THE TRAFFIC LIGHT HYPOTHESIS

A Model of Human Decision Making

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Section 1: Introduction

The purpose of this short essay is to introduce the Traffic Light Hypothesis (TLH), the Cognitive-Affective-Motivational Decision Process (CAM) model, and provide some clarifications with regard to the concept of Predominant Hedonism.

My views have evolved somewhat along the way, and I want to update and clarify my thinking in the form of a new essay. I have written about the concept of Predominant Hedonism in my previous essays, and it was the central concept in the ebook I produced with the help of AI tools. The ebook also introduced the Traffic Light Hypothesis. Both of these concepts need some clarification, and I also want to introduce the Cognitive-Affective-Motivational Decision Process (CAM) model, which models human decision-making, taking into account both the cognitive and affective factors affecting decisions. The CAM model culminates in a Traffic Light decision, which takes into account the internal and external balances of the decision-maker, and also includes a third factor, expectancy, to provide a full account of the Traffic Light Decision (TLD).

Thus, the decision taken in the end consists of three factors: the internal affective state (internal balance), the expected external gains and losses (external balance), and the efficacy and outcome expectations (expectancy). This model brings together some ideas from affective psychology, economics, and motivational psychology.

The plan of the essay is first to clarify the meaning of the concept of Predominant Hedonism. This is done primarily by clarifying the meaning of internal and external motives. The internal motives refer to valence and the affective side of decision-making, while external motives refer to material and social gains and losses in the external world. I have used these internal and external concepts previously quite liberally, and I want to clarify the meaning of

Predominant Hedonism.

After clarifying the concept of Predominant Hedonism, I will introduce a table that clarifies the meaning and relationship of internal and external balance in the Traffic Light Hypothesis. The discussion of the TLH in the ebook was somewhat limited in this respect. The table I will introduce will show that the internal and external balances will produce a total of thirteen different traffic light scenarios. There are 5 green, 5 red, and 3 yellow outcomes, so that the decision taken in the end is more nuanced than a simple internal vs external evaluation.

With the TLH clarified, I will introduce the Cognitive-Affective-Motivational Decision Process (CAM) model that models the process of individual decision-making. The final decision, the Traffic Light moment, is a combination of internal and external balances plus a third factor, the expectancy evaluation. The CAM process starts with the sensory input that is divided into two processing streams: the affective and the cognitive, which interact during the planning process.

The affective processing stream involves evaluations regarding valence and emotions. The cognitive stream consists of seven types of cognitive evaluations that may be performed during the planning process. The planning process itself consists of the identification of interests, forming goals and intentions, and deciding on the means and actions to be taken. This process culminates in two kinds of motivations. First, there are the internal motives of seeking experiences that are based on the affective evaluation of the situation. Secondly, there are the external motives related to social and/or material gains that the situation offers. This balance between internal and external factors provides the main ingredients of the decision, but they are not enough. There must be a positive expectancy that is divided into two types of evaluations: the efficacy expectation regarding the action, and the outcome expectation regarding the outcome of the proposed

action. If these evaluations turn out to be negative, the action will not be taken, and the planning process has to be started from the beginning, or the whole decision must be abandoned.

So that, in a nutshell, is the plan of this essay. I will try to be succinct in my explanations and provide only the necessary core ideas and clarifications, so that the main ideas regarding these concepts can be illuminated. Most of the details have already been provided in my previous essays and the ebook, but this essay provides some clarifications and updates my thinking on these issues.

Section 2: Predominant Hedonism

In this section, I will try to clarify the meaning of the concept of Predominant Hedonism. I have defined it quite liberally in my previous essays to refer both to experiences and gains and losses. In this essay, we will separate these uses of the concept because it helps to clarify the Traffic Light Hypothesis (TLH) in return.

Predominant Hedonism can be regarded as a derivative of hedonism and egoism. Psychological egoism is the view that the ultimate motive of human action is self-interest. Psychological hedonism is the view that the ultimate motive of human action is to approach pleasure and avoid pain. In a sense, hedonism is personal, referring only to internal states, while egoism also has a social dimension because of the use of the concept of self-interest in the definition. Self-interested action is something that is taken without regard for the interests of other actors.

But the problem with standard egoism and hedonism is that they do not reflect "the real world," in which people sometimes accept minor pains for future gains, or they act altruistically contrary to the egoistic motive. Gregory S.

Kavka has provided a way out of this dilemma with his concept of "Predominant Egoism": people are egoists predominantly but not always (Kavka 1986, 64-80). So we will assume right from the start that people are predominant egoists and hedonists, but we also need a theory that explains their decisions in different situations and contexts, and the Traffic Light Hypothesis provides that.

We will also have to adjust to a minor change in vocabulary. Standard hedonism assumes that people seek pleasure and avoid pain. This use of words is far too restrictive for our purposes. We will adopt the choice of concepts proposed by Rozin (Rozin 1999, 112) and assume that people seek "positive experiences" and avoid "negative experiences". Experience here refers to all kinds of experiences and mental states that the person may experience, not just pleasure or pain.

Then there is also the question of hedonism versus rational choice. Are people affective hedonists or rational (economic) utility maximizers in the end? Cabanac & Bonniot-Cabanac (Cabanac & Bonniot-Cabanac, 2007) have shown that people might be a bit of both. Many decisions are taken with hedonistic calculus, but there is also room for rational choice. And we need a hypothesis that tells us when people resort to hedonistic and/or rational calculus. And we will provide such a hypothesis. Peter Carruthers (Carruthers 2024) also sees that "hedonic valence is the currency of decision making," according to recent research findings.

Rational Choice theory has been extensively criticized by Behavioral Economists who have shown that people in real situations are not so rational after all. We will assume that people are "bounded rationalists" in some respects (Simon 1955 & 1957) when we talk of rationality in decision-making. We will assume that people are not perfect calculators with perfect information, but that they will do their best with their available mental resources to evaluate the situations that they face externally. The main difference between hedonic and

rational choice is that hedonic choice is based on hedonic valence, which is an affective evaluation, while rational choice is based on cognitive evaluation of different types of "facts".

So, what exactly is Predominant Hedonism? Before answering this question, we need to clarify the meaning of internal experience and external existence. Internal experience refers to the cognitive-affective evaluation of the situation. That is, it is the subjective evaluation of the situation by the actor, and hedonic valence and emotions are the currency of this mode of thinking. Internal experience (or balance) is the positive or negative "feeling" that the actor forms of the situation, and it is primarily hedonic.

External existence, on the other hand, refers to the material, biological, and social external world and environment of the actor. Physical pleasure and pain are internal hedonic experiences, but they are derived from interactions with the external world. So seeking pleasure is also an external endeavor. The main idea to internalize, though, is that the external world refers to material and social potential gains and losses, and that the evaluation of these potential gains and losses may be partly hedonic and partly rational.

From the point of view of the decision-making model introduced in this essay and the Traffic Light Hypothesis, it is important to know the difference between these internal and external factors. This understanding will form part of the theory that explains when people will choose primarily egoistically and hedonistically, and when they will deviate from this standard.

And in the end, Predominant Hedonism refers to this internal mental affective environment and not the external material or social environment. People will seek external gains and avoid losses, and they will evaluate their situations both hedonistically and rationally, but in the end, they will have three internal motives that decide their choices and actions, and these three internal motives that define Predominant Hedonism are:

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- Seek positive experiences
- Avoid negative experiences
- Accept negative experiences

These three internal motives define Predominant Hedonism, and they are the ultimate drivers of human action. They are rooted in the calculus of hedonic valence or the valuation of things as positive or negative from the point of view of the actor. People will thus form relations to various objects, processes, and events in the external world. In the external world, there are gains and losses, but internally, only valenced experiences.

It is quite easy to explain the seeking of positive experiences/gains and the avoidance of negative experiences/losses, but the acceptance of negative experiences and losses requires an explanation. I will give this explanation piece by piece as this essay progresses. The main idea is that there are five major reasons for accepting negative experiences and/or external losses. These reasons will not suffice by themselves as an explanation of people's choices to accept these negative experiences. But together with the evaluation of the external situation, the person will form a total balance between the internal and external balances experienced in the situation, and this total balance explains whether the person will accept external losses or internal negative experiences.

The five major reasons for accepting negative experiences or external losses are:

- Delayed gratification
- Altruism
- Adherence to social norms
- Protecting one's identity
- Punishing others for perceived injustices

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Delayed gratification refers to a situation in which a person will accept some negative experiences for larger future positive experiences and/or external gains. Altruism can be explained by the fact that a person may accept a personal loss to enable another person to gain, and this loss is overridden by the internal positive experience of the person. Adherence to social norms may cause people to accept negative experiences because the external social gain outweighs these internal negative experiences. A person may also act to protect one's personal identity externally and accept internal negative experiences because of that. And finally, people may accept external losses just to punish an unfair person and derive positive internal experience from that.

The key lesson to be learned from this section is that Predominant Hedonism refers to the internal hedonic motivational states of the actor. These states are: seek positive experiences, avoid negative experiences, or accept negative experiences. On the other hand, seeking gains or avoiding losses belong to the environmental considerations of the actor. They are factored into the internal evaluation of experiences, but they are a distinct phenomenon. Now we are in a position to think about the internal and external balance of the person in a situation.

Section 3: Internal and External Balance

Internal and external balance provide us with the first step toward understanding the choices people make. It does not fully explain the final decision to act, but it will give us the theory that explains when people will accept external losses or internal negative experiences.

Basically, the internal and external balance can be introduced with the help of a table:

Table 1. Traffic Light Hypothesis: Internal and External Balance.

Internal Balance	External Balance		
	A) Gains (+)	B) Neutral/No Loss (N)	C) Losses (-)
1) Positive Experiences (+)	+ / + Green	+ / N Green	+ > - Green + = - Yellow + < - Red
2) Neutral Experiences (N)	N / + Green	N / N Yellow	N / - Red
3) Negative Experiences (-)	- > + Red - = + Yellow - < + Green	- / N Red	- / - Red

+ = Positive Experiences/Gains
N = Neutral Experiences/No Losses
- = Negative Experiences/Losses

- Left sign denotes Internal Balance.
- Right sign denotes External Balance.
- Traffic Light: Comparison of Internal and External Balances.

Table 1 provides a way to understand the total balance between internal and external balance. Internal balance refers to the potential internal experiences, and external balance to the potential external gains and losses. The thing to notice is that in the end, it is the internal balance that is in the "driver's seat" and determines the total balance.

There are a total of 9 different balance scenarios, and a total of 13 different outcome scenarios in the table. The balance scenarios with only one outcome scenario in them are easy to understand. For instance, in the first cell where the

outcome scenario is "+/+ Green," both the internal and external balances point in the same positive direction, and the choice is easy. But there are two balance scenarios that contain three different outcome scenarios each, and in these cases, the person has to make an evaluation between the relative weights of external gains/losses and internal experiences.

In both balance scenarios, it is the internal weights that determine the outcome in the end. If the internal expected positive experience is greater than the expected external loss, then it is a green light and the person will choose the action. And if the expected internal negative experience is smaller than the expected external positive gain, then the person will choose to endure the negative internal experience, and the light is green.

So this is the theory in a nutshell that explains people's choices in various situations. People will make both internal and external evaluations of the situation. The external evaluations are about potential material and social gains and losses, and the internal evaluations are about the potential that these gains and losses have for providing the person with positive or negative internal hedonic experiences.

This is the formula that explains people's choices in various situations. But it is not the end of the story. People will also have to decide whether to execute these choices, and in the final stage of the decision-making, before the final Green, Yellow, or Red light, it is the expectancy evaluations that decide whether the person will execute the chosen option based on internal and external balance. This will be our next topic.

Section 4: The CAM Process

The topic of this section is the decision-making process in its totality, from the initial sensory experience to the Traffic Light decision and action. The CAM process is depicted in the following figure:
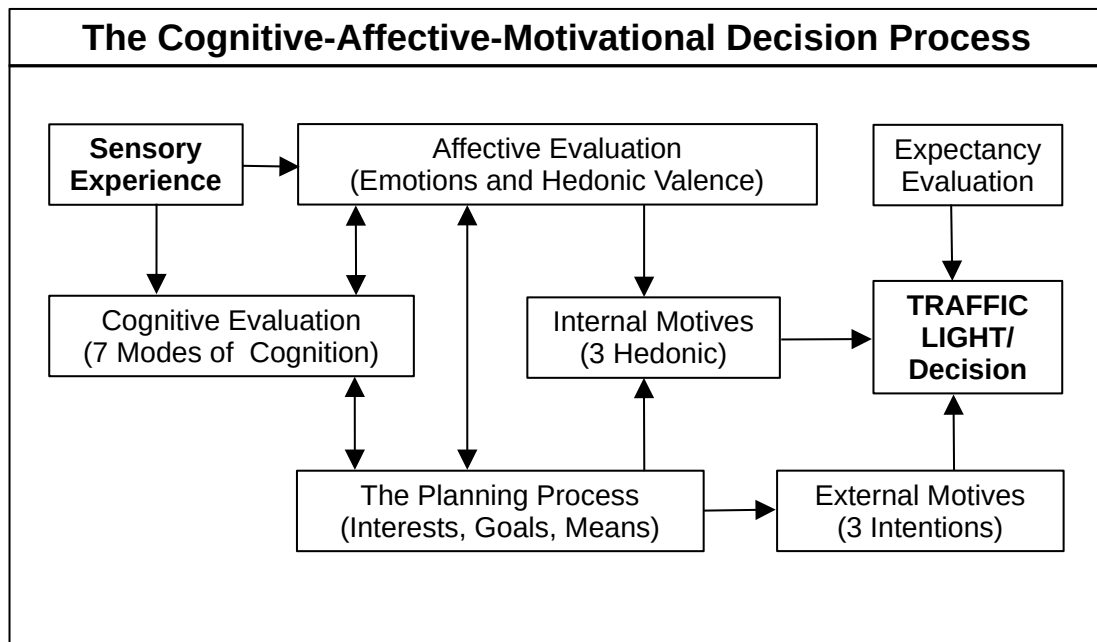

Figure 1. The Cognitive-Affective-Motivational Decision Process.

I will go through this figure step-by-step, but the key idea is that sensory experience is divided into two evaluative streams: affective evaluation and cognitive evaluation. These evaluation processes interact with the primary planning process, which is responsible for defining the person's interests, goals, and the means to pursue the chosen goals in the situation. These three dynamic processes produce two kinds of motives as output: internal hedonic motives and external motives related to possible gains and losses. This is the stage in the decision-making process in which the evaluation of internal and external

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balances is factored into the decision. And finally, in parallel to the evaluation of the balance between internal and external motives, there is the expectancy evaluation, which refers to the evaluation of the efficacy expectation and outcome expectation of the proposed action. With a Green Light and a positive expectancy evaluation, it's a "Go".

Let's walk through Figure 1 step-by-step. It all starts with sensory experience. There is something in the external world that requires attention, needs to be interpreted, and acted upon. The processing divides into two streams, which are the cognitive and the affective streams. The affective stream is the more primitive one shared with other species. All living creatures have approach and avoidance tendencies (Elliot & Covington, 2001), which enable them to survive in their environments. This affective stream of processing processes emotions and hedonic valence. It is basically the stream that tells the person whether something in the environment is good or bad from the person's point of view. This stream of processing enables the person to form relations to various objects, processes, and events in the environment.

The other stream is the cognitive one, and there are a total of seven modes of cognitive processing that may be activated during the evaluation process if need be. These seven modes are:

- Truths
- Valuations
- Behavior
- Intentions
- Affect and emotions
- Norms
- Justice and fairness

The hypothesis is that cognitive processing uses these seven cognitive modes to form the basic understanding of the situation. Evaluating truths involves evaluating the basic facts about the environment and the situation. This involves evaluations regarding the physical and biological material world. Valuations are closely related to the affective stream of processing, but this mode of cognition involves a fully conscious evaluation of the situation based on the person's interests.

All the other modes of cognition involve evaluating other persons, so that these modes are social in nature. Behavioral mode involves the factual evaluation of other actors' behavior, while the evaluation of intentions is concerned with the goals that the other persons in the situation are pursuing. Actors also evaluate the emotional states of other persons. And they evaluate whether other actors are following the accepted norms, or whether they are fair and just in their interactions.

The affective and cognitive streams provide the material for the planning process. The planning process itself is divided into three stages that overlap with each other:

- Defining interests
- Establishing goals and intentions
- Choosing the means to pursue the chosen goals

The planning process starts with the identification of the person's interests. Interests are here taken to mean those subjective evaluations about the situation that enable the person to define various objects, processes, or events as good, neutral, or bad. It is only based on these interests that a person may form goals and intentions, which is the next step in the planning process. And once the goals are established, the decision-maker may choose the means with which to pursue the goals.

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The thing to notice is that hedonic and rational processing interact during this whole process. Hedonic processing is based on the affective stream of processing, while boundedly rational processing is related to the cognitive stream of processing. Also, hedonic processing is more heavily involved in the early stages of the planning process. Interests are defined largely based on the hedonic mode of processing, while the choice of means is mostly based on the boundedly rational mode of processing. Both hedonic and rational processing are used throughout the whole process, but their relative significance varies during the process.

Now that the person has established goals and chosen the means to pursue those goals, it is time to make the final decision to act. This final decision, according to the Traffic Light Hypothesis (TLH), is governed by three factors: the internal and external motives plus the expectancy evaluation.

The internal motives are defined by Predominant Hedonism, while the external motives are defined by the possible gains and losses in the situation. The person's goals, intentions, and preferred means provide the way to understand these internal and external motives. And once these motives are formed, the person must make an evaluation regarding the internal and external balance in the situation.

Once the total balance is evaluated and the person has a "Green Light" to go on and pursue the decision, there must be a final expectancy evaluation. Basically, the person evaluates both the efficacy expectation and outcome expectation in the situation. The first evaluation is related to the possibility of executing the decision with the chosen behavior. This is the "Can I do it?" question. And the second evaluation is related to the probability of achieving the chosen goal with the proposed behavior. This is the "Will it work?" question. (Reeve 2005, 226-228) If the answers to these questions are positive, then the person may make a positive decision and act based on it.

The CAM process thus involves two fundamental processes. The first is the evaluation and planning process, and the second is the final decision-making process. Both are related to each other and may overlap with each other in various ways. Figure 1 is just a schematic way of describing the total process. And both hedonic and boundedly rational evaluation processes are involved with this totality of processing.

So, that is the Cognitive-Affective-Motivational Decision Process (CAM) in its totality. At the moment, this is just a hypothesis that needs to be experimentally verified. But there is a substantial body of psychological and other research that has accumulated during the years, and which points in this direction.

It seems that when people make decisions, they are both hedonic and boundedly rational in various proportions. They also process the incoming stimuli and information via two streams: the affective and the cognitive. And finally, people make both internal and external evaluations of the situation, and based on the balance of these evaluations, they may choose to pursue the proposed action or option.

Section 5: Predominant Bounded Rationality

There is one more clarification I have to make, and that concerns the external balance. I have differentiated between internal and external balance, and written that internal balance is related to Predominant Hedonism, and external balance to rationality, or material and social gains and losses.

Standard rationality, however, assumes that people are simple utility maximizers who at the minimun will maximize gains, or at the maximum maximize gains and minimize losses. But we have made the assumption that

people will also sometimes accept losses, because the internal positive hedonic balance outweighs the expected external negative loss.

So we will have to assume that people are "predominant bounded rationalists". They are bounded rationalists in the sense that they are not perfect calculators with perfect information, but will do their best to evaluate the situation with the cognitive capabilities and resources that they possess in the situation. And they are predominant rationalists in the sense that they will sometimes accept material and/or social losses contrary to the external utility maximization assumption.

The three external predominantly rational motives are:

- Seek gains
- Avoid losses
- Accept losses

The point is that contrary to the standard hedonist assumption, people will sometimes accept internal negative experiences. And contrary to the standard rationality assumption, people will sometimes accept external material and social losses. They do this for various reasons I have outlined above, and the final decision depends on the balance between these internal and external balances.

People are predominantly rational and predominantly hedonic but not always. That is the main point and key lesson of this essay.

Section 6: Conclusion

This brings us to the conclusion of this essay. It was my purpose with this short essay to bring my thoughts up to date, and to clarify the meaning of some

concepts, such as Predominant Hedonism.

First of all, this essay introduced the total decision-making process, or the CAM process. This process itself includes the Traffic Light Hypothesis, and one of the main ingredients of this hypothesis is the concept of Predominant Hedonism. The CAM decision-making process is itself a hypothesis at the moment that needs to be experimentally verified. But accumulated experimental evidence points to this direction.

The Traffic Light Hypothesis (TLH) is also a hypothesis at the moment that needs experimental verification, but previous research also points toward this direction. The relation between internal and external balancing needs experimental verification. Also, the expectancy evaluation needs to be included in the final explanation of the Traffic Light decision.

The final point to be made involves the clarification of the concept of Predominant Hedonism itself. My view at the moment is that external gains and losses should be seen from the point of view of predominant bounded rationality. Internal positive and negative experiences on the other hand are what Predominant Hedonism is all about. And this relates these concepts to the hedonic side of processing of the situation.

But in the end hedonic internal processing and external bounded rationality go hand in hand. And I hope that this short essay has shown how these two ideas and processes can be brought together to provide a more balanced and nuanced understanding of human decision-making.

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