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【要旨】
この論文は異世代間の選好伝達の理論的枠組みのなかでタフ・ラブ動機を持つ親の世界観の行動への影響のモデルを構築する。モデルでは親の世界観に対する確信度が高いほど、タフ・ラブ動機によるしつけなどの行動の長期的な利益への確信が高くなるため、タフ・ラブ行動を取る傾向が生じる。

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Worldviews and Tough Love Altruism

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Abstract

Key Words: Tough Love, Intergenerational Altruism, Inter vivos Transfers, Bequest, Endogenous Discounting

JEL Classification Numbers: D03, D1, D64, D91, E2

1. Introduction

There is a large body of literature that assign an important role to parents in shaping preference traits of their children (e.g. Akabayshi (2006), Bhatt and Ogaki (2012), Bisin and Verdier (2001), Doepke and Zilibotti (2008, 2012), Fernandez et al. (2004), Weinberg (2001)). More recently there has been increased emphasis on understanding the beliefs and attitudes of parents that in turn shape preferences of their children.

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In this paper we develop a theoretical framework for intergenerational transmission of preferences that incorporates parental worldviews. In our model the parent has a tough love motive wherein he may allow the child to suffer in the short-run for long run benefits (Bhatt and Ogaki, 2012). In such a setting the parent may often be tempted not to discipline the child, despite the long run benefits, because that may lead to child's short-run suffering. Here the parent's worldview can assume an important role by changing his view on the rate of return for the behavior, which depends on the probability distribution of the long-run benefit to the child. Furthermore the parent's confidence in his worldview will affect the riskiness of the long run benefits of the tough love behavior. For instance, if the parent is very confident in his worldview that long run benefits of disciplining the child are greater than the child's short sufferring then the parent is more likely to be tough on the child because the long-run benefit is surer.

We develop a model of tough love altruism with parental worldviews and social norms impacting the parent's optmizing behavior. Bhatt and Ogaki (2013) propose a model of tough love altruism with bequest motive for parents. We extend their framework in two important dimensions. First, we introduce social norms about childhood transfers and allow parents to have varying degree of confidence in their respective worldview about the appropriate transfer level to teh child. Second, we incorporate parental confidence about the long run cost that their excessive transfers to the child might entail. Using numerical simulations we highlight several important predictions of our model. First, an increase in the parent's own discount factor leads to lower childhood transfers. Second, greater confidence of the

parent in his worldview about lower childhood transfers lower are the parental transfers to the child. Finally, greater parental confidence in lower long run cost to the child implies greater childhood transfers. In section 4, we present the empirical evidence in favor of the main predictions of our theoretical model. For this purpose we discuss a recent study by Kubota et al. (2013). Using experimental data for a cross section of parents in US and Japan, this study investigates the characteristics of parents who are more likely to exhibit tougher attitudes toward their children.

Our paper is related to the literature on effects of culture on economic outcomes. For example Guiso, Sapienza, and Zingales (2006) attribute differences in economic outcomes such as saving rates and growth rates across countries to differences in culture. Benjamin, Choi, and Fisher (2010) show that contributions in public goods can depend on cultures and norms. There is a substantial literature on cultural preference formation following the seminal paper by Bisin and Verdier (2001). In the theoretical models of this literature, preferences are endogenous, and parents affect formation of children's formation. In some models (e.g. Doepke and Zilibotti 2008), parents are purely altruistic in their decisions to affect children's preferences. In other models (e.g., Bisin and Verdier 2001, Akabayashi 2006, and Bhatt and Ogaki 2012, 2013), parents are also paternalistic in the sense that they try to affect children's preferences in the way that the parents prefer. These models can be consistent with recent empirical evidence on pecuniary and non-pecuniary parental punishments (see Weinberg (2001), Hao, Hotz, and Jin (2008), and Bhatt (2011) for empirical evidence).

Our paper is also related to the literature on the effect of norms and worldviews on economic behavior and outcomes. For instance Akerlof and Kranton (2000, 2005) emphasize identity as an important factor that impacts individual decision making. Lindberg and Nyberg (2006) propose a model of altruism where parents attempt to instill norms of hard work in their children and derive the implication of such motive on work effort of the children. Munshi and Myaux (2006) find evidence for change in social norms regarding contraception as a driving force underlying changes in indviudal reproductive behavior.

The remainder of the paper is orgainzed as follows. Section 2 presents the our theoretical framework and highlight the main predictions of the model using numerical methods. Section 3 discusses the empirical evidence in favor of tough love altruism and Section 4 concludes.

2. Worldviews and Tough Love Altruism

In this section we follow the tough love framework of Bhatt and Ogaki (2012) and Bhatt et al. (2013) to study how norms impact the optimizing behavior of the parent who exhibits tough love motive toward his child. Imagine a three-period model economy with two agents, the parent and the child. We assume that the timing of the model is such that the life of the parent and the child overlaps in the first two periods of the child's life. The parent not only cares about his own consumption, but is also altruistic toward the child. He assigns a weight of θ to the child's lifetime utility, where $0 < \theta < 1$.[1] The parent receives an exogenous

[1]When compared to the framework of Bhatt and Ogaki (2012), we have the following relationship:

$$\theta = \widetilde{\beta}\left(\frac{1-\eta}{\eta}\right)$$

income, denoted by y^P, in period 2 of his life. For simplicity, we assume that the parent receives no income in the last period of his life but simply divide savings from the previous period into his own consumption and bequest. The parent maximizes utility over the last two periods of his life by choosing consumption, inter-vivos transfers, denoted by C^P, T, and B, respectively. The child is assumed to be a non-altruist and derives utility only from her own consumption stream $\{C_t^k\}_{t=1}^3$.[2] y_2^k denotes child's second period exogenous income, and we assume that she receives no income in the first and the last period of her life. The child is assumed to be borrowing constrained in period 1.

In the tough love model, the parent has a trade off between giving material satisfaction to the child in period 1 versus promoting virtue of patience. We introduce the tough love motive of the parent via asymmetric time preferences between generations and endogenous discounting. In this model, the parent uses a constant and high discount factor, denoted by $\beta_{t,p}$, to evaluate the child's lifetime utility. The child herself uses a discount factor that is endogenously determined as a decreasing function of period 1 consumption:

$$\beta_k(C_1^k) \quad ; \quad \frac{d\beta_k}{dC_1^k} < 0. \tag{1}$$

With the borrowing constraint faced by the child in period 1, her period t discount factor is given by $\beta_k(T)$.

The above features of the model are simiar to Bhatt and Ogaki (2012) and Bhatt et

[2]In this simple consumption good economy, we view consumption as a composite good that may include leisure activities such as TV time, video game time etc.

al.(2013).[3] We deviate from their setup in an important way. We introduce worldviews into the model. Hiebert (2008, p.26) considers three dimensions of worldview: cognitive, affective, and moral. In order to construct a model that is consistent with the empirical results of Kubota et al. (2013), we focus on the cognitive and moral dimensions. In our model, β_p is a norm of how patient the child should grow up to be. We also introduce a norm about the childhood transfer which is a norm about how much a child should consume during her childhood. These are related to the moral dimension. We assume that the parent is completely confident about the norm related to patience, but may put different subjective probabilities to the childhood transfers norm. For the cognitive dimension, we assume that each parent may put different subjective probabilities about possible side effects of the childhood transfers.[4]

In line with the above discussion, we assume that the parent faces an exogenously given norm about the childhood transfers, denoted by T_0. Then, with probability p he faces a norm of T_{0L} and with probability $(1-p)$ he faces a norm of T_{0H}. We assume that $T_{0H} > T_{0L}$, and interpret p as strength of the parent's subjective belief in his norm. We assume that deviations from the childhood norm transfers imposes a quadratic utility cost of the parents:

$$C_i = \kappa(T - T_{0i})^2 \ where \ i \in \{L, H\} \ and \ \kappa > 0 \tag{2}$$

The second main extension we make is to allow for parental expectations about the long term consequences of childhood transfers on the child's welfare. We capture this by

[3]For simplicity in this paper we abstract from taxation of bequest as proposed by Bhatt et al.(2013).
[4]In this context, we wish to interpret transfers as the medicine in Kubota et al (2013).

introducing a norm level of *side effect*, denoted by S, associated with the childhood transfers. The main effect of this effect is assumed to reduce the level of child's second period income.[5] Formally, with probability p_S parent expects the side-effect of S_L and with probability $(1-p_S)$ the side effect is S_H. Then,

$$y_{2i}^k = y_2^k - S_i \times T \ where \ i \in \{L, H\} \tag{3}$$

In this model, the parent solves the following optimization problem:

$$\max_{C^p,T,B} \ \Big[v(C^p) + \widetilde{\beta} v(R(y^p - C^p - T) - B)\Big] + \theta\Big[u(T) + p_S\Big(\beta_p u(C_{2L}^{k*}) + \beta_p^2 u(R(y_{2L}^k + B - C_{2L}^{k*}))\Big) + (1-p_S)\Big(\beta_p u(C_{2H}^{k*}) + \beta_p^2 u(R(y_{2H}^k + B - C_{2H}^{k*}))\Big)\Big] - [p\ \kappa(T - T_{0L})^2 + (1-p)\ \kappa(T - T_{0H})^2], \tag{4}$$

subject to:

$$\Big\{C_{2i}^{k*}\Big\} \equiv \arg\max_{C_{2i}^k} \ \Big(u(C_{2i}^k) + \beta_k(T) u(R(y_{2i}^k + B - C_{2i}^k))\Big) \ for \ i \in \{L, H\} \tag{5}$$

Hence, the optimal transfers of the parent in the above setting will be impacted by his norms. There is no closed form solution to the parent's optimization problem outlined above. Hence, we solve it numerically as as a non-linear root finding problem. For this purpose we use the following parameteric specification:

$$u(x) = v(x) = \frac{x^{1-\sigma}}{1-\sigma}. \tag{6}$$

[5]One way to interpret this is in the context of the fever question asked by Kubota et al (2013). There, the medicine that can cure the child's fever has a possible side effect of harming the child's long run immune system.

The discount factor is given by:

$$\beta(T) = \beta_0 + \frac{1}{1+aT} \quad where \quad a > 0 \; and \; \beta_0 \leq 0. \tag{7}$$

2.1. Main Predictions of the Model

In this section we discuss the main predictions of the model outlined in the previous section. For a given set of parameter values, we first numerically solve the parent's problem described in (4) and (5) using the parameterization outlined in (6) and (7). Then, we trace out the parent's response, in terms of optimal childhood transfers, to changes in p, p_S, β_p, and $\widetilde{\beta}$.

2.1.1. Effect of Change in p

In our model, p, can be interpreted as the strength of the parent's belief in the norm level of transfers being $T_{0L} < T_{0H}$. Figure 1 presents the results of the simulation where we increase p monotonically. We observe that an increase in p leads to a monotonic decline in optimal transfers to the child from parents.

2.1.2. Effect of Change in p_S

In our model, p_S, can be interpreted as the strength of the parent's belief that the side-effect of childhood transfers on income is $S_L < S_H$. From Figure 2 we observe that more strongly the parent believes in smaller side-effect, greater is the childhood transfer to the child.

2.1.3. Effect of Change in β_p

The parameter β_p captures the discount factor used by the parent to evaluate child's lifetime utility. Figure 3 presents the change in T^* when we increase β_p from 0.1 through 0.9. We observe that optimal transfers decline as $beta_p$ increases.

2.2. Effect of Change in $\widetilde{\beta}$

The parameter $\widetilde{\beta}$ captures the discount factor used by the parent to evaluate child's lifetime utility. Figure 4presents the change in T^* when we increase $\widetilde{\beta}$ from 0.1 through 0.9. We observe that optimal transfers decline as $beta_p$ increases.

3. Conclusion

In this paper we extend the tough love altruism model (Bhatt and Ogaki, 2012) by introducing parental worldviews in their framework. We do so by adding a social norm about appropriate level of transfers to the children and introduce parental beliefs about these social norms. A parent with stronger belief faces a greater cost of deviating from the transfer norm. We also add parent's belief about the long term effects of their transfers to their child. We use this modified framework and find that as a parent's belief that lower childhood transfer is the appropriate level becomes stronger, there is a decline in his optimal transfer to his child. This prediction is consistent with the empirical findings of Kubota et al (2013),

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