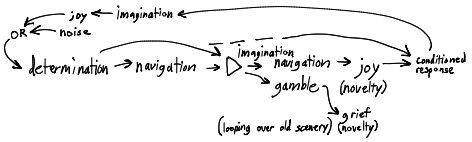
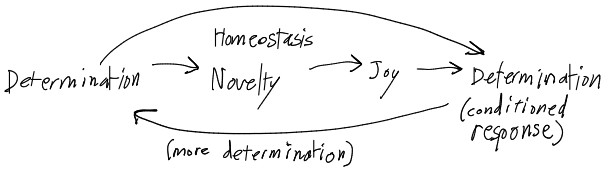
DISCLAIMER: Plausible concepts, attributed sources, oversimplifications, reasonably. Rigorous mere academia NOT primary.

Deeper speculation of rigorous techniques towards ensuring basic motivations (emotional responses) are adequately conditioned by the provided environment.

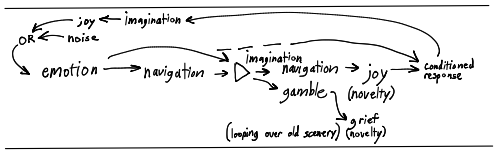
Due to determination possibly broadly eliciting emotions (and corresponding intellectual/physical activity), the reinforcement loop for determination may be especially important.



Determination sensitization may be reasonably modeled as the result of a loop between progressively more challenging rewards, and additional reinforcement by progressively more determination.



Emotions may generally force a choice between careful navigation and random gamble, sensitized into conditioned responses by relevance to joy (ie. novelty or homeostasis). Emotions running as parallel processes may also inhibit navigation in favor of imagination and activating other emotion processes.



Joy/Grief -> Tend to happen in close association with or as part of other emotions.

Hope -> Cease navigation. Imagination generating novel possible navigation paths towards objects associated with 'trust'.
Lack of sensitization of hope in extreme cases may stop 'oscillation' (ie. 'learned helplessness'.
Savoring -> Cease navigation. Imagination accounting of past navigation leading to joy.
Fear -> Cease navigation. Imagination selecting more accessible navigation paths established through 'hope' processing. Hope returning to fear may sensitize risk aversion.
Sorrow -> Cease navigation. Imagination selecting and removing possible navigation paths including objects which may no longer exist.

Trust -> Be near protection and protect. Applies to other players to 'safe' places, etc. If trust did not promote defending as well as being defended, then both behaviors would indirectly sensitize nonetheless due to the fear of actual (discovered) or imagined loss.

Determination -> Increase gain and decrease high-pass frequency of all active emotions (eg. rage, vigilance, trust).

Vigilance -> Seek and maintain perception.
Rage -> Use force.

Examples may illustrate some interesting emotion logic.

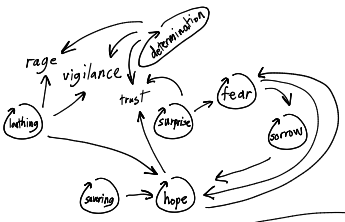
Learned Helplessness - eventually to the point that 'oscillation' will not self-start from inherent input 'noise'. Experiments (by 'Martin Seligman') indeed suggest this state can be unrecoverable without interactive intervention.

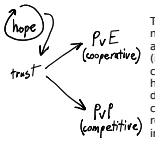
Closure - converting fear to trust (maybe permanently).

Vigilance - checking instrumentation, using image enhancement, peering into darkness.

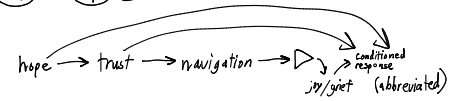
navigation -> grief -> fear

Cease navigation as an apparent response to 'receiving' grief need not be modeled as so direct. Rather, navigation motivated by another emotion brings evidence of a result. From there, activity of the fear (or converted to sorrow) process increases (eg. fear of solving problems without the help of a lost ally, fear of loss of novelty from absence of a companion's solutions, fear of a companion's own absence from a 'theory of mind' imagination of sorts, etc).



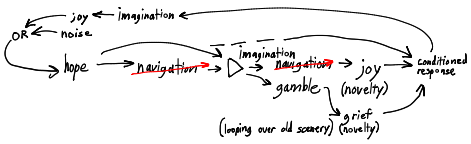


Trust (aka. confidence) may be used to acquire a location's resources (ie. PvE - working with colleagues at good hunting grounds) or to directly confront a competitor (ie. PvP - reducing total intraspecific resources).



Exploration

Combat
Player vs Environment
Player vs Player
Player develops Automation



Emotions motivating the cessation of navigation (ie. deliberate physical movement) in favor of imagination (eg. hope), cause 'joy' through novelty (new plausible solutions), then convert to another emotion (eg. trust). So long as all emotions eventually result in 'joy' (through novelty or homeostasis), both are sensitized.

Conditions reinforcing progressively longer cycles of cessation of navigation in favor of imagniation will sensitize the emotion (eg. hope).

Hope/Determination is sensitized/learned when conditions progressively reinforce with joy only after progressively increasing durations of ceasing navigation to use imagination.

Hope/Determination is desensitized, or more vaguely Despair/Helplessness is sensitized/learned, when conditions only result in grief.
Abandonment of the preceding emotion (eg. hope) repeatedly causes a conditioned response ignoring the imagination state (eg. proposed solution) which would have otherwise brought joy (due to novelty).
With the imagination state not sensitized and novelty lost, the original emotion will be more difficult to evoke.
Failure of navigation from the converted emotion (eg. trust) causes all emotions not to be sensitized. Both novelty and the preceeding emotion will be ignored.

Hope/Determination sensitization, when strong, causes continious imagination, building novel long-term solutions (ie. hobbies) from a regular stream of short-term solutions.

Hope/Determination desensitization (or more precisely absence of sensitization), causes random noise input, imagined solutions, and/or the converted emotion, to terminate as they occur, ending 'oscillation'. Such 'learned helplessness' results in no attempt at 'navigaton'.

Stronger players have more sensitized Hope/Determination, with short-term success building increasing motivation to imagine more difficult solutions. Weaker players have been desensitized and will show less thoroughly careful decision making (tending to gamble).

DISCLAIMER: Do NOT take speculative model literally!

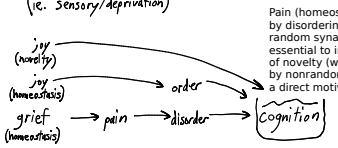
Model may be intended at most to account for plausible mechanisms of reinforcement of useful motivation (ie. 'emotion' as might also be accounted for by 'positive psychology', etc).

Any mention of any particular 'feeling' or 'emotion' beyond binary joy/grief representing pleasure/pain from homeostasis or novelty, is only illustrative.

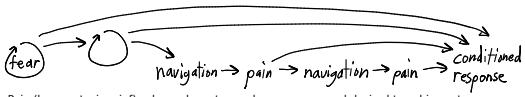
A complete account of the underlying emotional circuits responsible for specific 'feelings', or their associated mechanisms, of any particular connectome typical of any particular species (eg. 'human', is out of scope (ie. 'off-topic'). That would instead be a topic when studying a specific connectome, contrived for Artificial Intelligence (aka. AI, AGI, etc) purposes or otherwise.

Terminology and symbology used here will depart from official or usual meanings as used in existing psychology research. In no way are these models intended for any use in the field of psychology, only in rough architecture of software/hardware/wetware design.

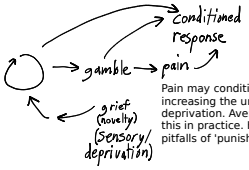
Pain may be a necessity. VR software/hardware designers must also implement pain simulation. Beware either absense or inadequate punctuality will cause severe harm.



Pain (homeostasis grief), if implemented by disordering the cognition (eg. by random synaptic pruning), may be essential to improving the effectiveness of novelty (which may order the cognition by nonrandom synaptic potentiation) as a direct motivation.



Pain (homeostasis grief), when relevant, may be necessary and desired to achieve strong conditioned responses, which may be necessary to achieve adequately strong internal motivation (ie. emotions). Here, memory of a reptitive loop in careless navigation may reinforce determination to avoid carelessness.



Pain may condition responses by pairing, increasing the unpleasantness of sensory deprivation. Aversion therapy may rely on this in practice. However, all the dangerous pitfalls of 'punishment' apply in this case.

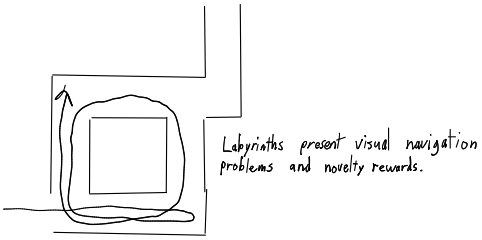
Ferocity and tranquility both may be desirable end states of strong conditioned responses.

Congenital Insensitivity to Pain reportedly may result in diminished 'fear', 'thrill', among other emotions.

https://en.wikipedia.org/wiki/Congenital_insensitivity_to_pain

https://www.nytimes.com/2019/03/28/health/woman-pain-anxiety.html
'At 71, She's Never Felt Pain or Anxiety. Now Scientists Know Why.'

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6676009
'Microdeletion in FAAH pseudogene identified in a patient with high anandamide concentrations and pain insensitivity'



Novel terrain features (ie. flora/fauna, creative game artwork, etc) are essential to motivate behaviors beyond basic homeostasis (and novel player interactions to supplement this also do not develop without the novel terrain features).

Exploration, including encountered conflict, sensitizes hope. Increasingly large and complicated 'labyrinths' with 'adversaries' from behavior that searches environments for sustainable resources and novel scenery (PvE) as well as behavior defending (or winning) resources (eg. players) from other players (PvP), repeatedly awards increasing joy with appropriately careful encounters with increasing dangerous terrain or players.

Restraint, from inadequate ability, parasite damage, repeatedly removes or precludes joy, progressively desensitizing Hope/Determination. Restraint is at best an unfortunate reality of a given situation, and never a necessary good in itself. Restraint is appropriate when keeping balance (ie. currency per hour earnings, low currency inflation, leveling between players, findable key locked doors, severe consequences for entering wilderness beyond a player's own stats, rebalancing spawn rates, adjusting difficulty), but inappporpriate otherwise (ie. lottery, gambling, unlimited retrying of dangerous situations, immortal lack of consequences from 'death', etc).

Absence of adequate sensory novelty from Player develops Automation, progressively desensitizes Hope/Determination. While highly sensitized Hope/Determination may allow long-term absense of reinforcement, the direct consequences of sensory deprivation inevitably must be compensated sooner from some exposure to exploration through PvE and/or PvP.

Enabling more Player develops Automation, is in the context of substantial wealth inequaltiy, the economic justification for entertainment industries of any sort. In that temporary situation, higher quality - more novel and intense exploration through PvE and/or PvP - will allow faster recovery of abilty for more PdA.

Diversity is mandated by parasites due to the need for differences in strategy to overwhelm the less resourced imagination resource of the parasites. Food chains are expected to be divided into roughly equal players of forms differing mostly in relative attributes rather than adaptations (excepting inhabitation of different locales with substantially different air/fluid/land lift/drag/bouyancy/weight/thrust constraints).

Wealth inequaltiy can only occur if material wealth exists - if players own property in addition to their self-replicating forms.

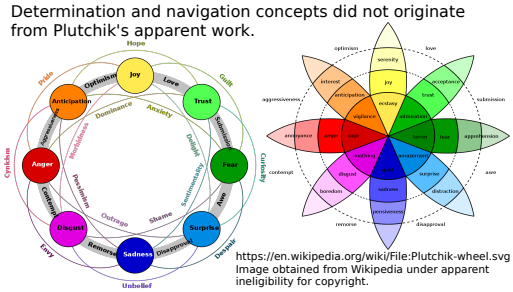
Promptly dispense homeostasis and novelty order/disorder (ie. pleasure/pain). Maximize exploration (complicated terrain, PvE, PvP) and novel terrain features (eg. flora/fauna). Minimize restraint and PdA. Balance diversity. Expect limited parasite activity. Expect equal wealth between same-age players. Time spent in PdA will be proportional to the novelty and intensity of available PvE and PvP.

Top-down WORLD builders (ie. game developers) must be especially wary of inadequate novelty from absence of creativity in artwork design (ie. plainly arranged terrain/architecture), unhelpful or extensive Player develops Automation (eg. cheating, spreadsheet overuse, third party analysis software overreliance), restraint gamification (eg. standalone rewards without inherent novelty fulfillment, timegates, absurdly low return on investment gambling), etc.

Bottom-up WORLD builders must be especially wary of inadequate novelty from any 'shortcuts' taken (eg. random terrain, procedural terrain generation of lifeless rock without for adequate flora/fauna).

Plutchik's apparently postulated hypothesis concerning basic emotions, essentially analog response, and narrowly defined behaviors, has seemed relevant to possible explanations as to how motivations of complex behaviors might emerge from environmental interaction creating chains of conditioned responses.

Determination and navigation concepts did not originate from Plutchik's apparent work.



https://en.wikipedia.org/wiki/File:Plutchik_Dyads.svg
Image obtained from Wikipedia under apparent
CC BY-SA 4.0 license. No intentional modification.

https://en.wikipedia.org/wiki/File:Plutchik-wheel.svg
Image obtained from Wikipedia under apparent
ineligibility for copyright.

Well studied games, including classic games of chess, go, connect four, etc as well as two player game theory scenarios, may offer a means to test the 'rationality' of an individual's emotion conditioned responses. Well balanced internal motivations (ie. emotions) should be expected to result in the individual quickly recognizing and attempting optimum strategies an all games.

Quick recognition of optimum strategy is important in any complex scenario requiring multiple techniques to achieve a top score (ie. combat instead of racing).

Simple animals may be highly proficient in speed, while lacking other abilities. PvE may emphasize the use of complex combinations of behaviors obstructing apparent paths to escape, while PvP may emphasize the use of complex combinations to identify any weaknesses.

Top-Down WORLDs may have deficiencies other Top-Down WORLDs may not have. Players accustomed to multiple games are more likely to achieve a top score in at least one, by quickly recognizing all necessary techniques and means of perfecting those techniques. Some of which may be a consequence of internal neurophisiology (eg. disciplined use of fast CNS vision instead of latent PNS pointing feedback).

Life and game experience, notably in navigating labyrinths and identifying the higher latency of PNS feedback point shooting, accounts for most if not all of this document's logic. Any gamer would likely be at least vaguely very well aware of similar concepts. Formal academic study absent of such thorough experience rarely if ever contributes more than a description of the narrowest mechanics. Individuals with only formal study are unqualified to WORLD building, those without either formal study or life experience are even less qualified.

By gamers, for gamers.

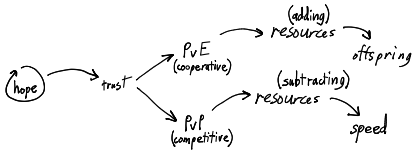
As to the idea that a commercial success or a program of formal study could guarantee competence, Frontier Developments has enjoyed too many years of mediocre commercial success, while however much by design (ie. selling vaporware) or ineptitude, their WORLD building has fallen far short of requirements.

Top down (many rules, arbitrary) has the advantage of avoiding unnecessary unpleasantness - such incomprehensible nuances as the misalignment of neural and bacterial circadian rhythms. Unfortunately, top-down itself results from unpleasant Player develops Automation (PdA) effort, and to identify what is or not necessary to 'gameplay' requires taking this beyond a point of diminishing returns.

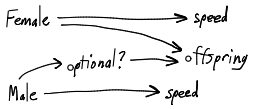
Bottom up (few rules, 'big bang') has the advantage of bringing out all possible Player vs Player and Player vs Environment interactions. However, bottom up does not avert unnecessary unpleasantness - notably parasites and falling asteroids.

Top down requires an abundance of caution to avoid severe stagnation. Bottom up requires a high tolerance of neutral and negative results. ACKNOWLEDGEMENT - Top down and bottom up terminology is from Sword Art Online (SAO).

Highly speculative.
Few cases may create some incentive for gender specialization.
*) Deficient conditioning from previous life experience (ie. 'gender roles' from a discriminating society which has separated the gathering of resources entirely from parental care.
*) Males incentivized to abandon parental care in pursuit of slight (parts per thousand) differences in speed.
*) Bottom-Up WORLD building may result in some cases of this, along the lines of gender specializations observed in wild animal phenotypes.
*) Top-Down WORLDs deliberately created to mimmic Bottom-Up WORLDs may include gender specialization incentives, difficult to balance appropriately.
*) Top-Down WORLDs using intraspecific role specialization (instead of equal competence) used as a 'game mechanic' to allow players to emphasize a specific mental ability subset (eg. speed at the expense of defense) may inherently or inadvertently create specializtions which resemble gender specializaton.
*) After all, emphasizing intraspecific role specialization may be something of an artifice, as prolonged intraspecific cooperation may be rare in nature.



Highly speculative.
Females may be incentivized to become more skilled as hunters, to gather resources while burdened carrying offspring.
Males may be incentivized to only achieve very small competitive differences in speed, if not burdened with parental care.



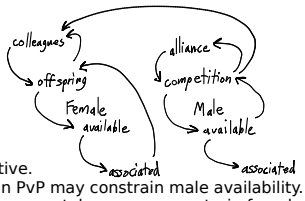
Highly speculative.
Gender specialization and any actual secondary characteristics may result if males are incentivized to abandon parental care. Males may still cooperate with other males, resulting in similar or more dynamic 'trust'.

$$P_S = V\left(\frac{T-D}{W}\right)$$ 'Energy-Maneuverability Theory'

V = Speed
T = Thrust
D = Drag
W = Weight

A few parts per thousand may consistently separate a top 'winner' from a 'loser' in 'racing - or any other competition. Indeed, this seems to be the case in 'horse racing', albeit that may be an artifice.

Logically, speed may not be the only necessary advantage (eg. 'turn rates' being essential to countering evasion), but may be required (as even a slightly faster opponent may simply 'run away'). Although the equation presented is arguably less a 'theory' than a hypothesis to exclude other variables, 'speed' is required for all other advantages in any conflict (eg. between well designed 'fighter jets' with adequately trained pilots).



Highly speculative.
Specialization in PvP may constrain male availability.
Specialization in parental care may constrain female availability.
When specilization is not extremely favored, males may have sufficient incentive not to abandon parental care, joining females as colleagues.
Lingering specialization in PvP may provoke males in alliances (not being successful in competition on their own) to aggressively take the place of other males associated with females as colleagues, which may dilute specialization more.
Males may have greater impediments to associating with females than vice versa, due to competition and expenditure on any 'gifts' (eg. food for female and offspring at expense of male competitive fitness).

Beware these mechanics, if at all valid, exist within the complexities of interspecific interactions, incurring severe pitfalls.