reason is the reduction in the variance of consumption (see Wiessner, 1982). In addition to these motives, anthropologists regularly cite, either explicitly or implicitly, the reduction of search costs as a motivating factor in the choice of gift exchange partners. Yellen (1990) writes that "individuals purposely selected gift-giving partners from distant territories. Presumably it was hoped that a partner would have something to offer when goods were difficult to obtain locally" (p. 76). For Lee (1979) too "the obtaining of exotic goods that are not available locally through long-distance *hxaro*" (p. 101) constitutes a function of gift exchange. Wiessner (1982) points out that gift exchange partners need not be so distant for the search-cost motivation to operate: "Hxaro partnerships with those in neighbouring camps lead to frequent visits, a share of meat when a large animal is killed, access to a partner's [land entitlement] which, although it may be adjacent, can have different resources" (pp. 67-68). In the language of our model, clans select gift exchange partners who have access to resources different from their own, and not easily obtainable (α close to 0 and therefore high c).

Thus, through repeated transactions, the implied obligation to reciprocate, the use of personal connections and the reputation for reliability, gift exchange can function well,

reducing search costs and providing greater (diversity in) consumption than autarky. Nonetheless this system of gift exchange is stable as long as an institution promising still lower search costs and a greater variety of goods, such as a marketplace, doesn't come into contact with it. This hints at the fate of gift exchange among the !Kung.

By all accounts, the !Kung were traditionally a successful tribe hunting more than 60 animal species and foraging over 100 edible plant species. However, contact with the Bantu tribe and the market economy of Botswana in the 1970s led to dramatic changes in the !Kung way of life. Most significantly for our purposes, in place of hunting and gathering, the !Kung began planting fields and herding goats and cows. As successful hunters and gatherers, the !Kung, argues Yellen, abandoned hunting and its inherent gift exchange due to "factors other than a failure of the food-securing system" (p. 77). In fact, Yellen's data shows that the already varied diet of the !Kung in terms of number of species consumed did not become more varied after adopting herding and farming. What their adoption of farming and herding and their contact with the market economy of Botswana did permit was the accumulation of goods previously unavailable to them, such as iron pots, plows and extra blankets. In fact, Yellen concludes that "[o]ne major catalyst of change appears to have been a sudden easy access to goods. Perhaps a similar phenomenon contributed to the demise of past foraging societies" (p. 72).[14]

7 Final Remarks

The conventional economic wisdom that gift giving is welfare reducing rests on two not-terribly-realistic assumptions, the gift recipient's full information as to the existence and whereabouts of all desired goods and his ability to obtain these goods costlessly. In this

[14]Kranton (1996) models the interaction between a gift exchange economy and a market exchange economy. In her model, gift exchange can function well when the market is thin and it is therefore difficult to buy and sell goods on the market. On the other hand, a thick market furnishes a wider range of commodities at lower search costs than the gift-exchange economy. This encourages shirking on reciprocal-exchange agreements and a shift to the market outcome.

paper, we develop a model in which the recipient is uncertain about the goods available in the economy. Resolving this uncertainty entails incurring search costs.

Gift giving in our model follows from an attempt to save the receiver the uncertainty and the cost of searching for the good himself. This economic reason for gift giving is meant to complement more usual psychological explanations of gift giving. The results of our simple model indicate that the higher the search costs, the more gift giving. In equilibrium, gifts in our model are welfare improving compared to both autarky and trade.

Our intent is not to state that all gifts are welfare improving. Many are surely not – recall from page 5 the massive volume of gifts given to Queen Elizabeth on New Year's. But certain gifts, motivated by reducing search costs, may enhance welfare. And just maybe, on average, gift giving may make people better off than in its absence.

In our modern world of technology, innovation and the information age, the question arises concerning the relevance of search costs in gift giving. On the one hand, if one knows what one wants, electronic commerce provides access to a wide range of goods. On the other hand, the baffling and continuously expanding plethora of available goods make it impossible to keep up with the fast growing selection of goods or, more precisely, to know what one wants most. This suggests the existence of some goods with high search costs.

Furthermore, the fast pace of modern society with its ever expanding range of leisure pursuits places a premium on our time. In other words, search costs are high. In some instances, time-intensive activities have been replaced by activities that provide more "bang for the buck", for instance, telephone calls and e-mail correspondence substitute for personal visits, movies replace reading, and fitness classes are in lieu of long walks. As this trend continues, we can expect gift giving motivated by saving both the giver and the receiver search costs to take on an even more central place in our personal relationships. The sociologist Michael Schudson expresses similar sentiments.

> Just as every bought object is a convenience good, compared to something homemade, so every giving of things rather than sharing of time is a conve-

nience. The commercialization of Christmas is a sign that people are choosing to express their social natures and their generous natures through material goods, which are both convenient to buy and often relatively permanent as a social bond.

In a society in which, increasingly, both parents work outside the home, this type of materialism is likely to increase as people choose to save time rather than money. (Schudson, 1986, p. 29)

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