

1.

1) If Theory I were correct, the corresponding social policy could be to establish a punishment mechanism for transgression based on "timely reward" and "moderate punishment". For example, you should receive both spiritual and material rewards for charitable actions and charitable actions, while mild deviance (rude behavior that disturbs other passengers on public transportation) requires warnings and certain penalties, and severe criminal behavior should be punished based on the severity of the crime. According to the disorganization theory, the normal society is strictly organized and structured, and the relationship between each of its components is coordinated. In a disorganized society, the organizational structure of the society is fissional, and some organizations are disconnected. Traditional Rules, values, and social structures collapse, and society is in a state of "out-of-standards." Therefore, the solution to the problem of deviance is to rebuild social norms and establish clear rules and regulations.

2) If Theory II were correct, the corresponding social policy could be to establish a social psychological service agency, to provide citizens with channels to express their dissatisfaction and provide corresponding countermeasures, while respecting reasonable acts of resistance to authority.

3) If Theory III were correct, the corresponding social policy could be to set up an interactive public feedback mechanism. Policy makers need to understand the thoughts of the vast majority of people through this mechanism, and, improve decision-making and system formulation accordingly. Because society provides legal goals for everyone, but in the arrangement of social structure, it does not provide everyone with legal means to achieve the goals, which makes some people frustrated and nervous. This frustration and tension may lead people to go astray in the form of resistance to authority in order to obtain those legitimate goals. For example, many revolutionary behaviors can be caused by the dissatisfaction of the people at the bottom of the current life. They gathered to fight against the government to fight for reasonable rights and interests. In this case, transgression should be treated differently, reasonable and legitimate protests should be included in policy considerations, but violations need to be punished accordingly.

4) If Theory IV were correct, the corresponding social policy can be paying attention to subcultural groups, weakening class polarization, alleviating social discrimination and poverty, and establishing a relatively equal social system. The subculture theory believes that in close contact, groups form cultural labels that are different from the mainstream culture. For example, poor people form poor subcultures and drug users form drug subcultures. Sometimes society demands the various classes of the society with the middle-class standards without distinction. But the various conditions of the masses from the lower society may fail to meet these requirements, which may cause frustration and deviation. At this time, increasing social welfare, especially paying attention to educational equality and material support at all levels, will become a solution to this social problem.

2.

a) People often do things at the last minute might be true probably due to the following reasons: task management factors, time management factors, personality factors, and emotion-related factors. This kind of act can be described as procrastination. Procrastination is traditionally seen as an act of evading a task or making a decision in a deferred manner, essentially a tendency to postpone what should be done. Tasks and time management have an important influence on the control and planning of self-action. Individual's task, time and emotional management ability are significantly related to school and work.

1. Among the task-related factors, the nature of the task itself and people's corresponding perception play a delaying role. For example, people are more inclined to accomplish more interesting things than boring tasks, and setbacks can make it difficult for individuals to focus on the corresponding tasks, causing delays (Blunt, 2000). Personal corresponding perception refers to the degree to which a task is worth pursuing for an individual. The smaller the personal meaning, the less the individual's desire to perform the task, resulting in more delay. In other words, if there is not enough motivation, people are likely to start delaying.

2. Time management is an indispensable part of modern people's work. Time management has an important influence on the control and planning of self-action. Individual time management ability is significantly related to school and work. If individuals have better time management capabilities, they will be more efficient in executing plans.

3. Personality-related factors include responsibility, self-esteem, and fear of failure. For example, individuals with a high sense of responsibility and high self-esteem generally want to delay less, while individuals who are afraid of failure will delay avoiding failure (Steel, 2007).

4. Emotion-related factors also affect procrastination to a certain extent. For example, bad emotions will increase procrastination, and procrastination will in turn worsen bad emotions (G. Ainslie, 2001) .

b) I'll adopt the multiple regression model to shows the factors that influence procrastination. My model looks like following:

$$y_i = \beta_0 - \beta_1 X_{taskattraction} - \beta_2 X_{timemanage} - \beta_3 X_{pospersonality} + \beta_4 X_{negpersonality} - \beta_5 X_{posemotion} + \beta_6 X_{negemotion} + \varepsilon$$

In particular, y_i is dependent variable (the possibility that an individual may have procrastination), x_i are explanatory variables, β_0 is y-intercept (constant term), β_p are slope coefficients for each explanatory variable and ε is the model's error term.

c) I'll adopt the interaction model as my alternative model. And the model looks like following:

$$y_i = \beta_0 - \beta_1 X_{taskattraction} - \beta_2 X_{timemanage} - \beta_3 X_{pospersonality} + \beta_4 X_{negpersonality} - \beta_5 X_{posemotion} + \beta_6 X_{negemotion} - \beta_7 X_{pospersonality} X_{posemotion} + \beta_8 X_{negpersonality} X_{negemotion} + \varepsilon$$

In particular, y_i is dependent variable, x_i are explanatory variables, $X_i X_j$ are the interaction variables, β_0 is y-intercept (constant term), β_p are slope coefficients for each explanatory variable and ε is the model's error term.

d) Prediction from c):

1. My model assumes that there is a negative correlation between time management capabilities and the possibility of delay. But in reality, these two may show a positive correlation. Active procrastinators are a positive type of procrastinator in the real world. They like to work under pressure, making thoughtful decisions during delays, thus implementing plans in a timely manner. They deliberately delay in order to focus on other important tasks at hand. It is worth noting that relevant research results show that although the procrastinator is the same as the procrastinator in the degree of procrastination, they are more similar to the non-procrastinator in the purposeful use of time, time control, and self-efficacy.
2. My model assumes that there is a negative correlation between the attractiveness of the task and the possibility of delay. But in reality, these two may show a positive correlation. This is related to the workload in daily life. At the stage of relatively concentrated attention, people may first complete the more difficult and boring tasks first, and then finish the relatively easy and attractive tasks when the attention is reduced. This is also a strategy for handling multiple tasks.

Prediction from c):

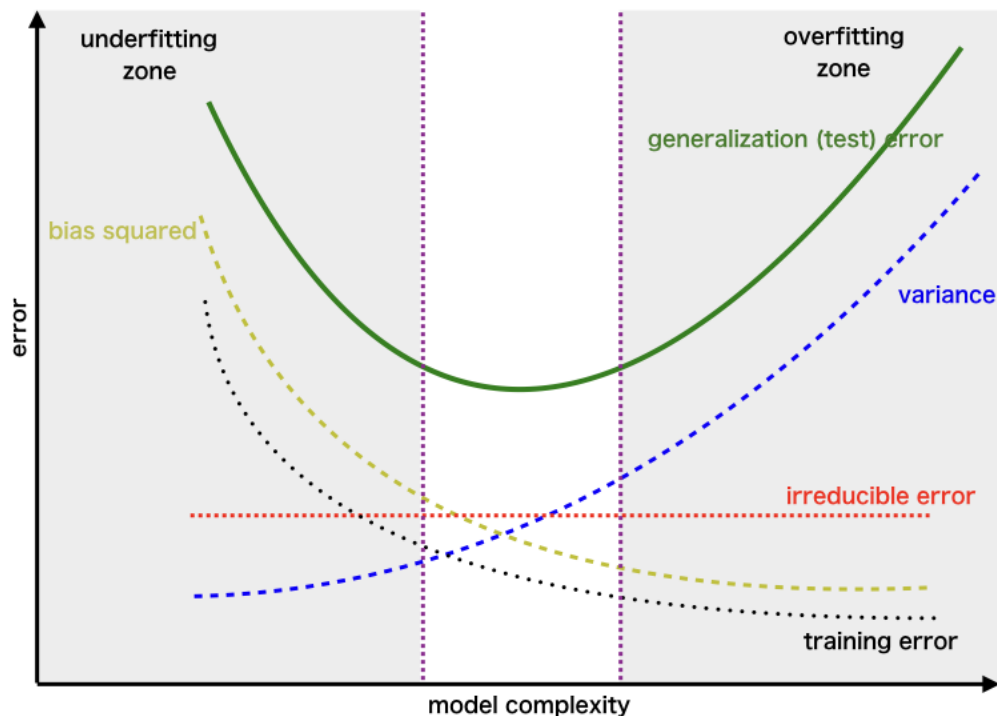
1. My model assumes that there is a positive correlation between negative emotions and the possibility of procrastination. In reality, the two are mostly positively correlated. Procrastination has long been regarded as maladaptive and unhealthy behavior, but recent studies have shown that procrastination is not absolutely negative and that it has positive adaptations. Scher and Osterman suggested that procrastination may be a need to manage one's emotional state. When some situations cause procrastinators to experience more symptoms of anxiety, control-oriented tasks can prompt procrastinators to focus their attention on positive emotions. Individuals may therefore be trying to manage their trait anxiety through procrastination. In this sense, procrastination is seen as an intentional or unintentional strategy. Procrastinators use this strategy to manage negative emotions or to find new problem solutions.
2. My model assumes that the positive effects of positive emotions and positive personality have a negative correlation with the possibility of procrastination. But in reality, these two may have a positive correlation. For the reasons I mentioned above, when the task is heavy, people may consciously delay in assigning the task.

3.1

- a) The flexible statistical learning method performs better than the inflexible method.
Reason: The flexible method will fit the data better than the inflexible model. The large sample data set enables the flexible method to fit more parameters and small number of predictors limits model variance.

- b) The flexible statistical learning method performs worse than the inflexible method.
Reason: According to the definition of overfitting, if a statistical learning method contains too much parameters that can't be justified by the data, this method will fail to fit additional data or predict future observations. In this case, the number of predictors p can't be fully explained by a small number of observations, the flexible method will overfit.
- c) The flexible statistical learning method performs better than the inflexible method.
Reason: The flexible method is often used to describe and predict non-linear relationships. It uses a curve to model the relationship between each predictor and the response. The flexible method can give a more accurate prediction in non-linear relationships with more degrees of freedom.
- d) The flexible statistical learning method performs worse than the inflexible method.
Reason: overfitting occurs when a model tries to predict a trend in data that is too noisy. If there are many irrelevant information in the data set (in this case, the variance of the error is extremely high), the flexible method is more likely to fit to the noise in the error terms and increase irreducible error and variance, thus giving inaccurate prediction.

3.2



1. bias will decrease with increasing model complexity (higher flexibility). Bias error is error from wrong model assumptions (oversimplifying model assumptions). In the real world,

it's difficult to find a real-life problem has a simple linear relationship, and so using a simple model will result in some bias in the estimate of 'f'. The higher the model complexity, the more factors are taken into account, which yields a better fit.

2. Variance will increase with increasing model complexity (higher flexibility). Variance error is error from sensitivity to small fluctuations in training data (overcomplex assumptions). As the model complexity increases, the model is more likely to overfit. And a small change in the data may have more effect on the parameter estimates.
3. Train error will decrease with increasing model flexibility (higher flexibility). The higher the model complexity, the lower MSE on the training data, which yields a better fit.
4. Test error will have a U-shaped curve with increasing model flexibility (higher flexibility). The test error is the error in unseen data. Because it reflects the interaction between variance, bias and irreducible error. Because the irreducible error always stays the same. Before the turning point, the bias error is large and the test error decreases with higher model complexity; after the turning point, the variance error is larger than the bias error, so the test error increases with the with higher model complexity.
5. Irreducible error is a constant and stays the same with increasing model complexity. Irreducible error is error inherent noise in the problem itself. It defines the lower limit; any model will at least have irreducible error.

Reference:

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