Value Functions, Fostering and Kingdom Gains

Katherine Wick
Abilene Christian University

ABSTRACT: Behavioral economics is rising in popularity in American classrooms, and its discussion is relevant to students across business, public health, social sciences, and the humanities. As professors teach about loss aversion and risk, we introduce students to the kinked value function as an important part of prospect theory. In this paper, I will show a Kingdom-based approach to teaching about value functions in the context of the foster care system where there exists a crisis of capacity. It is only when Christians place their reference point in the Kingdom that risky endeavors show returns that outweigh losses.

INTRODUCTION

The following creative instruction example attempts to breathe life into a traditionally difficult value function graph using a social justice problem as context. Behavioral economists see the world through a different lens than most traditional economists who base their study on rational choice behavior. Choice mysteries, such as why individuals choose to become foster parents, become puzzles to explore for the behavioral economist. When presented with the foster care social dilemma, students will learn how to investigate this problem as a Christian behavioral economist whose hope and reference is in the eternity of God's Kingdom. In their investigation, they will also learn how to use the kinked value function, a pillar of prospect theory and behavioral economics.

According to the Adoption and Foster Care Analysis and Reporting System, on Sept. 30, 2015, the United States foster system was estimated to be caring for 427,910 children (U.S. Department of Health and Human Services, 2016). Of those children, 45% were in non-relative foster homes and 26% were given the name "waiting children," for they lacked permanent homes or parents. These numbers are not news; they have remained steady over the last decade. From 2006 to 2015, between 400,000 and 500,000 children were registered as active cases in the U.S. foster care system annually. The shortage of foster homes is so drastic that the number of foster children sleeping two consecutive nights in state protective services offices is at an all-time high in Texas (Chang, 2016). There are not enough homes to accommodate incoming children. Social workers, politicians, and civic leaders are all looking for ways to recruit responsible adults to care for children, maintain their foster status, and adopt when needed.

Scholars have looked into the simple question of how to encourage more adults to become foster and adoptive parents. They have proposed increasing foster payments and launching marketing campaigns, but the problem is that fostering is filled with loss—loss of freedom, loss of certainty, loss of control, and possibly even the loss of a child to whom the parent is deeply attached. Adam Smith (1759-90) describes how individuals feel about such loss:

> Pain, I have already had occasion to observe, is, in almost all cases, a more pungent sensation than the opposite and correspondent pleasure. The one, almost always, depresses us much more below the ordinary, or what may be called the natural state of our happiness, than the other ever raises us above it. (p. 121)

Individuals are averse to loss since the pain associated with it is more "pungent" than the same equivalent gain. Since the losses associated with the foster system are common knowledge, adults are hesitant to venture into the child welfare system. Thus, creating capacity and retaining foster parents is an extremely difficult task.

The remedy to the foster care crisis could be found within the members of the body of Christ who have a clear mandate in Scripture "to visit orphans and widows in their affliction" (Jas 1:27 English Standard Version) and to "give justice to the weak and fatherless" (Ps 82:3). Foster parents are Kingdom workers, whether they give that reason for their service or not. The Lord promises blessing on those who show mercy and riches to those who follow His word

(Jn 14:23-24). When factoring in Kingdom gains, the journey into foster care is filled with glory, where the anchoring effects of the losses are minimized.[1] Welcoming children in the name of Christ comes with the promise of welcoming the Father and His Kingdom into the home (Mk 9:37).

Aversion to loss can make the promised gains of mercy, comfort, and peace seem small relative to the loss of the independence, control, time, certainty, and even a cared-for child. Individuals have been shown to exhibit a status-quo bias, meaning they are unmoved by the prospect of gaining a benefit that they do not already have but are deeply averse to losing some benefit they already have (Kahneman & Tversky, 1979). Using principles embedded into behavioral economics, risk and loss aversion, we will introduce the value function and show that taking risks for the Kingdom is optimal when Christians reframe their minds to rid themselves of this status-quo bias.

LITERATURE REVIEW

The basis of traditional economic study is that individuals make rational, optimal choices based on careful weighing of marginal benefits and marginal costs, influenced by their preferences. The problem with this theory is that humans are not fully rational and often make less than optimal decisions. Psychologists Daniel Kahneman and Amos Tversky (1979) developed prospect theory and showed that individuals care about the context of choices, whether the decision is framed as a loss or a gain. If subjects were given two choices that were equivalent but one payoff was described in gains and the other in losses, they would choose the former since losses have a larger emotional impact on choices than the correspondent gain. Thus, a pillar of prospect theory is loss aversion, which is based on the idea that people become more upset when they lose something than when they gain a benefit of equal value.

Loss aversion can explain a variety of occurrences, such as why companies offer a 30-day return policy with no questions asked. Once a customer takes a product home, it becomes part of their endowment, their status quo, and loss aversion makes them unlikely to return the product. Loss aversion can also explain why the amount of homes for sale in an economic recession decreases and why investors behave irrationally by selling successful stocks prematurely and holding onto losing stocks too long.

Kahneman and Tversky (1979) developed the value function $v(x)$ as part of prospect theory to represent how an individual evaluates a change, x, to their status quo. This function also shows the phenomenon that if individuals see their choice as a gain, they make risk-averse choices; when they view their choice as a loss, they make risk-seeking choices. Thus, the value function is kinked around the status quo (often the origin) since the perception of the event, x, depends on whether it is perceived as a loss or a gain.

The question of how to create more capacity in the foster care system usually starts with increasing incentives for foster parents. We know that raising children is costly, from clothes to food and housing. Reimbursement rates to foster parents are designed to mitigate these costs as well as to provide a participation incentive. Currently reimbursement rates vary based on the state as well as the licensing needs of the child. In a randomly controlled study, Chamberlain et al. (1992) found that increased support from social workers and an additional $70 a month lowered dropout rates of foster families to 9% compared to the control group that experienced dropout rates of 40%. Duncan and Argys (2007) argue that increasing foster reimbursements by $100 a month will increase the stability of foster care by decreasing the average number of placements for a child by 20 percent. Simon (1975) very simply explains the foster placement issue as a market of price and quantity. Specifically, when "foster payments go up, the 'price' of a child ... goes down and the quantity of children demanded may be expected to rise." His calculation of the elasticity of supply of foster homes in response to changes in payments was inconclusive, though, suggesting that there is more going on than simple market analysis.

Few foster parents enroll in this process to make money. Many families prefer support services, such as respite care and training, to increases in board rates (Goodman & Steinfield, 2012). Harris-Rome et al. (2011) recount the successful process of foster parents unionizing in Washington for better support with respite services, training, and higher reimbursement rates. The most telling statistic may come from Barbell (1999) who found that only 7.2% of foster families are motivated to begin the process to increase their income and that many discover adding to the family by fostering can increase hardship. Again, that reason is not monetary but points to the need for services to assist foster families. In fact, between 30% and 50% of the estimated 200,000 licensed foster homes choose to leave the child welfare system each year mainly due to lack of support from the system (Kenny, 2016).

The reasons families step into foster care are many. Foster parents are drawn into helping the development of the next generation and improving outcomes for young people (McHugh et al., 2004). They can gain company after their own children have left home (Goughler & Trunzo, 2005) and live out their religious beliefs (Kirton, 2001). Of course, there are also many studies that point to the trends in fertility where families are waiting longer to have children and face troubles conceiving as a result. Overall, the literature points to varied motivations, with money being among the least. Since the financial and emotional cost of supporting a foster child is high compared to the allowance paid to families, it is not a financially justifiable alternative to paid work.

In their article, "The Science of Attracting Foster Carers," Randle et al. (2014) discuss their 2009 survey, which asked adults (of 756 Australian households) why they didn't step into the child welfare system. The most frequently given barriers to fostering were the family had never been asked, they had too many other commitments, personal circumstances, opportunities never arose, not enough room, could not cope, too busy with work/other kids, that it would restrict what family would want to do (e.g., travel), feelings of inadequacy, dealing with emotional and physical issues of the child, and possible heartbreak. Fear of loss underlies most of these reasons. These potential foster parents are worried about their own lives being disrupted. These fears are rational because adding a child to your home by any method upsets the balance and causes a loss of freedom.

Howell-Moroney (2013) discussed the recruiting success church ministries are experiencing in partnering with state foster agencies. He stressed the importance of these ministries as a recruitment tool since families in the churches studied have high levels of education and made it through the first part of the process (training) with greater ease than the rest of the population. Foster parents from within these ministries anecdotally seem less likely to burnout as fast since their church provided support, encouragement, and respite services throughout the training, foster, and adoptive processes. Thus, Howell-Moroney calls for replication of these ministries to create desperately needed capacity in the foster system.

The church can increase foster system capacity, but its members face the same pressures of other commitments, feelings of inadequacy, and the aversion to possible heartbreak. In the end, Christians are still people, living in an economy where they make choices and weigh gains and losses in reference to their status quo.

BEHAVIORAL ECONOMIC ANALYSIS

To illustrate loss aversion and bias, let's look at an example individual or family deciding to foster. For whatever reason, they have felt the draw to have a child. They have been weighing the pros and cons of different ways to grow their family. When looking at foster care, they are most likely intrigued by the lack of out-of-pocket cost but stunned by the riskiness of the endeavor, especially if looking into adopting a single infant or young child. The majority of pre-adoptive waiting children are minority, school-aged siblings.

The risk of a child leaving a foster home is high. In 2015, approximately 51% of children exited foster care and were reunified with their birth parents at the end of a year (U.S. Department of Health and Human Services, 2016). That number increases to close to 70% when kinship placements are included (Bachik, 2014; U.S. Department of Health and Human Services, 2003). These statistics reinforce a feeling of uncertainty that surround foster parents since there is approximately a 70% chance that a child they love will leave usually with short notice after living with them under a year. In their extensive research, Sinclair, Wilson, and Gibbs (2005) report that foster care seldom offers permanence; its placements are likely to break down. As can be expected, this is painful emotionally for children and for foster families.

Going back to the family's decision, let's turn it into a simple choice of weighing benefits and costs. We want to capture their value function $v(x)$, which represents how they evaluate change, x, to their frame of reference or status quo.

In behavioral economics, the value function is not the same as a utility function mainly because it references changes to an endowment and is kinked around a reference point, which we call the status quo. The value function is a key principle in prospect theory that has, at its core, individuals placing more emphasis on gains than losses and the probabilities associated with those events. Below is an example of a typical value function that is kinked around the reference point of the origin. Figure 1 depicts loss aversion since the vertical distance between the origin and $v(-1)$ is greater than the vertical distance between the origin and $v(+1)$, establishing that $|v(-1)| > |v(+1)|$. Mathematically, these functions and graphs give numeric and visual meaning to a common idea that if you gain something and then lose it, you feel worse off than the point at which you started. How you value your good, idea, event, item, or ideal (your x) depends upon whether it is framed as a potential loss or as a potential gain because losses tend to hurt worse than gains which bring pleasure.

$$v(x) = \begin{cases} x/2 & \text{for gains } x \geq 0 \\ 2x & \text{for losses } x < 0 \end{cases}$$

Our representative family would ideally like to a gain a child with minimal loss to their freedoms, emotional well-

Figure 1: Basic Kinked Value Function

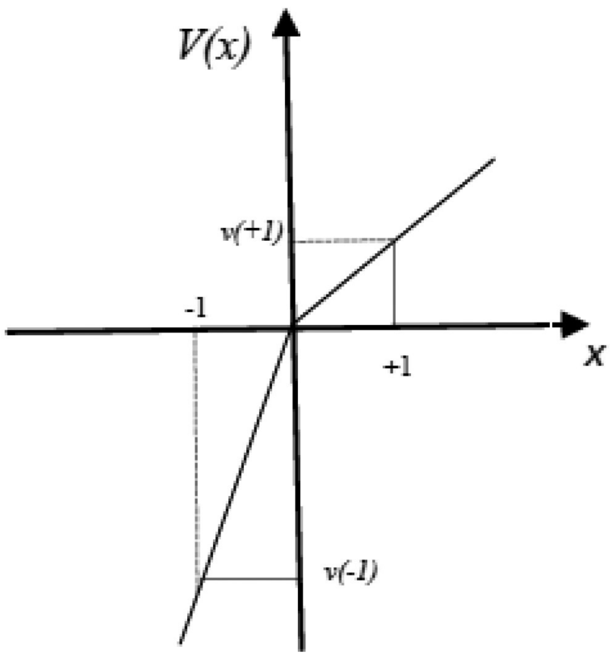
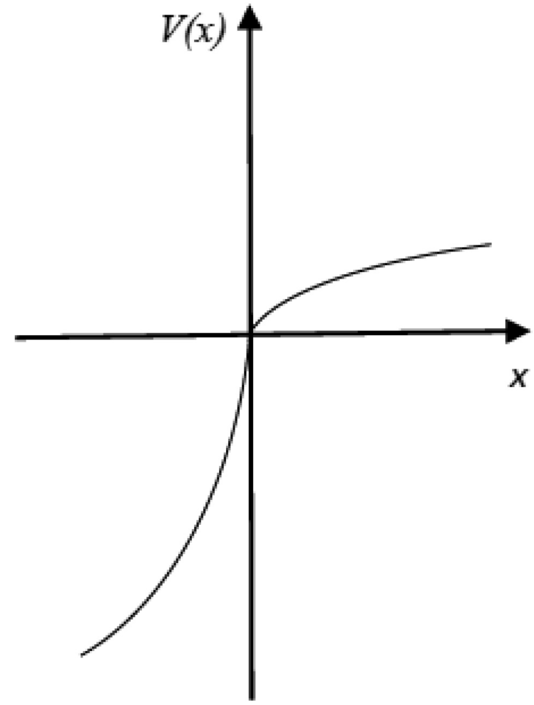


Figure 2: Kinked Value Function with Risk Attitudes



being, and current financial state. They are also concerned about the risk associated with the outcomes of their foster care venture. Taking into account risk aversion in the gain domain ($x \geq 0$) and risk-seeking behavior in the loss domain ($x<0$), which is typical of human behavior, their value function may look more like the following:

$$v(x) = \begin{cases} \sqrt{x/2} & \text{for gains } x \geq 0 \\ -2\sqrt{|x|} & \text{for losses } x < 0 \end{cases}$$

Their status quo is the origin of zero—their current earthly status/station. Let's consider that they place a value of a child at $x = 5{,}000$. Thus, we want to place the value of this event into their value function to see how it compares with their status quo at $x=0$. From the literature, we know that there is an approximately 70% chance a child will leave a foster home within a year. Therefore, there is a 70% chance the x-value of 5,000 will be in the loss domain for this family and 30% chance that the x-value of 5,000 will be in the gain domain. The expected value of the foster gamble is then $0.30\left(\sqrt{\frac{5000}{2}}\right) + 0.70\left(-2\sqrt{|-5000|}\right) = -83.98.$.

Given the risk and the loss aversion in this function, it will not matter what arbitrary value is given to the gain or loss of the child (5,000 or 20,000)—the result will be a negative expected value. Relative to their starting position of zero—the origin—why take this risk when the expected value is negative? The loss looms so large that it discourages families from stepping out and becoming the needed capacity in the child welfare system. An individual's status quo is preferable. It is easy to see here that an increase in monthly payments would do very little to mitigate this loss and could not keep it from pushing negative.

What we know about God's Kingdom is that it functions entirely different than the world to which we have grown accustomed. Wendell Berry's (2010) book *What Matters?* details how God's great economy places different value on nature, on those who have no voice, and on gains and losses. He writes:

> [I]n the Great Economy, all transactions count and the account is never "closed."… We see that we cannot afford maximum profit or power with minimum responsibility because, in the Great Economy, the loser's losses finally afflict the winner. Now the ideal must be "the maximum of well-being with the minimum of consumption," which both defines and requires neighborly love. (133-134)

Jesus is no ordinary accountant or economist. He does not record profits and losses in the same way as a CPA. Although taking risky steps in faith may lead to emotional, financial, and even physical losses, all transactions for the Kingdom "count." Individuals feel losses from the reference point of their earthly status quo, but He is counting steps in faith as righteousness and promises rewards and heavenly gains (Heb 6:12; Heb 11).

Jesus' sacrifice allows His followers to *reframe* their accounting of gains and losses in a similar manner. As Paul said in Philippians 3:7-8:

> But whatever gain I had, I counted as loss for the sake of Christ. Indeed, I count everything as loss because of the surpassing worth of knowing Christ Jesus my Lord. For his sake I have suffered the loss of all things and count them as rubbish, in order that I may gain Christ.

Loss aversion causes individuals to hold tight to their known status quo, but Paul poetically describes the reframing that Christ's death and resurrection provides. Thus, when risks are taken for the Kingdom, He is the reward. Stepping out and caring for others is risky, but Jesus describes the heavenly reward and blessing when he speaks of the final judgment in Matthew 25:31-36, 40:

> When the Son of Man comes in his glory, and all the angels with him, then he will sit on his glorious throne. Before him will be gathered all the nations, and he will separate people one from another as a shepherd separates the sheep from the goats. And he will place the sheep on his right, but the goats on the left. Then the King will say to those on his right, "Come, you who are blessed by my Father, inherit the kingdom prepared for you from the foundation of the world. For I was hungry and you gave me food, I was thirsty and you gave me drink, I was a stranger and you welcomed me, I was naked and you clothed me, I was sick and you visited me, I was in prison and you came to me."... "Truly, I say to you, as you did it to one of the least of these my brothers, you did it to me."

The heavenly gain of blessings because you welcome Jesus and care for the "least of these" transforms the Christian foster parent's frame of reference.

Therefore, we could hypothesize that this Kingdom view of gains and losses turns the previous value function upside down, meaning losses are no longer as steep since Jesus counts all those risks taken for His glory, and He shares in the burden of those losses (Mt 11:29). When risks are taken for the sake of the Gospel and for the burdens Christ places in the hearts of believers, those acts bear fruit not just on earth but in heaven. Thus, the gains are more than doubled.

Therefore, I propose our new value function for Kingdom ventures becomes:

$$v(x) = \begin{cases} 2\sqrt{x} & \text{for gains } x \geq 0 \\ -\sqrt{\left|\dfrac{x}{2}\right|} & \text{for losses } x < 0 \end{cases}$$

The expected value of the foster gamble becomes:

$$0.30\left(2\sqrt{5000}\right) + 0.70\left(-\sqrt{\left|-\frac{5000}{2}\right|}\right) = +7.43$$

Similar to the analysis above, given the switch of the functions and the arbitrary value placed on *x*, the value given to the gain or loss of the child, does not matter because expected value of this function will always be positive. Thus, with a Kingdom view of gains and losses, Christians can be of good courage to step out on scary ventures because the Lord helps to carry their afflictions and rejoices in giving good gifts to His children.

This analysis becomes even stronger if there is a shift in the reference point or identity associated with of the starting position. Going back to the first analysis of loss aversion, we saw that the loss of the foster gamble was too great, and an individual would prefer their status quo. But what if we change the view of that status quo? What if we change the perspective of the origin so that an individual's status quo is not their current earthly starting place but their heavenly promised Kingdom? Jesus was able to endure the cross with surety of loss and death because he shifted his reference point from an earthly focus to a Kingdom focus. If He had placed his reference as His earthly status quo, it would have been very difficult for Him to be obedient to death (Phil 2:8). His obedience bought redemption and allowed for gains in the lives of His followers, and it opened the door for us similarly to shift our reference point in taking up our cross to follow Him:

> Then Jesus told his disciples, "If anyone would come after me, let him deny himself and take up his cross and follow me. For whoever would save his life will lose it, but whoever loses his life for my sake will find it." (Mt 16:24-25)

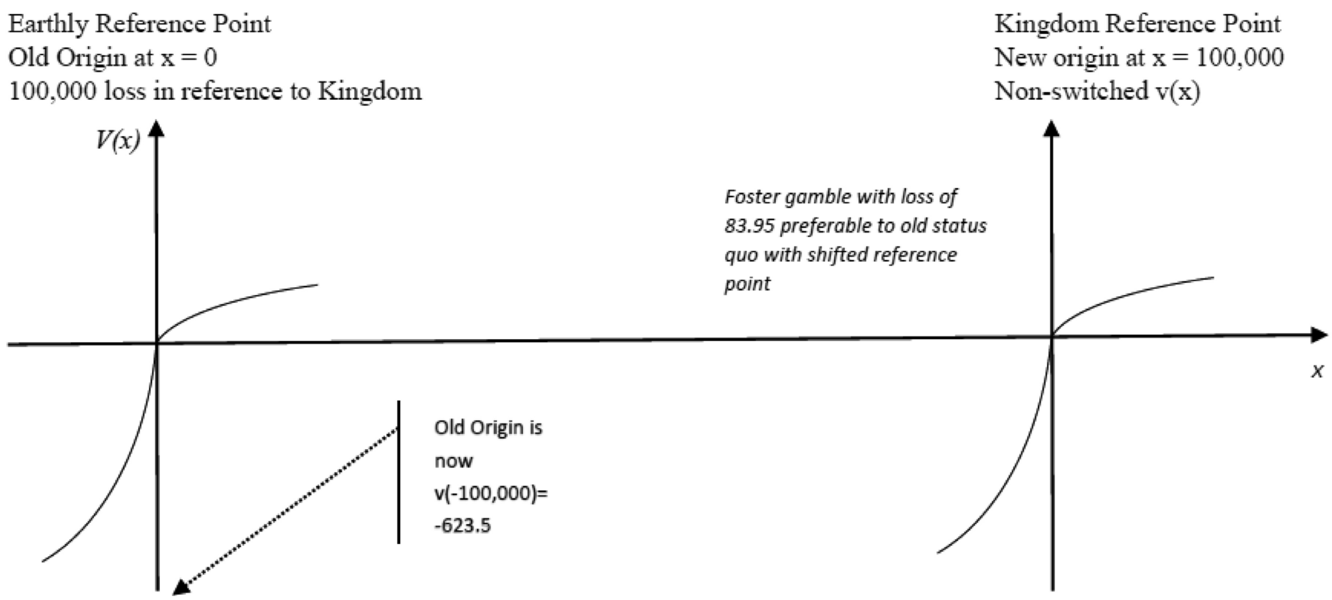
Jesus risked everything and gave all for us. Thus, we can have courage to take risks for Him and His kingdom and to give of ourselves like the widow who gave her last two coins, "all she had to live on" (Mk 12:44).

With the swap in the value function, we see that the foster gamble is *preferable* to our zero/origin frame of reference or status quo. Walking out our faith in risky Kingdom endeavors becomes even more desirable to our earthly status quo with a shifted reference point.

We know that the Kingdom has immeasurable worth, but for the sake of this analysis, let's give it an *x*-value of 100,000. Thus, compared to the Kingdom, the earthly status quo would be a loss of *x*=100,000 with an associated value of -223.6 with Kingdom functions and -632.5 with traditional behavioral economic functions. Therefore, when a person does not "put on Christ" as their reference and identity, they are making choices in a state of loss (Rom 13:14).

In Figure 3, there are two y-axes describing the two reference points. On the left is the earthly status quo at the

Figure 3: Comparison of Value Functions at Earthly Status Quo and with Shifted Reference Point in the Kingdom of God



origin (x=0) and on the right is the Kingdom reference point (x=100,000). From the perspective of the Kingdom reference point, the earthly origin is a loss of x=100,000 which has a v(x) value of -623.5. The first calculation for the foster care gamble using traditional behavioral economic value functions is -83.98, which is higher in value than the loss associated with earthly status quo. Thus, the risky gamble with a shifted reference point is preferable even with behavioral loss averse value functions to the value of the earthly status quo. This preference for fostering becomes even stronger with the reversing of an individual's value functions.

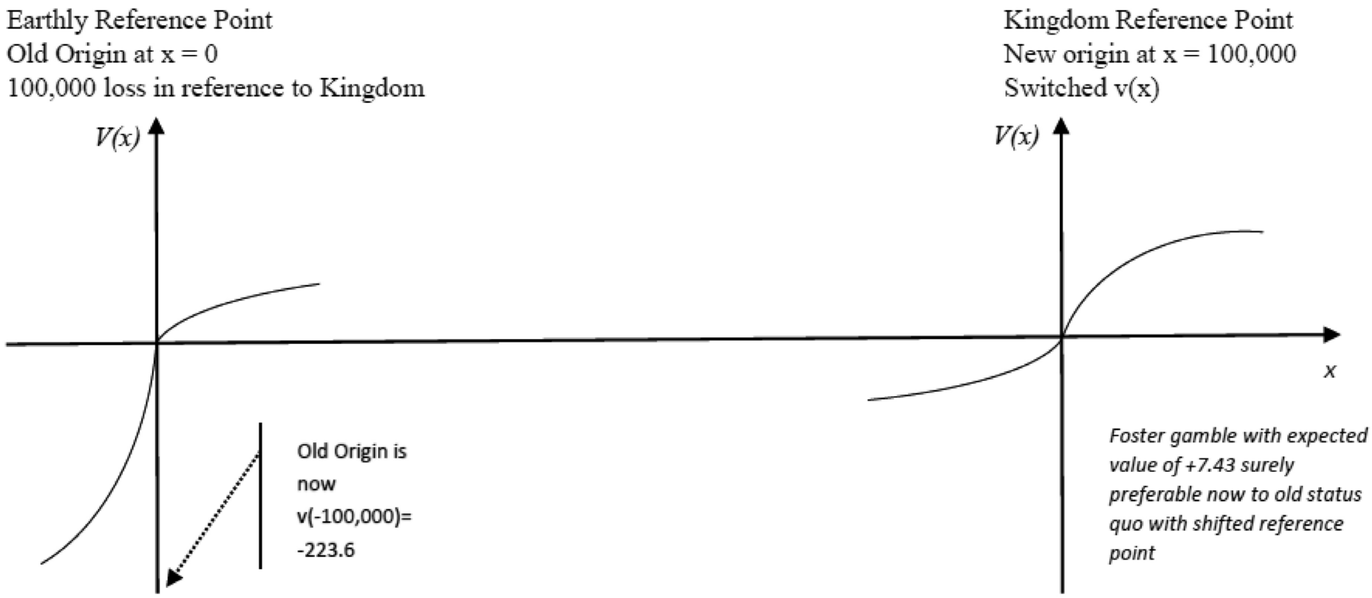
In Figure 4, we again see the two reference points—the origin of the earthly frame of reference on the left and the Kingdom frame of reference on the right. From the perspective of the Kingdom, the earthly origin is a loss of x=100,000 with an associated value of -223.6 using the Kingdom value functions. The value of the foster care gamble with the same functions is +7.45, and therefore, it is preferred to the earthly status quo.

Thus, the decision to foster becomes one based in identity. If your identity is in earthly ideals and you ascribe to earthly views of gains and losses, then the foster gamble is always too risky and one not worth taking. If you put on Christ and make the Kingdom your reference point, your value of gains and losses changes. The risky gamble becomes viable and rewarding. If comparing the expected payoff of fostering (+7.43) with the payoff of remaining at an earthly status quo (-223.6 at best), the decision seems simple yet utterly life-altering, for this analysis could extend to any risky faith endeavor, any burden that the Holy Spirit places inside each of us. Jesus promises peace, comfort, and blessing for those who mourn, whose heart breaks for what breaks His (Mt 5:4).

CONCLUSION

Graphs are a stumbling block in learning economics, but by introducing the concept of the value function in the context of an important, timely issue, the numerical and visual analysis becomes more real and less conceptual. Using behavioral economic principles of loss aversion and risk, professors can not only demonstrate these ideas to students, but they can also show that taking risks for the Kingdom is optimal. This idea is prevalent in Scripture, but its presentation in behavioral economics terms can help make concepts like kinked value function stick. Moreover, we can use this introduction of value functions to continue speaking truth to our students, for when we set our reference in Him, we can walk forward confidently. Gambles for the Kingdom might lead to losses during this life (Jn 16:33), but those losses have value in the name of Christ. As Paul said, "For to me to live is Christ, and to die is gain" (Phil 1:21).

Figure 4: Comparison of Value Functions with Shifted Reference and Reversed Equations for Kingdom Pursuits



ENDNOTES

1 For more reading on the Kingdom of God, see Mt 13, Mt 21:42-44, Mk 10:14-15, Mk 12:28-34, Lk 17:20-21, and Lk 18:18-30.

REFERENCES

Bachik, A. (2014). National Center for Policy Analysis: Adoptions from foster care. Retrieved from http://www.ncpa.org/pdfs/bg171.pdf

Barbell, K. (1999). *The impact of financial compensation, benefits, and supports on foster parent retention and recruitment.* Washington, DC: Child Welfare League of America.

Berry, W. (2010). *What matters? Economics for a renewed commonwealth.* Berkeley: Counterpoint.

Chamberlain, P., Morleland, S. & Reid, K. (1992). Enhanced services and stipends for foster parents: Effects on retention rates and outcomes for children. *Child Welfare, 71*, 387-401.

Chang, J. (2016, June 7). 67 Texas foster children slept in state offices in March and April. *The Austin American-Statesman*. Retrieved from http://www.mystatesman.com/news/state--regional-govt--politics/texas-foster-children-slept-state-offices-march-and-april/VM2oQCF3iLPdgbOebj2kEN/

Duncan, B., & Argys, L. (2007). Economic incentive and foster care placement. *Southern Economic Journal, 74*, 114-142.

Goodman, D., & Steinfield, F. (2012). *Building successful resource families practice guide: A guide for public agencies*. Baltimore: Annie E. Casey Foundation. Retrieved from http://www.aecf.org/resources/building-successful-resource-families/

Goughler, D., & Trunzo, A. (2005). Unretired and better than ever: Older adults as foster parents for children. *Families in Society, 86*, 393-400.

Harris-Rome, S., Whiting-Blome, W., & Raskin, M. (2011). An examination of foster parent unionization: The Washington state experience. *Journal of Community Practice, 19*, 292-307.

Howell-Moroney, M. (2013). Faith-based partnerships and foster parent satisfaction. *Journal of Health & Human Services Administration, 36*, 228-251.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica, 47*, 263-292.

Kenny, J. (2016, April 1). Why foster parents quit. *The Chronicle of Social Change*. Retrieved from https://chronicleofsocialchange.org/blogger-co-op/foster-parents-quit/16667

Kirton, D. (2001). Love and money: Payment, motivation and the fostering task. *Child & Family Social Work, 6*, 199-2008.

McHugh, M., McNab, J., Smyth, C., Chalmers, J., Siminski, P., & Saunders, P. (2004). *The availability of foster carers: Main report.* Sydney, NSW: Social Policy Research Centre, University of New South Wales.

Randle, M., Miller, L., Dolnicar, S., & Ciarrochi, J. (2014). The science of attracting foster carers. *Child and Family Social Work, 19*, 65-75.

Simon, J.L. (1975). The effect of foster-care payment levels on the number of foster children given homes. *Social Service Review, 49,* 405-411.

Sinclair, I., Wilson, K., & Gibbs, I. (2005). *Foster placements: Why they succeed and why they fail*. London: Jessica Kingsley.

Smith, A. (1759-90/1976). *The theory of moral sentiments*. D. D. Raphael & A. L. Macfie (Eds.). Oxford: Clarendon Press.

U.S. Department of Health and Human Services (2003), *AFCARS, Report #8*. Washington, DC: Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. Retrieved from http://www.acf.hhs.gov/programs/cb/publications/afcars/report8.htm

U.S. Department of Health and Human Services (2016). *AFCARS (Adoption and Foster Care Analysis and Reporting System) report for fiscal year 2015*. Washington, DC: Administration for Children and Families. Retrieved from https://www.acf.hhs.gov/cb/resource/trends-in-foster-care-and-adoption-fy15