The Fundamental Principles of Happiness and Emotions

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Abstract

The Fundamental Principle of Dynamics of Newton was a revolution for physics, not many theories managed to have such a high impact on science with a concise small set of equations. Psychology is in great need of such a powerful concision and this article aims to bring such a Newtonian revolution concerning the dynamics of emotions, happiness, stress, the therapeutic role of laugh, how humans unconsciously form unhealthy personalities and the basis to heal. The masterpiece of this new paradigm is called the Fundamental Principle of the Dynamics of Emotions (FPDE) which gives powerful simple explanations of the mechanisms of all emotions including happiness. A questionnaire has showed that 93% of people interrogated agree with the explanations given by this principle (FPDE). After thousands of years to this essential question for humanity the basis of the science of happiness is finally completely and clearly explained. It is the first brick laying down the foundations to construct a new unifying paradigm for psychology bringing all together cognitive psychology, psychoanalysis, behaviourism and personality psychology…

Keywords: happiness, emotions, stress, laugh, desire, acceptation.

The Fundamental Principles of Happiness and Emotions

Happiness is one of the most profound desires and purposes of human life. Many have tried to solve the mystery of happiness from philosophers thousands of years ago to psychologists more recently. Many made significant progress but no one managed to come to a satisfying theory explaining in a concise and complete way the dynamics of happiness. Two main barriers in the current scientific literature explains why this has not been discovered before. First barrier: the dangerous paradigm attributing 50% of happiness to genetics (Lykken and Tellegen, 1996) and 100% (Lykken, 1999, 2000) in other studies. Incoherent conclusions forecasting cracks in the theory of Set Point of Well Being as announced by Headey (Headey, 2007), simply the result of extrapolation of data by scientists over enthusiastic about genetics and thinking it can explain everything. In another article I will demonstrate why it does not and it is dangerous to condemn people to unhappiness by creating limiting beliefs that they can't change their happiness level because it is mainly due to genetics and mislead them to abandon. Second barrier: the current scientific paradigm around emotions which went into the wrong direction with some scientists confused between feelings and emotions now listing tens of thousands of emotions in disagreement with Ekman one of the leader of the field (Ekman, 2016) and Darwin (Darwin, 1872). The reasons for those two mistaken current paradigms will be detailed in separate articles. This article focusses on laying on the solution: the FPDE.

After thousands of years to this essential question for which humanity could not find a complete and clear answer, here is the basis of the science of happiness scientifically formulated:

> **Perceived Reality ≥ Desire → Healthy Emotion = Happiness, Serenity**
> **Acceptation (Perceived Reality < Desire) → Healthy Emotion = Laugh**
> **Non Acceptation (Perceived Reality < Desire) → Unhealthy Emotion = Sadness, Anger…?**
> Intensity (Emotion) = Measure of How much (Perceived Reality ≠ Desire)

And this is not just the science of happiness but of all emotions. This is actually giving the relationship between the mental/mind and the emotions. I'll explain why I chose **FPDE** but another simpler name could be the **inequations of emotions or laws of emotions**.

This is just the formula. Let's get to the detailed explanations of each line of the formula and after that the further clarifications required. But before few short important notes:

1. It is important to say that "Healthy Emotion" is exactly the same as what has been called by many scientists until now "Positive Emotions" = E+. And "Unhealthy Emotion" is exactly the same as "Negative Emotion" = E-. Another article will explain why the term Healthy/Unhealthy has been preferred but this is just a name it does not change what is important meaning the explanation of the cause of emotions, whether they are named Positive or Healthy… So the FPDE could be written Reality ≥ Desire → Positive Emotions (R ≥ D → E+)…

2. Secondly desire should be understood in a broad meaning of an event we want to experience it can be:
   - Will / Desire for food: I desire / want to eat a pizza…

- Will / Desire for any object: I desire / want to get clothes, a computer…
- Will / Desire for sex: I desire to have sexual relationships with this person…
- Will / Desire for success: I want to be successful by getting rich or famous…
- Will / Desire for personal traits: I desire to be perfect, nice, clever…
- …

I use the term "will = what someone wants" because it is exactly the same as "desire" so the FPDE could also be written by replacing Desire by Will, they are interchangeable.

3. Reality here needs to be understood as perceived reality as opposed to objective reality, this additional level of complexity will be introduced next.

Let's start with the explanations concerning Healthy Emotions (also called Positive Emotions). Healthy Emotions are experienced by an individual when his desires are realized meaning when his/her perception of Reality correspond to or exceed his/her Desires. So it is the result of a cognitive process.

> **Perceived Reality ≥ Desire → Healthy Emotion = Happiness, Serenity**

To have evidences proving the explanatory power of the FDPE anyone can simply observe or question people about their emotions in these common situations:

- People who succeed an exam that they really wanted to succeed are happy or at least serene:

Perceived Reality = I succeeded an exam important for me ≥ Desire = I really wanted to succeed this exam → Healthy Emotions (HE) = Happiness or serenity

- People looking for a job who finally get the job they wanted are happy or at least serene:

Perceived Reality = I got a job ≥ Desire = I wanted to get a job→ HE = Happiness or serenity

- People who receive a gift that they really desired are happy or at least serene:

Perceived Reality = Someone offered me a gift ≥ Desire = This gift is exactly what I wanted → HE = Happiness or serenity

- A sportsman who trained a long time and finally win a competition is happy or at least serene:

Perceived Reality = A sportsman win a competition ≥ Desire = He wanted to win this competition→ HE = Happiness or serenity

- People can be happy or serene when they receive a compliment because they want to be recognized as someone: who does a good work or clever or nice or beautiful…

Perceived Reality = Someone told him/her that he/she was doing a good work or is clever or nice or beautiful… ≥ Desire = Be recognized as a good worker or someone clever or nice or beautiful… → HE = Happiness or serenity

…

As many examples as we can think of can be found proving the deep explanatory power of the FPDE.

In the same way the Fundamental Principle of Dynamics from Newton explains an infinite number of situations implying a mass influenced by forces, the Fundamental Principle of Dynamics of Emotions explains an infinite number of situations of how a human being interacting with his/her environment through his perception of reality and desires affects his/her emotional state.

Serene simply means no happiness but no unhealthy emotion as well so really an absence of emotion or a neutral emotional state. Serenity has been grouped with happiness in the category "Healthy Emotions" because what we call Emotions can be grouped in three categories: pleasant, unpleasant and neutral. But we are trying to determine what is healthy

for people and what is not. The neutral emotional state of serenity may not be particularly pleasant (or positive according to the terms of positive psychology) or unpleasant but it is certainly healthy. Indeed serenity is certainly not unhealthy.

Let's take an example: People are happy when they do a good job when they care about their job but when they don't care do not get any happiness from it.

Perceived Reality = My work allowed us to win a new contract or got me a promotion…
≥ Desire = I want to have a bright career in this company/job… → HE = Happiness
≠ Desire = I don't like my job or don't really care, it is only a way to make money → HE = Serenity

We can see that the same perceived reality reacting to two different desires does not generate the same emotion. In this example the person does not care about something good for the job that he/she did as a result does not get happiness (neither unhealthy emotions) from it but just stay serene, it does basically not affect him/her.

Unhealthy emotions at the opposite (sadness, anger…?) happen when the perceived reality irritate us because it antagonize our desires.

> **Non Acceptation (Perceived Reality < Desire) → Unhealthy Emotion = Sadness, Anger…?**

To have evidences proving the explanatory power of the FDPE anyone can simply observe or/and question people about their emotions in these common situations:

- Babies cry when they are hungry or cold because even if they don't yet understand their environment they do not desire to be cold or hungry so basic perceived reality irritate them.

Perceived Reality = Cold, hunger, pain… < Desire = Feel no unpleasant sensation→ UE = the baby cries.

- Children cry when their parents do not yield to their whims: more sweets...

Perceived Reality = Mum does not want to give more sweets < Desire = The child wants more sweets → UE = The child cries or get angry and potentially becomes violent.

- People for who justice is a value that they do not accept to be seen not respected can get angry if themselves or someone they know is treated unfairly.

Perceived Reality = Person treated unfairly < Desire = Person desires to always see everyone be treated fairly→ UE = That person gets angry.

- One of the expressions that can be very often observed: all the people who realize that reality is not what they desire for example when they missed a bus, broke something… They can in these instances often say « Shit » or « Fuck ». The "Shit" metaphor is clearly establishing the parallel between how unpleasant is a "shit" and their emotions. The "Fuck" metaphor is less clear except if you relate it to the signification of "the finger" but again common language is not always coherent.

Reality = Something the person did not want to happen happens: an unfortunate event < Desire = The person did not want this to happen and do not accept it → UE = The person gets angry a little bit or a lot and says « Shit » or « Fuck ».

- In particular mistakes often fall into the category of things people don't want to happen.

Reality = Person has done a mistake < Desire = Person does not want to do mistakes → UE = The person gets angry or cries more or less depending on how perfectionist he/she is.

- Shame happens when people feel on them a judgement from others that they would not like to feel. This is why the people who do not care about what others think have no shame. But is shame an emotion or just a feeling associated with an unhealthy emotion like sadness or anger? This will discuss in more details in another article. For example someone forgot to close the doors of the toilet and someone else enter.

Reality = Someone see me partially naked while I am in the toilet < Desire = I don't want anyone to see me naked as a social norm I have learnt → UH = I feel shame

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…
As many examples as we can think of can be found proving the deep explanatory power of the FPDE.

This theory explains stress which is nothing else than unhealthy emotions, emotions that are unpleasant, painful.

Why does the stress become chronic for so many humans? This is why the FPDE is the first brick laying the foundation to construct a new unifying paradigm for psychology bringing all together psychoanalysis, cognitive psychology, behaviourism and personality psychology… If you add to the FPDE that humans construct their personalities with compulsive impossible desires like "I want to always be perfect" or "I want to be the best" or "I want to be loved by everybody" you understand perfectly why people suffer. **People suffer because they constructed for themselves influenced by their environment personalities with desires structurally unhealthy meaning personalities that will necessary make them suffer emotionally / be stressed. Indeed the FPDE makes it very clear:**

Perceived Reality = I did a mistake < Desire = I want to be perfect → UH = Stress
Perceived Reality = I am not the best < Desire = I want to be the best → UH = Stress
Perceived Reality = I am not loved by everyone < Desire = I want to be loved by everyone →
UH = Stress
…

These people will suffer emotionally as long as they don't change their personalities. If they continue with these unhealthy desires structuring their personalities they will suffer all their life.

This stress in some instances can generate anxiety because anxiety is simply a fear of an unidentified object. The emotional pain create fear because the human fear to suffer emotionally of course like we fear to suffer physically. For example the human who built a personality "always be perfect" will go to work anxious with a fear of an object not identified which is simply his/her own personality desire unsatisfied. Indeed each time he/she will do a mistake which will happen without doubt he/she will suffer emotionally like he/she feared he/she will. In this instance the desire is not only a temporary desire like to get a new job but a desire structuring the personality of the individual and that explains why this human is condemned to suffer until he/she makes a change of personality. This is a new paradigm to explain how humans construct unconsciously unhealthy personalities resulting in emotional suffering. The missing link between psychoanalysis and the rest of cognitive and behavioural psychology, as psychoanalysis had some powerful insights but did not until now explained completely and clearly the mechanisms of the unconscious, of neurosis and other mental illnesses. Schizophrenia can for example be reinterpreted as a personality build with unhealthy desires structuring the personality that systematically causes stress and anxiety. Most current unhealthy personalities and how humans construct them will be discussed in another article. The FPDE is the first brick laying down the foundations of a new unifying paradigm for psychology bringing all together psychoanalysis, cognitive psychology, behaviourism and personality psychology…

Freud was right to say that: « There is no question that the problem of anxiety is a nodal point at which the most various and important questions converge, a riddle whose solution would cast a flood of light upon our whole mental existence ». This riddle is being solved partially in this article with the FPDE and partially in a book to come which will

complete the science of happiness related to other important concepts too long to be the topic of an article. The cure for both stress and anxiety is to change to a healthier personality and it will be explained in this coming book, this article is the introduction.

Now it is important to explain why the unhealthy (negative) emotions are written in the FPDE "Unhealthy Emotion (Sadness, Anger…?)". Why is there three dots "…" suggesting that the list is not complete and an interrogation point "?" suggesting we are not sure yet?

The reason is that there is currently a large confusion in the scientific literature around the notion of "emotions" and another notion called "feelings". This confusion is clarified in another article: Barnat, 2019b. But what is really important is that all unhealthy emotions no matter how big the list is are always experienced as a result of Non Acceptation (Perceived Reality < Desire). And the main objective of the science of happiness is to learn to minimize them and to even after a long time of practise (could be months or years depending on the strength of the habits of the person) eradicate them.

In both cases healthy and unhealthy **the intensity of the emotion** depends on « how big is the gap between perceived reality and desire ». When people do not have strong desires, when they want something but not "badly" they will be little affected by the outcome. But the more people « care » means the higher is their desire and the more intense the emotion will be: very happy if the desires comes to reality or very upset (sad, angry…) otherwise. Following the following principle:

> **Intensity (Emotion) = Intensity (Gap between Reality ≠ Desire)**

What is the place of laugh in this theory? Because a quick analysis shows that laugh is caused neither by perceived reality fulfilling or not my desires. Despite this laugh is a healthy emotion without doubt.

> **Acceptation (Perceived Reality < Desire) → Healthy Emotion = Laugh**
> **Non Acceptation (Perceived Reality < Desire) → Unhealthy Emotion = Sadness, Anger…?**

The explanation is that laugh happens when people become aware and accept a gap between perceived reality and desire. Accept to laugh about it is accept that reality is not the way I want it to be. And this explains the therapeutic property of laugh (and jokes which are made to trigger laugh) because when perceived reality do not match your desires start emotional illness if you don't accept this gap but if you accept it you prevent stress, you heal yourself with preventive medicine! This is why laugh is so pleasant and healthy because it is ultra-necessary in a world where perceived reality is all your life going to go against your desires and irritate you.

This is why acceptance is so important but as contradictory as it might seems non-acceptance is important as well as we will explain in the book. Non-acceptance of the world or ourselves is also often necessary because we have an idea of the world or ourselves that is not real yet but that we want to realize. It can be to be a better person but also create a product, invention, company, artwork, repair something… **Know what to accept and what not to accept is a major skill of mental health and happiness.**

This explains why ideals that we try to incarnate are extremely important to understand the mechanisms of laugh like: perfection, intelligence…

Let's take examples which will be in the same time evidences proving the explanatory power of the FDPE indeed anyone can simply observe or question people about their emotions in these common situations:
- People who try to be perfect (incarnate perfection) and there are many, if someone show him/her that he/she has done a mistake, there is two options:

Acceptation (Perceived Reality = The person has done a mistake < Desire = The person tries to be perfect) → Healthy Emotion = Laugh

Non Acceptation (Perceived Reality = The person has done a mistake < Desire = The person tries to be perfect) → Unhealthy Emotion = Anger, sadness…

Either he/she accepts that perceived reality is not as he/she wants either he/she will suffer (more or less depending on the size of the gap and level of non-acceptance).
- This is why imperfections are so funny in any country the comedy movies emphasize on them: when Eddy Murphy act as a coward, Louis de Funes act as dishonest, irascible and stingy… And this also explains why humour is partially cultural because the ideas of "perfection", "social models" or "what people should try to be / incarnate" are transmitted to people via culture. But it is also partially natural because some situations are the same for all like when babies try to walk, fall and laugh about it this has nothing to do with the culture that the baby is anyway not mature enough to perceive.
- It also works for the babies who don't yet have a sense of culture. For example when the baby tries to walk and fall, of course falling was not his/her desire. So he/she can either accept or not this gap between perceived reality and desire:

Acceptation (Perceived Reality = The baby fell < Desire = The baby was trying to walk not fall) → Healthy Emotion = Laugh

Non Acceptation (Perceived Reality = The baby fell < Desire = The baby was trying to walk not fall) → Unhealthy Emotion (most likely cries)

Even if he/she does not think those words in his/her mind as the baby does not have this level of consciousness he/she still clearly has an intention when he/she is trying to walk and that intention is not falling he/she can perceive this difference obviously.
- In some cultures many people are taught not to fart in public because the smell is not something pleasant for others but sometimes we can't control it. And people react differently. Some people completely accept this "flawed" part of themselves and do not even laugh about it because there is no gap between their perceived reality and desires they are not trying to incarnate an ideal non farting human being.
Other people do think it is bad to fart so when it happens and others notice they have two options:

Acceptation (Perceived Reality = The person farts and someone notice < Desire = The person tries to look class, politically correct or avoid infesting others) → HE = Laugh

Non Acceptation (Perceived Reality = The person farts and someone notice < Desire = The person tries to look class, politically correct or avoid infesting others) → Unhealthy Emotion

- The song from Alanis Morissette « Isn't it ironic ? » she sings « it is like rain on your wedding day… isn't it ironic?» this is completely in line with what was just defined as irony a gap between perceived reality and desire. Irony is also sometimes defined as statements in which people say the contrary of what they think, there can be different reason it could be to say it without saying it (for something offensive for example) or just a way of creating an ironic situation to mock those who do not have the intelligence to understand that they "are ironic" meaning they do not speak literally. And indeed when someone believes literally what someone said ironically it put the person who did not understand the irony in a funny situation, a gap where he/she appears stupid (obviously not what anyone desire).

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As many examples as we can think of can be found proving the deep explanatory power of the FPDE.

A sense of humour through jokes is simply the ability to trigger laugh. It can be done using irony which is exactly this gap between our perceived reality and desires. Reason why people love comedy, irony and jokes it causes a healthy emotion: laugh. Two types of jokes can be distinguished:

1. Jokes about objective reality:

Funny people and even further professional comedians are really good at communicating to make us aware of those gaps we all experience when reality does not go our way and help us accept them leading by the example of doing it themselves.

The pranks that children do are just a way for them to put someone else in a funny situation with such an undesired gap so they can laugh.

2. Jokes using imagination to put us in scenarios where there is an ironic gap:

For example "The Simpsons", "Futurama"… Those are imaginary characters that makes us laugh but simply because they are humanized, they talk and we can identify ourselves to them. Those characters despite being imaginary are funny for the exact same reason because they are placed in situations where the Perceived Reality < Desire but made in such a way that it becomes acceptable for us. For example Homer Simpsons likes to drink too much alcohol, is selfish… And those traits do not have a reputation of being desirable in our society but in the same time many people like to drink and like to take care of themselves so Homer who is completely comfortable with his desire for alcohol and to do what he wants help people watching accept their own desires.

Note that not all jokes are successes many people try to be funny and fail:

-   Some people are bad at it they try to be funny but do not have the courage to see the truth as it is (to make appear those gaps between reality and desire) or are themselves uncomfortable with those gaps or simply think that some things are funny when they are not.
-   For example "carambar jokes" (jokes coming with some caramel sweets) which got in France a reputation of not being funny despite trying to be funny. Simply because a lot of Carambar jokes do not use well this ironic gap in stories made.

This theory of laugh explains why there are so many funny videos on internet of people falling or doing something wrong when they obviously do not intend to. The first important precision is that they do not intend to do this mistake and this explains why some people try to be funny by simulating a mistake but are much less funny that someone who does not intend to do the mistake because there is a real gap between perceived reality and desire. And this is why when on top of that people are being arrogant over confident and they do a mistake it becomes hilarious because the gap between what they desire to incarnate and believe to be and perceived reality is bigger. When we watch those videos we "put ourselves in their shoes" and it is the acceptation of this gap between perceived reality and what we imagine them desires to be that causes laugh. One of the reason blocking some people to laugh is because they feel guilty to laugh about the lack of fortune of someone else like it was mental illness to do this. Why add to the "misfortune" of someone else that we did not cause our own suffering and frustration? This is not healthy. This culpabilisation about laugh is dangerous for our mental health. It is actually the contrary

laughing is healthy because it liberates us from ideals of perfection for example which are impossible to reach this is a mental illness laughing is healing us from. For most people the limit of laughing about mistakes either for themselves or others will be where they struggle to accept the gap further for example is the person who fell really hurt him/herself.

Important Notes:

The FPDE is coherent with the "construal framework foreshadowed in previous theoretical and empirical work" referred to by S. Lyubomirsky (Lyubomirsky, 2001). Like she wrote: "Indeed, most theoretical perspectives on happiness, as well as a number of relevant theoretical models in related areas, attempt to explain how various cognitive and motivational processes account for differences in enduring and transient well-being (DeNeve, 1999)."

As mentioned in the introduction it is important to mention that the FPDE replaces an existing paradigm which has dangerously related happiness to genetics (Barnat, 2019c).

The FPDE is compatible with evolutionary explanations concerning emotions (Smith, C. A., & Lazarus, R. S., 1990). Happiness and stress are using the popular expression "the carrot and the stick" motivating humans to fulfil their desires. Humans are happy when their desires are fulfilled and unhappy when not. These chemicals are in survival mode excellent motors to motivate the organisms to fulfil their basic desires and survive: stress is released in situation of perceived reality < desire like when the life of the human is threatened by a predator which increase arousal and the likelihood of survival. But in conditions which are not about survival anymore this stress is not beneficial to the organism but only unhealthy. Get angry because someone forgot to buy potatoes is nothing good more anymore just unhealthy. Reason why adaptation is a process never finished that we have to complete ourselves consciously, we can't just rely on our automatic instincts result of an adaptation programmed in our bodies, clearly insufficient as it can obviously lead us to emotional pain.

The excellent paper of Smith & Lazarus "Emotion and Adaptation" (1990) was not far from what the FPDE explains. The FPDE add the missing relationship acceptation – laugh, the valence healthy/unhealthy and correct two mistakes. The first mistake: "Above all, emotional response is not a reaction to a stimulus, but an organism (person) – environment relationship." This is wrong, emotional response is a reaction to a perceived reality – desires relationship. For example babies cry when they are hungry the environment is not part of the relationship. The second mistake is to write that emotions are a reaction to an "appraisal of the personal significance of what is happening for well-being". This is not true a drug addict can be angry if you take his/her drug from him/her even if this will be good for his/her well-being. The true relationship is that emotions are consequences of an appraisal perceived reality compared to their desires (not well-being). Humans don't always desire their well-being unfortunately. Another example if you insult the god of a Christian or Muslim he/she might probably get angry because he/she does not desire this but this has nothing to do with survival well-being anymore only desires which can be basic but also cultural.

Of course each of the emotions described in the FPDE have many synonyms, same words signifying the same emotion:
- "Happiness" is also called "Joy"…

- "Serenity" is also called "Cool", "Calmness", "Peace", "Inner Peace", "Tranquillity", and "Ataraxic"…
  Example: At work one of your colleague did a very good job which you appreciate but not enough to make you feel happy you just feel "cool" about it.
- …

  FPDE principles could be written in a purely literal way:
1. When perceived reality satisfy / is consonant with the desire of a human being, it causes him/her a healthy emotion of happiness or calmness.
2. The acceptation of a dissatisfaction / dissonance between the perceived reality and the desire of a human being causes in him/her a healthy emotion of laugh.
3. The non-acceptation of an insatisfaction / a dissonance between the perceived reality and the desire of a human being causes in him/her an unhealthy emotion of anger, sadness…?
4. The intensity of these emotions is proportional to the intensity of the consonance or dissonance.

This literal formulation uses the concept of consonance / dissonance from Festinger (Festinger, L., 1957) which I discovered after formulating the FPDE in a "mathematical" way. Festinger had a good insight that consonant was somehow related to some comfort and dissonance to some discomfort but he did not clearly (like it is done in the FPDE) stated consonance and dissonance between what and what? It is not simply a consonance/dissonance between any cognitions, some people do not care about their own contradictions (dissonance) simply because they do not desire to have a coherent cognition. People can be comfortable with dissonance if they accept it, it mainly depends on what their desires are relatively to the perceived reality. The discomfort does not come from the dissonance itself but rather from the non-acceptance of the dissonance of their desires relatively to the perceived reality. Also he did not establish the relation with healthy emotions and unhealthy emotions (rather than comfort / discomfort) and the particular role of acceptation in the laugh.

In this article is used preferably the first formulation of the FPDE more "mathematical" with the couple of signs **≥/<** simply because:
1. It is faster to write.
2. It is more schematic as it allows to represent the gap between perceived reality and desire for example with the graph below which could be a future potential tool:
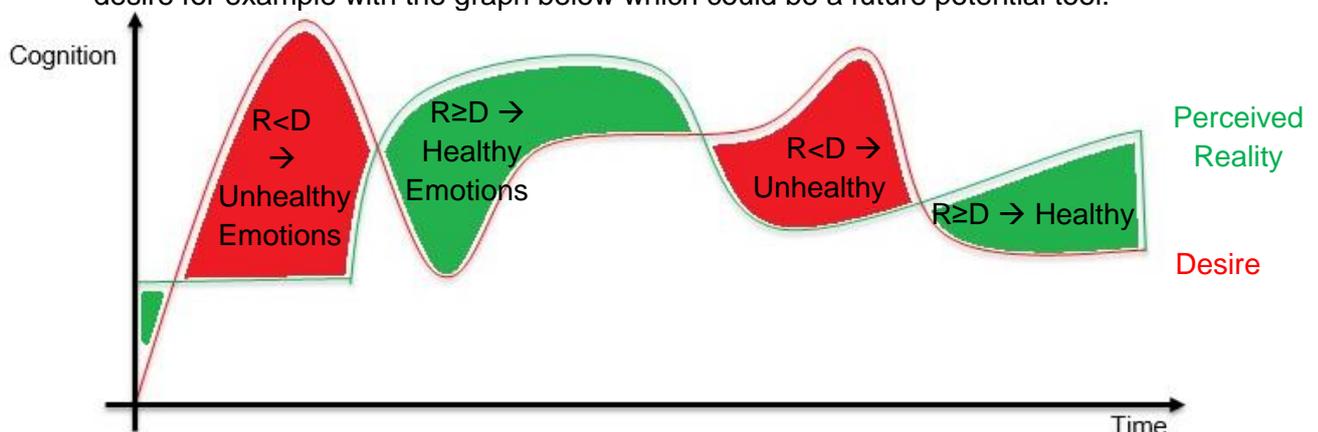
Figure 1: Imagine how emotions could be checked against the FPDE by measuring them in real time with electromagnetic devices

3. In tribute / to honour Newton who was one of the first scientific to give to science its authority and prestige. Newton created mathematical principles, just few equations that explain an infinity of phenomenon where forces put a mass in movement. The FPDE aims for the same will of concision quasi "mathematical" for the principles of emotions, for a clarity that psychology is in big need of.

But I acknowledge that consonance/dissonance (which is basically a musical metaphor) is also a good couple of opposite to refer to the similarity/difference between reality and desire. Because sometimes it may not be possible to describe the relationship as Reality ≥ Desire or Reality < Desire sometimes they may just be consonant or dissonant. Even if for most examples I can think of the reality can always fulfil your desires beyond your expectations or disappoint you even more than you expected reason why I used the signs ≥/< as it seems that in most cases there is a "level" involved. Anyway ≥/< is also a good way of explaining the relationship.

Methods

A questionnaire (available on request) was used to ask people from different sex, age and origins if they think that FPDE fully explains their emotions.

Results

	Fully Agree	Agree but think more explanations are needed for particular examples more complicated to understand	Fully Disagree
Question: Do you think that with the examples given the FPDE fully explain your emotions?	76.67%	16.67%	6.67%

Table 1: Results of questionnaires to validate the FPDE

Discussion

Table 1 shows that around 93% of people who answered the questionnaire agree that the FPDE explains their own emotions. This is very good knowing that the objections in the 16.67% don't reject the theory they agree with it but think that more explanations are needed on the questionnaire for particular situations it does not address: for example one of the comment is that emotions can be a mix which is true of course and does not invalidate the FPDE perceived reality can of course disappoint me on some parts of my desires and content me on others. The 6.67% of answers "fully disagree" are in no way evidences against the FPDE because the comment made is due to a confusion between emotions and sensations of the subject and who can blame him this distinction is not clear even in the scientific community. As mentioned clarify this is the purpose of another article: Barnat, 2019b. So really the data could be reinterpreted as a 100% agree once the questionnaire is made clearer to anticipate possible confusion of the subjects on particular examples involved by the theory.

One of the highest criteria of science is falsifiability (Popper, 1989) meaning designing a crucial experience that makes the theory refutable. It would mean for example find a situation where Perceived Reality ≥ Desire → Unhealthy Emotion = Sadness, Anger… Just how ridiculous this sounds shows how strong is the theory. It is essential to keep in mind that like always in Psychology refutability is tricky as here you can never be 100% sure of what is the perceived reality and desire of someone. You can ask after the emotional reaction occurred but they could be bad at analysing themselves. Or lying to themselves. For example the people telling you they have all their desires fulfilled and are not happy is because they don't know themselves they have a desire not fulfilled for example they expect too much from life and this is the problem. Observing emotional reactions of babies is a more reliable indication of how people react before to be influenced by a culture and with confidence that they don't act any role learnt.

But it is common knowledge that psychology is trickier than physics when it comes to evidences, all researchers in psychology face the same difficulties. All the following tools are used a lot by the scientific community despite the following problems:

1. Questionnaires potentially mean many bias like:
- The subjects answering the questionnaires might not know or understand themselves very well unfortunately being able to analyse yourself is not a skill that everybody is good at it needs to be learned and developed.
- How the questions are formulated orient subjects to a type of answer so there is some manipulation of the interpretation.
- Some subjects might not understand well the question for different reasons (interpretation…). I faced this problem with two of my subjects who gave me a feedback after filling the questionnaire and told me that he/she were not really good with mathematics so the formulation of the FPDE with signs "≥" or "<" was not very clear for them while other subjects got it without problem.
- Some people have a very poor capacity to observe themselves objectively, lie to themselves a lot and will give very subjective answers sometimes far from the truth.

2. Laboratories experiment is not a "real life situation":
A laboratory experiment could easily be done by whoever wants to measure the emotions of people while we put them in situations where Reality ≥ Desire. Using whatever best techniques we have to measure this is outside of the scope of this article. But a first problem when experiment are conducted is that only one side of the theory can be tested as put people in situations where Reality < Desire is unethical. Another problem with laboratory experiment is that the subjects know they are observed in a scientific research and it can affect their behaviour (Hawthorne effect).

3. Correlations also potentially mean many bias (of a different type):
It is used a lot also because it is unethical to manipulate individual's levels of unhappiness. But present huge risks of bias. As showed by this widely studied case, which concluded wrongly based on correlation mistaken for causation.
"Numerous epidemiological studies showed that women taking combined hormone replacement therapy (HRT) also had a lower-than-average incidence of coronary heart disease (CHD), leading doctors to propose that HRT was protective against CHD. But randomized controlled trials showed that HRT caused a small but statistically significant increase in risk of CHD. Re-analysis of the data from the epidemiological studies showed that women undertaking HRT were more likely to be from higher socio-economic groups (ABC1), with better-than-average diet and

exercise regimens. The use of HRT and decreased incidence of coronary heart disease were coincident effects of a common cause (i.e. the benefits associated with a higher socioeconomic status), rather than a direct cause and effect, as had been supposed" (Lawlor, Smith, Ebrahim, 2004).

All these deep problems to gather evidences which currently culminate into what has been called a "replication crisis" are not specific to this scientific paper but rather concern psychology as a whole so this of course can't be held against the validity of the theories presented here. But to bring my contribution to the replication crisis I suggest that for studies which allow it we can do a first verification of the theory simply using materials available in your daily life and internet (we should not be narrow minded but look at the advantages). For example with the FPDE, if this theory explain during one month all your emotions, all the emotions of your relatives and all the videos on internet you watch of people who have natural emotional reactions then you have great evidences that have two huge advantages:

- The evidences do not risk the bias of a laboratory experiment (Hawthorne effect).
- These evidences avoid the huge bias possible with correlations (Barnat, 2019c). We now realize that some scientists have been relying too much on statistics (p values…) to tell them if a new theory is solid but p values are interpretable in confirmatory analysis not in exploratory analysis (Open Science Collaboration, 2015). What is dangerous is that statistics give the feeling that it is scientific even when it is not so many researchers have been relying on them too much. We need alternatives to double, triple check the solidity of a theory.

Think about it repeatability in a laboratory with the same circumstances is difficult but use the world as a laboratory remove this problem and only the strongest theories will resist constant observation in our daily lives for a period that can be decided as sufficient. Is science about explaining non-laboratory reality or laboratory reality? You know the answer. Yes the non-laboratory world is not controlled but is that always a disadvantage? No because a theory that was validated in a laboratory could fail in real world because it did not account for some important parameters. As scientists we should use all the tools available to check theories: laboratory experiments and non-laboratory observations. They have different advantages.

Concerning the limitations of the study as you can see the results are definitively not a negative. The only true limitation is like for many other studies the sample size. But one questionnaire on a small sample is just a start. I just want to say that if as Scientifics we have to rigorously ask for evidences for any theory we also have to stay open minded a great theory can be at first presented with little data just look at one of the biggest success of science Einstein and his article "On the Electrodynamics of Moving Bodies" (Einstein A., 1905). This article is very theoretical and he just suggest experiments but do not present data. In the long term of course data should back up the theory but don't do the mistake to think that at first when they are presented the greatest theories always have huge data because it is wrong. Einstein was not working as a researcher in a university when he did his first publications but in a patent office as a result he did not have access to all the facilities, means of research and data collection a university has to offer. I am in the same situation I am doing this research independently and need help to gather more data. Data is essential for science don't get me wrong, this article is a way of establishing contact with all the universities and researchers interested by a collaboration to proceed with bigger data samples. So all the scientists interested to put in place experiments to get more data please do so and don't hesitate to contact me. I have no doubt that any data rightly interpreted will back the FPDE but this project is too big for me to accomplish it alone, I did with the means I

have. And my situation is not only a disadvantage for my theory on the very contrary it allowed me to think outside of the purely academic box. Einstein also was an independent researcher not working in a university and with little data backing his theories but that did not stop him to write 4 ground-breaking papers for physics. At first the best insights of science don't always come with huge academic amounts of data Einstein is an indisputable evidence whoever think the contrary is not helping science but on the contrary a barrier to its progress. A lot of data already published in many papers can also be reinterpreted with the FPDE as I started to do it myself in this article and as I encourage anyone who wants to continue.

There is a general trend from Scientifics to use questionnaires just to have data (like I did following the norm) and a laboratory experiment that make the theory "look scientific" but that is in no way a guarantee of a good theory. Any good scientist has already seen articles with plenty of data wrongly interpreted, with many bias… A good theory comes mainly from how well this theory explains and if possible predict objective reality as this is the main purpose of science. And what is obvious from all the explanations and examples given is the extremely high coherence and explanatory power of the four principles of the FPDE. And the best evidence that you can have as a scientific should do, is simply to observe emotional reactions of people in any situation: in your daily life, on internet... You will see that the FPDE's explanations resist all observations.

Conclusion

To get the full picture it is important to know that this article is a deeply interconnected part of four articles forming four ground-breaking theories:

1. This first article exposing the discovery of the Fundamental Principles of the Dynamics of Emotions (FPDE). One of the most powerful theory psychology has to offer to explain clearly, coherently and completely some of the most important motivations of humans: happiness, laugh, anger, sadness…

2. "Clarify the confusion around emotions and feelings" (Barnat, 2019b). A correction of the whole scientific paradigm around emotions which went into the wrong direction with some scientists confused between feelings and emotions now listing tens of thousands of emotions.

3. "A happy personality depends mostly on your thoughts, not your genetics." (Barnat, 2019c). Aiming to use the FPDE to put a definitive end to the dangerous paradigm attributing happiness to genetics based on extrapolation of data by scientists over enthusiastic about genetics and thinking it can explain everything. It does not and it is a dangerous message misleading people to have self-limiting beliefs about their capacities to be happy and risk a self-realizing prophecy. Meaning that the scientists made people unhappy by convincing them they can't be otherwise which is deeply unacceptable.

4. "Personalities Unconsciously Improvised Resulting in Emotional Pain" (Barnat, 2019d). A new paradigm to explain with the FPDE how humans construct unconsciously unhealthy personalities resulting in emotional suffering. The missing link between psychoanalysis and the rest of cognitive and behavioural psychology, as psychoanalysis had some powerful insights but did not until now explained completely and clearly the mechanisms of the unconscious, of neurosis and other mental illnesses. And a new type of psychotherapy based on the understanding the dynamics of our emotions with the FPDE concludes that happiness result from Ensuring Healthy Perception and Desires (EHPD).

Those four theories lay down the foundations for the science of happiness giving its basic principles but for which complete detailed explanations will be done in a book as it involves society and is too long to be exposed in an article.

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