Mixed Signals in Courtship as Suboptimal

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A friend approached me recently to ask for advice regarding her love problems. Though I was more adept in dealing with "rational" problems, I nonetheless gave her, on hindsight, a valuable advice. In this short article I shall attempt to model her problem and my advice to her. I anticipate two types of criticisms. First, I can already hear the voices of people who view the idea of using economic methodology on problems dealing with emotions as ultimately absurd. Second, some hardcore economists and intellectuals might criticise me for dealing with such a trivial topic. To address these, all I can say is that I am doing this for fun and for intellectual exercise. Furthermore, I find this exercise as helpful in understanding the first topic in EC4152 (Macroeconomics III) and especially the first question of the first tutorial. So there: I have enough justification for writing this article.

Basically, her problem is she is sending the wrong signals to the guy who is courting her. According to her, she likes the guy but she does not want to appear "too easy." Thus, what she does is to send "mixed signals." For example, given the usual "Hi!" of the guy, she usually gives two responses. First she can smilingly return the greeting. However, on some days, she just gives back a snobbish glance.

My main objective here is to show that given that the utility of the girl is maximised when she gets the guy and that appearing as "too easy" implicitly enters as a decrease in her utility, it is optimal for her to send consistently small signals as opposed to sending "mixed signals" of different and sometimes of great magnitude. I shall use the model in Lucas (1973) to explain this.

Assume that G_t is the true signal that my friend wants to send (i.e. a positive signal). Let $B_t = G_t + z_t$ denote the signal that the guy receives. As one can see, the interpretation that the guy gives to the girl's signal at time t is subject to a quasi-random error $z_t \sim N(0, \sigma_z^2)$ which is IID. Though deterministic from the point of view of the girl, the guy considers G_t as stochastic since it reflects the distribution of women of different tastes. I assume that $G_t \sim N(g, \sigma_g^2)$ and is IID. Note further that both stochastic terms (z_t and G_t) are assumed to be independent of each other and that B_t and G_t are joint normal.

By the properties of bivariate normal distributions, it can be easily shown that $E[G_t \mid B_t] = \theta g + (1 - \theta) B_t$ where $\theta = \sigma_z^2 / (\sigma_g^2 + \sigma_z^2)$. This can be understood in the following manner. The guy interprets or formulates his expectation of the "true" feelings of the girl (true signal G_t) given the information of the distorted signal through a function that weights g and B_t. Assume that g represents "neutral feelings" (which can be understood as the average response of most women he courts; it is neither a yes nor a no—a noncommittal signal). Therefore, as θ increases, the guy gives more weight to g and thus interprets the signals as a "neutral feeling." However, as t increases, the cost of waiting for the guy increases and therefore it would be optimal for him to move on to a different girl. However, if θ is small, then he will assume that the signal he perceives is the true signal that she wants to send and thus, if he perceives good signals, then he will have the incentive to continue courting. In line with this, note that θ is increasing with σ_z^2 (we are concentrating with the error z_t rather than the stochastic term G_t since the latter is influenced by the distribution of women who finds the guy acceptable while z_t is influenced by the whim of the specific girl that he is currently courting). Therefore, if the guy feels that B_t is a reliable and consistent signal and that if it reflects a positive signal (we assume that the girl likes him), he will continue courting and the probability of a match would be greater. Thus, it is not important for the girl to send "extraordinary" or special positive signals (which decreases her utility as we have assumed). Rather, it is sufficient for her to send clear and consistent positive signals, even though small in magnitude, to have a match with the guy and consequently maximise her utility.

In conclusion, my advice to people who are experiencing the same dilemma as what my friend had gone through is you do not need to impress the guy who is courting you through surprisingly "large" reactions which somehow tend to scare most men. You just need to be consistent with your response...

Reference:
Lucas, Robert E. "Some International Evidence on Output-Inflation Trade-Offs." American Economic Review September 1973.