Willingness to Grieve

The loss of an animal companion, whether due to death, being lost or stolen, or placement in a new home, may be one of the most devastating and painful experiences we ever face. For many, such a loss is as traumatic as losing a family member or a dear friend and can trigger an intense grieving process [Dumb Friends League, 2003]. The most difficult of all losses may be the disappearance of one we love. This is true whether it is a person MIA in wartime or a pet that becomes lost or is stolen. They are gone without a trace; we are left behind filled with uncertainty, doubt and hurt.

Death gives us permission to grieve. When we don’t know what has happened or where our pet may be, we instinctively hold out hope. Our energy is directed toward trying to find the one we’ve lost. We search, put up signs, place newspaper ads, call animal control and local shelters. We call veterinary clinics, emergency hospitals, and contact pet-finder services [Brandenburg, 2003].

From an economist’s point of view, such a loss clearly results in a negative impact on the grieving individual welfare. In many empirical studies, analysts seek to obtain money measures of welfare changes due to changes in availability of goods. Could we apply the same analysis to a lost dog or cat? But how can we value something as elusive as a loss of a beloved dog? Is there a dollar amount that could completely compensate someone for the loss of her dog? What is the maximum amount a person would be willing to pay to prevent a such a loss?
Perhaps we can look at the values indicated on “lost dog” signs to estimate the value of the dog to its owner. In order to do so, it is first important to define precisely what such an estimate would be measuring and what issues might be important to consider. The concept of value that economists typically use is consumer’s surplus. The conventional measures of consumer’s surplus are the compensating and equivalent variations, $CV$ and $EV$, respectively.

The $CV$ and $EV$ are calculated for an individual for a change in the state of the world. In our example of a lost pet, we can define the initial state $S_0$ to be the state in which the dog is lost. And the new state $S_1$ will be the state of the world in which the dog is found (we can say that $S_0 < S_1$ because the state $S_1$ is preferable to $S_0$).

The individual’s $CV$ for a change from $S_0$ to $S_1$ is how much money would have to be subtracted from her income after the dog is found to make her indifferent between the initial state and the new state with the subtraction from income. Because the individual will be very happy to find her lost dog, $CV > 0$.

An individual’s $EV$ for a change from $S_0$ to $S_1$ is how much money would have to be added to her income when the dog is still lost, to make her indifferent between finding the dog and not finding the dog but receiving the money. Clearly, $EV > 0$.

In other words,

$$V(I_0, S_0) = V(I_0 - CV, S_1) \text{ and } V(I_0 + EV, S_0) = V(I_0, S_1) \quad [\text{Morey, 2003}]$$

Where $V$ denotes “utility” and $I_0$ denotes income before the dog is lost. Here because $S_1 > S_0$, then $CV > 0$ and $EV > 0$.

So, $CV$ is the maximum dollar amount the individual is willing to pay to get her dog back. Similarly, $EV$ is the amount she is willing to accept to feel indifferent between
having the money and getting the dog back. The \( CV \) also corresponds to the maximum amount an individual would be willing to pay (WTP) to secure the improvement and the \( EV \) is the minimum amount she would be willing to accept (WTA) to forgo the improvement.

Generally speaking, in valuing non-market commodities, economists do not expect \( CV \) and \( EV \) to be equal, and they certainly do not have to be in that case of a lost dog. The difference between \( CV \) and \( EV \) also sheds light on why a dog or a cat or any other pet is not a non-market commodity.

Why the difference in \( CV \) and \( EV \)? It is because there is a possibility that there is no amount of money that could possibly be enough to offset the loss of pet in terms of an individual’s preferences, such that there may not be an \( |EV| \leq I_0 \) that equates the two sides of the second equation above. On the other hand, the same individual’s willingness to pay is bounded by their income, so the \( |CV| \leq I_0 \) for \( (S_0 \text{ to } S_1) \) [Morey, 2003].

\[
V(I_0, S_0) < V(0, S_1), \text{ therefore for } (S_0 \text{ to } S_1): \quad |CV| \leq I_0 \text{ and } |EV| \leq \infty.
\]

Notice that \( |EV| \) is not bounded by anything except by how much an individual is grieving. The amount is determined completely by individual preferences.

The divergence between \( |EV| \) and \( |CV| \) is consistent with Michael W. Hanemann’s explanation of why such a value divergence occurs and by how much. By recognizing that substitution effects have an important role, Hanemann demonstrated that the divergence can range from zero to infinity, depending on the degree of substitution between goods and given a positive income elasticity [Hanemann, 1991]. In other words, if the lost dog can be easily replaced by another, the individual’s \( |EV| \) will not be as high
as for someone who has just lost an irreplaceable companion in life. In the latter case the fact that a lost dog is a non-market commodity becomes clear.

Hanemann showed that one should only expect convergence of WTP and WTA value measures when the good in question has a very close substitute. When the good has an imperfect substitute, a value divergence will exist and will expand as the degree of substitution decreases (the more irreplaceable the dog, the higher will be the |EV|) [Shogren, 1994].

Another explanation for the difference in WTA and WTP, favored by some psychologists, is that there is a basic fallacy in the way economists model the valuation of commodities, and the ownership itself makes a commodity more valuable, resulting in a high selling price. This has been called the “endowment effect” [Davis, 1993]. The endowment effect describes the fact that people demand much more to give up an object than they are willing to spend to acquire it. This phenomenon - that people attach higher values to goods if they are in their possession - is very well established in the experimental literature.

Of course the two explanations are tightly related. The reason someone feels that no amount of money could compensate them for the loss of their dog is that they have come to know and love the dog (endowment effect). For them, their dog is not just a dog; the dog is part of a family and cannot be simply substituted for another at a pet store. Money can’t buy love. A dog, in this sense, ceases to be a market good whenever the dog is loved by the owner. The more love, the more the dog is like a non-market commodity and the harder it is for the owner to find a substitute.
One of the most commonly asked question following the death of an animal companion is, "When will I know when it's time to get a new companion?" And according to many veterinary experts this is a good question to ask, particularly before the new animal is acquired. Unless the individual’s material, social or health situation has radically changed, there is a great chance that they'll acquire another critter.

Some books and websites offering grieving guidance even offer some guidelines to follow. One states that “if you find yourself wondering about a ‘replacement’ animal then you are not ready” [Poses]. The reason is because every animal and human-animal bond is unique it cannot by its very nature be replaced or duplicated. It just is not possible to clone the lost relationship. Instead, a new bond must be created after the grieving process is over. Viewed in this way, there is no amount of money that could possibly ever compensate someone for their dog because the animal and the services that it proved are ultimately unique and can not be replaced neither by money nor by another animal.

So, let’s come back to the question whether it is possible to estimate a person’s CV or EV after a loss of a dog?

Perhaps it is possible if we can estimate an individual’s willingness to pay to get their dog back by using the monetary reward sometimes indicated on “lost dog” signs. Such an estimate could approximate the person’s willingness to pay to get their dog back or the |CV|. The estimate to pay would also be a better than willingness to accept (EV) because it has a reasonable bound $I_0$.

However there is a problem with this approach. The decision to indicate a particular dollar amount is a strategic one and it depends on many different factors. For
example, the vast majority of ‘lost dog’ signs do not indicate any specific dollar amount at all, so presumably the owners who do indicate a reward are hoping to provide an extra incentive (complement to any intrinsic motivation the person may have) to whomever may see the sign to look for the dog or to return it if they already have it [Bénabou, 2003].

The dollar amount indicated on such signs varies dramatically across breeds of the dogs, geographical location of the owner and where the sign is posted, income-levels of the owner and those around her, average size of homes, availability of substitute pets (like cats) and various services a dog might provide (guarding, pulling a sleigh, etc). How an individual should determine this amount is a game theoretic question, beyond the scope of this paper.

The owners who do not put any specific amount on their sign (and just say “reward”), do not want to enter into a contract before they know more about the circumstances under with their dog was returned. And signs that do indicate a particular dollar amount reflect the owners’ best guess at what the minimum amount should be to express gratitude for the return of their dog and provide an incentive to look for it, given the above list of variables.

So the reward amount would in fact only approximate a lower bound in estimating the individual’s maximum willingness to pay to get her dog back. In the end, we can only know the upper bound (income level of the individual) and the lower bound (the dollar amount indicated on the sign) when estimating the consumer surplus of the individual. The actual number would only depend on how much the individual values their dog relative to everything else they have. And to approximate that number correctly, we would need nothing less than a good measure on love.
Bibliography

http://www.ddfl.org/petloss.htm

http://www.humananimalbondtrust.org/missing.html

Prof. Edward Morey’s ECON4545 class notes online
http://www.colorado.edu/Economics/morey/4545/4545lnts.html


http://www.humananimalbondtrust.org/consider.html
