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The Less We Love a Woman, the More She Likes Us: Pushkin's Observation Explained

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Abstract

Alexander Pushkin, the most famous Russian poet, made this observation in "Eugene Onegin", his novel in verse which is most known to non-Russian readers via Tchaikovsky's opera. This observation may not be an absolute truth – there are counterexamples – but the fact that it is still widely cited shows that there is some truth in this statement. In this paper, we recall the usual utility-based explanation for a similar statement, and propose a new explanation, which is even more fundamental – it is on the biological level.

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1 Pushkin's Observation: A Brief Reminder

Who was Pushkin. Alexander Pushkin (1799-1837) is the most famous Russian poet. Russian people love his poems, they know many of them by heart, journalists cite them when appropriate – and readers understand what these citations refer to. This is like citing the basic Shakespeare quotes in English.

Most of Pushkin's poems are very melodic, so it is not surprising that many of them have been put to music, including many of his love poems. One of his

most famous novels in verse – "Eugene Onegin" – was turned into an opera by the famous Russian composer Tchaikosvky. This opera is what most people around the world know about Pushkin.

Pushkin's observation. Many lines from "Eugene Onegin" (and other Pushkin's poems) paraphrase (or even cite verbatim) folk sayings and proverbs. Vice versa, many lines from "Eugene Onegin" became, in fact, Russian proverbs.

One of these lines is – in literal (non-rhyming) translation – "The less we love a woman, the more she likes us". This phrase is often cited, both with respect to a man loving a woman – and a woman loving a man. People also often cite a statement that seems to follow from the above one: the more we love a woman, the less she likes us.

The fact that this statement is cited so frequently is a good indication that, while it cannot be accepted as a universal law (e.g., Romeo and Juliet both passionately loved each other), there is some truth in it, it is a good empirical observation.

Natural question. So, a natural question is: how can we explain this empirical observation?

What we do in this paper. In this paper, we recall the usual utility-theory explanation, and then provide an even more fundamental biological explanation.

2 How This Observation Is Explained Now: Utility-Theory Approach

Utility: a brief reminder. When we make decisions, we select an alternative out of several ones. Selections of a rational person should be consistent: if A is preferred to B, and B to C, then A should be preferred to C. This transitivity means that we have a linear (total) order on the set of all alternatives.

Such a linear order can usually be described in numerical terms, by assigning, to each alternative, a number called its *utility*, so that a better alternative is always assigned a larger number. Then, we always select an alternative with the largest possible value of utility; see, e.g., [5, 8, 9, 10, 11].

How to describe people's attitude towards each other. When we select an alternative, we do not just take into account its consequences for us, we also take into account how this selection will affect other people. We do not want to hurt people we like, and we may not want to benefit people we don't like.

Since we describe preferences in terms of utilities, the fact that our preferences are affected by other people's feeling means that our utilities are also

affected by other people's utilities. In other words, if we denote by $u_i^{(0)}$ the utility of the i-th person that does not take into account other people, then the actual utility u_i is not exactly equal to $u_i^{(0)}$: it also depends on the utilities u_j of other people: $u_i = f_i\left(u_i^{(0)}, u_j, \ldots\right)$.

The effect of other people's emotions is usually much smaller than the feelings of the person him/herself – saints are rare – so in the first approximation, we can expand this dependence in Taylor series and keep only terms linear in u_j in this expansion. If all other utilities are 0s, then we should get $u_i = u_i^{(0)}$, so we get

$$u_i = u_i^{(0)} + \sum_{j \neq i} \alpha_{ij} \cdot u_j, \tag{1}$$

for some coefficients α_{ij}; see, e.g., [1, 2, 3, 4, 6, 7, 12, 13, 14].

Case of two people. For two people, the formula (1) has the form:

$$u_1 = u_1^{(0)} + \alpha_{12} \cdot u_2; \tag{2}$$

$$u_2 = u_2^{(0)} + \alpha_{21} \cdot u_1. \tag{3}$$

Suppose that two people have positive feelings towards each other. In terms of the above equation, this means that happiness of one of them makes the other person happier too, i.e., that $\alpha_{12} > 0$ and $\alpha_{21} > 0$.

Substituting the expression for u_1 from the formula (2) into the formula (3), we conclude that

$$u_2 = u_2^{(0)} + \alpha_{21} \cdot \left(u_1^{(0)} + \alpha_{12} \cdot u_2\right), \tag{4}$$

hence

$$u_2 \cdot (1 - \alpha_{12} \cdot \alpha_{21}) = u_2^{(0)} + \alpha_{21} \cdot u_1^{(0)}$$

and

$$u_2 = \frac{u_2^{(0)} + \alpha_{21} \cdot u_1^{(0)}}{1 - \alpha_{12} \cdot \alpha_{21}}. \tag{5}$$

Similarly,

$$u_1 = \frac{u_1^{(0)} + \alpha_{12} \cdot u_2^{(0)}}{1 - \alpha_{12} \cdot \alpha_{21}}. \tag{6}$$

So, if both people love each other strongly, e.g., when Romeo is caring more about Juliet than about himself (and vice versa), then $\alpha_{12} > 1$, $\alpha_{21} > 1$, and so, even if all the things are positive $u_1^{(0)} > 0$ and $u_2^{(0)} > 0$, both utilities u_1 and u_2 become negative – we have a disaster.

To avoid such a disaster, it is important to have $\alpha_{12} \cdot \alpha_{21} < 1$. So, if α_{12} increases, i.e., if Person 1 starts loving Person 2 too much, it may be reasonable to appropriately decrease the value α_{21} – i.e., for Person 2 to become less loving; see, e.g., [2, 3, 10].

Remaining problem. This explains the seeming consequence of Pushkin's observation – that the more we love a woman, the less she likes us. But how about the original Pushkin's observation?

In this paper, we provide a more biological explanation of both statements.

3 New Explanation

Main idea. From the biological viewpoint, the goal of love and procreation is to spread our genes. From this viewpoint, the better the partner's genes, the more changes that our offspring will survive and his ancestors will survive – and thus, that our genes will spread.

In view of this idea, let us analyze the situation. From the viewpoint of natural selection, healthiness of genes of two people can also be always compared to each other, so we also have a linear scale – which can thus be described by a number h.

In situations when we have a balance of males and females – which is usually the case, unless we trace the immediate consequences of a big war — people with highly healthy genes will mate with each other, people with second highly healthy genes with each other, etc. As a result, two mating people will have approximately the same health level $h_1 \approx h_2$.

Of course, this equality is approximate. When selecting a mate, we take into account not only the biological genes, but also other things. So, a person can compensate for his slightly less healthy genes by offering something else – namely, many tokens of love.

Here comes an explanation. If $h_1 \ll h_2$, then Person 1 has to apply a lot of efforts to woo Person 2. Vice versa, if $h_1 \approx h_2$ or $h_1 \gg h_2$, no such big effort will be needed.

This sounds reasonable, but this has natural consequence: if Person 1 applies a lot of effort to woe Person 2, this probably means that $h_1 \ll h_2$ and thus, Person 2 will be not very interested in mating with him. On the other hand, if there are few efforts, this means that probably $h_1 \approx h_2$ or even $h_1 \gg h_2$ – so Person 2 will be much more interested. In Pushkin's words (to be more precise, in their English version), the less we love a woman, the more she likes us :-)

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