Son, take all risks you want, but you really don’t f**k with this

A cheat sheet for parents to think about core non naive risk taking needed to transmit to our kids, from a complex systems perspective.

Oliver López-Corona

From 1998-2005 I practiced intensely both mountaineering and exploration, in which I had the opportunity to participate in different expeditions such as:

Exploration in the jungle of Alta Verapaz, Guatemala (1999).
First absolute world climbing of El Escudo, the northern wall of more than 1,000m at La Encantada (also called Pichacho del Diablo), Baja California Summit (1999).
Exploration of the Cuchumatanes mountain range in Guatemala (2000).
Crossing through the desert of Coahuila, Mexico (2001).
Bicycle Tour in the Iberian Peninsula: 2,000Km pedaled including El Camino de Santiago from Roncesvalles to Santiago de Compostela (2002).
Probable first western crossing in the Great Desert of Altar (Sonora), in only 34 hours without sleep, being the fastest (2002). Crossing through a variant of the previous route (2003).
Bicycle crossing of the Atacama Desert, Chile, from the sea to the Andes on the border with Bolivia (2005).
I have been named as one of the three best student mountaineers in the history of the Association of Mountaineering and Exploration of the UNAM and I was nominated for the Student Sports Award of the UNAM (2002).

But from all my adventures being a dad is the best!

I'm a physicist with a PhD in applied math to natural resources management. I work in what is known as complex systems and after start studying the work by Maestro N.N.Taleb I became very influenced by his deep understanding about randomness and risk, so I consider that maybe it could be useful to highlight some of his ideas applied into parenting.

This booklet is an attempt of making a compendium of some ideas backed both by experience and non-naive science about things I would like my kids to know about risk taking and that could be used as some sort of cheatsheet for others dads.

www.lopezoliver.otrasenda.org

Non-linearity

1. Don’t fall from above your head

Falling from 5cm is imperceptible; falling 50cm can be good for the bones; Falling badly from a height beyond the head ends in broken bones. Falling from 10m is almost certainly fatal.

Non-linearity means:
Small stressor -> small damage
Medium stressor -> big damage
Big stressor -> caput

Reference: Strogatz, Steven H. Nonlinear Dynamics and Chaos. CRC Press, 1994.

Me and my kids have always play on parks, great way to grow strength. As they are very used to it, they started easy and build on that. I've always told them about don't fall from above the head, so if they were to climb the rope above that it is because they are more than sure they can. This implies not helping them, after a very initial point, so they don't rely on that to go up. I'm always (ok ok… eventually there is no such thing as always) near and supervising. One day after their basketball training the little one in the picture asked to go with his friends to play. I was tired and with low attention, I wanted to go home and above that i didn't like his friends influence (the kind of kid that push each other to risk). But he is very stubborn (your best characteristics are also your worst depending on context). The result was a broken arm that required surgery and two nails.

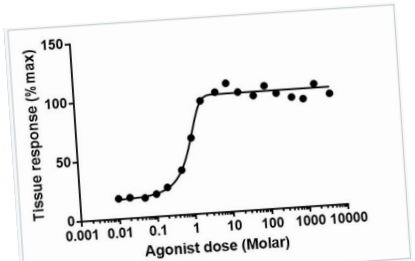
What went wrong?

Me: I didn't listen to my guts. In mountaineering we have a saying, **"if you have doubts, you don't have doubts"**

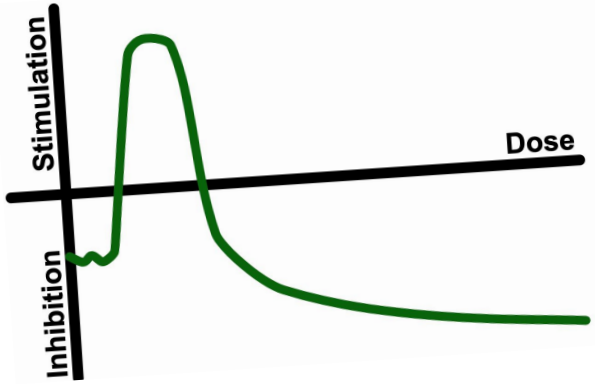
Son: He let himself to broke the rule… starting playing in this kind of hanging bars and swing while "friends" push him harder and harder. Eventually he got almost horizontal and fall. Caput.

2. Be aware of dose-response curve

Even best things exhibits a dose-response curve. First almost no effect is visible, then benefits accelerates, then it slow down, no progress and sometimes even damage occur



A dose response curve showing the normalised tissue response to stimulation by an agonist. Low doses are insufficient to generate a response, while high doses generate a maximal response. The steepest point of the curve corresponds with an EC_{50} of 0.7 molar



When a system benefits from a stressor (convex part of the curve) it is called Antifragile; when the system get damage from it, it is fragile (concave part of the curve).

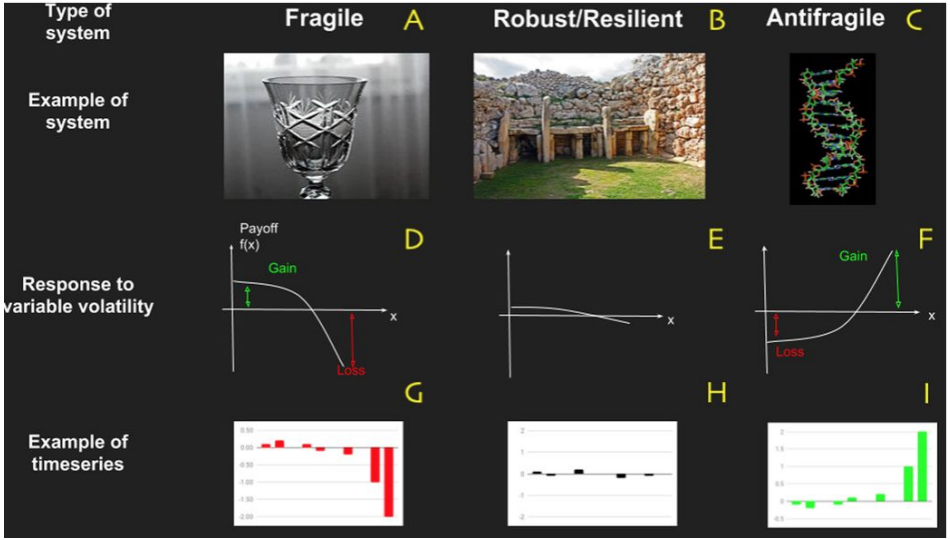
Reference: Taleb, N. N. (2012). Antifragile: Things that gain from disorder. New York: Random House. Chicago (Author-Date, 15th ed.).

Not doing sports is a very bad idea from any focus considered. A little practice has a very small benefit, as training get more serious benefits increases non-linear but then benefits starts to slow down and even stop. Eventually if you get professional for example many athletes will get bad accidents, will over train, could burn out, etc. So if we keep pushing we most probably will get hurt.

Elite sport is not about healthy by no means and in general we shall remember that everything that optimice, fragilize the system.

Kukuczka was a unique climber doing some of the most difficult and xtreme routes in Himalayas, but even after having climbed the 14 mountains of more than 8,000m (second one to accomplish this) eh kept going... caput!

On the other hand we have Messner who after reaching for the first time the 14 mountains of more than 8,000m, decided to change to polar-desert exploration.



Basic characteristics of systems in terms of antifragility, which is the property of a system to respond in a convex way to perturbations, variability, stressors or time. In the figure (A–C) are examples of fragile, robust/resilient and antifragile systems respectively; (D–F) are examples of profile responses to perturbations.

Taken from https://peerj.com/articles/8533/

Be aware that:

- One may be antifragile (win from stressors) in one dimension (physical) but be fragile in others (emotional)
- Antifragility is local, meaning it also have dose-response in the sense one may win from stressor up to certain point, then could break up suddenly (this is called a tipping point)
- A group of person could be antifragile at the expense of the individuals fragility.

3. Don’t be a turkey

This is a Taleb metaphor about how we get fooled by randomness or more precisely the lack of it, where we don’t get information about our environment (info is in changes)

Second order stability or inestable stability. Turkey

Reference: Taleb, N. N. (2007). The black swan: The impact of the highly improbable (Vol. 2). Random house..

My brother loves motorcycling (he started slow and took several very professional courses, he was as me a mountaineer and explorer so he knows you have to be serious about risk). The other they he was telling me how a friend of a friend went out to Mexico-Cuernavaca with his son. They were good riders, in the morning they were posting videos of the son making good maneuvers. In the afternoon some tragic pictures about their accidents, got all over the place were both got killed, the son literally lost its head. **Speed increases very non linear our risk and do not mix with overconfidence, alcohol, drugs, distractions, bad luck… so avoid speed**

Most people used to take risks know this phenomena: when you are new to the activity you are in great risk but usually accidents are no so bad. Then as you get better, risk reduce and accidents pretty much stops. Then when you get really good you start to experience overconfidence and take risks you would not take before… caput!

Whenever you see the most calm, panic the most… stability does not provide information about the environment, information comes from fluctuations, so you need to not isolate form it.

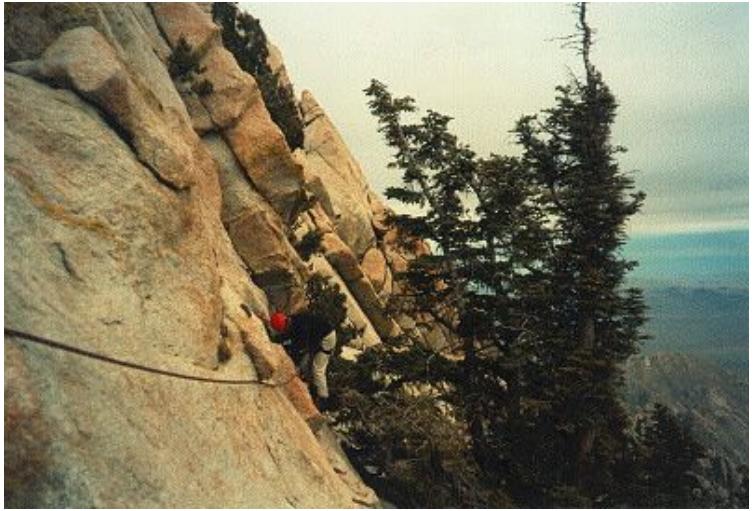
Something has happened in motorcycling is a yuge technological development downloaded to commercial bikes. So even not so good drivers can go very fast, make stunts and so on. I think this is one reason Reinhold Messner get to elderly, because he practiced (by practical and philosophical reasons) what he called renunciation mountaineering… no oxygen, no big expeditions, etc.

Path dependency

4. Don’t climb what you can’t un-climb

Avoid bad habits from very early ages and avoid as much as possible decisions that lead to irreversible consequences.

Path dependency means that what we see today is in part a consequence on previous story, so early decisions may affect in a very non-linear and usually permanent manner.



When we were training for trying the first ascent to “El escudo” the north face of Picacho del diablo Carlos (my mentor) used to take me and my brother to a near the city wall to rock climbing and a very important part of the training was unclimb. Usually people only train to climb (up) because in the top you descend by making a rappel. But what happen if you don’t use rope (as we didn’t in many parts of the expedition) or if you get lost in the wall (as happened to my brother in Peña de Bernal) there are many scenarios in classical rock climbing in which unclimb is necessary. So he was very clear: Never climb what you suspect would not unclimb which in investing translate into **never invest what you are not really ok to lose completely,** especially BTC which no matter the current price, its value in the long run is zero

6. Don’t be employable

“Being unemployable means never having a boss, creating your own world & learning the things that allows you to leave the rat race forever.”
Mark Baker
@GuruAnaerobic

We don’t understand what we see, we see what we understand. Most of us don’t understand being unemployable because most of us has been indoctrinated into getting a job and later as Taleb says we get addicted to paycheck

Reference: Taleb, Nassim Nicholas. Skin in the game: Hidden asymmetries in daily life. Random House Trade Paperbacks, 2020.

On the left we see a Mexican *tienda de raya* a labor strategy inside haciendas during the Porfiriato in which workers (almost all indigenous) entered into a payment agreement with the landlord. The system was based in a some sort of official grocery store where the employee had to “buy” all that he needed using a credit sistem that discount the bill directly from payroll. Of course prices were set by landlord way hich than it should be, so worker very quickly got into permanent depth. So in practice workers in haciendas and some factories were in fact slaves.

“Slave ownership by companies has traditionally taken very curious forms. The best slave is someone you overpay and who know it, terrified of losing his status” N.N.Taleb

The sad thing is that basically modern society is being destroyed by education system, bus specially high education where the children and the young are being indoctrinated mostly by people with limited intellect and practical skills that don’t train them for nothing more than BS job in which they become modern slaves. So don’t get never a job, start a business as young as possible, but if you really most get a job, choose one where you get paid by results not peer review, always have an actitide of fuck your money, and start a bussiness on the side.

6. Say no to don’t eat meat

Homo sapiens has been eating meat for at least… ever, but let's say some 200–300 thousand years. Of course hominids eat meat before the appearance of Homo sapiens (HS), many think that eating meat was in fact one major precursors for brain evolution, that would ultimately lead to HS irruption as species.

Do you see any broccoli on that painting?

Not eating enough animal protein in early ages may have an irreversible detrimental effect on life.

Reference: Ramirez-Carrillo Elvia, G-Santoyo Isaac, López-Corona Oliver, Olga A. Rojas-Ramos, Luisa I. Falcón, Osiris Gaona, Daniel Cerqueda-García, Andrés Sánchez-Quinto, Rosa María de la Fuente Rodríguez, Ariatna Hernández Castillo, Nieto Javier
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In 1995 the *expensive tissue hypothesis* was proposed by Leslie Aiello and Peter Wheeler. This idea basically states that as both gut and brain tissue are composed of metabolically expensive tissue that require a disproportionate amount of energy to function properly, then a big brain is incompatible with a big gut. This basic trade off translate in smaller guts but the same or more energy requirements (as brain got bigger), then the only way to make it work if changing diet to one that provide high level of nutriments, energy but easy to process, that is meat! (see Pobiner, B. 2016, Meat-eating among the earliest humans. *American Scientist*, *104*(2), 110–117.)

We think what we eat: Animal-based diet influences cerebral and microbiota networks connectivity in early ages. A study case of an indigenous community in Mexico.

Ramirez-Carrillo Elvia[1*], G-Santoyo Isaac[1*], López-Corona Oliver[2,3*], Olga A. Rojas-Ramos[1,4], Luisa I. Falcón[5], Osiris Gaona[5], Daniel Cerqueda-García[6], Andrés Sánchez-Quinto5, Rosa María de la Fuente Rodríguez[1], Ariatna Hernández Castillo[1], Nieto Javier[2].

antifragility.

Abstract

We are not individuals, we are much better described as ecosystems due to trillions of bacteria and other microorganisms that inhabit us. We now know that gut microbiota can greatly influence many physiological parameters that in turn may impact several cognitive functions, such as learning, memory, and decision making processes. This mutualistic symbiotic relation known as the gut-brain axis is also constrained by external factors such as dietary habits such as animal protein and lipids intake. Using a novel combination of Machine Learning and Network Theory techniques, we provide evidence from an indigenous population in Guerrero Mexico, that both brain and gut-microbiota connectivity, evaluated by Minimum Spanning Tree as the critical backbone of information flow, diminish under either low protein or lipids intake. We discuss then how this loss of connectivity may translate into a reduction of the individual's capacity to cope with perturbations as loss of connectivity may be linked with losses in antifragility.

Of course, due to a dose response effect, eating exclusively safe meat is not good either. Very interesting as ancient traditions such as the Orthodox Christians have a food calendar that makes you carnivorous, omnivorous, vegetarian or vegan depending on the day of the year.

Criticality

7. Don’t be too ordered or to messy

The best solver ever is nature, no matter the problem, evolution finds a solution. And evolution works as far as we know in a balance between processes that create novelty and processes that retain good partial solutions.

This balance between order and messy is called criticality and in that special configuration, the system shows the best computational and inferential capacities, that enhance them to acquire data from environment, generate models and take decisions, in the most antifragil way

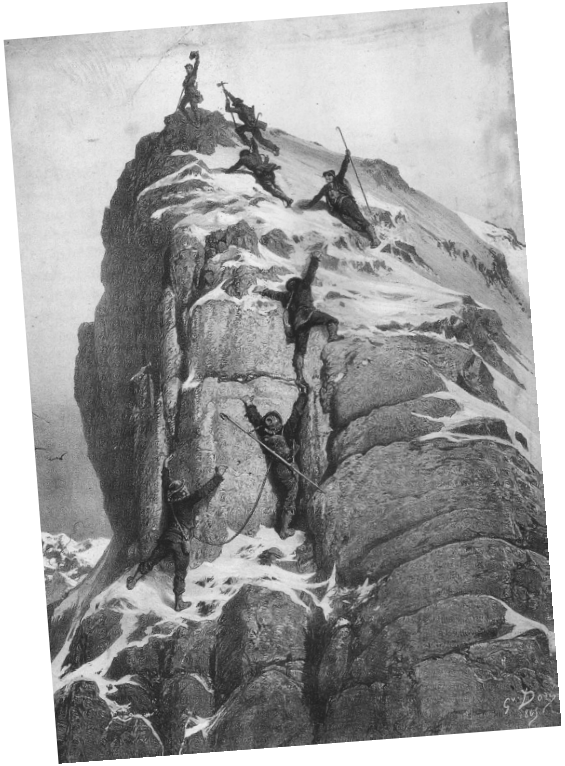
In this ancient Tao's symbol, we see two abstract serpents, one black, and one white. The white one represents "The Order" that may be interpreted as the social structured relationships well defined by consensual rules that result in predictive behaviors that enhance cooperation. On the other hand, the black serpent is "The Chaos" or the creative, random, unpredictive aspect of social interactions. In the traditional interpretation, Order is associated with male characteristics while Chaos is related to the feminine. According to Tao's wisdom, the good life is found in the line between the Order and Chaos, which is amazingly almost the title of the classic book on the field "Complexity: Life at the Edge of Chaos" by Lewin, and as I discussed in-depth in "Complectere". Most interesting, this balance between order (self-organization) and chaos (emergence) is the definition of criticality

One of my best friends (some 15 year older) took carpentry classes in middle school with a 70-80 years old veteran from Mexican revolution. The teacher was very strict about order and if you threw tools on the floor, it literally pulled your ears (SITG). So my friend is very ordered. He once worked repairing high voltage transformers and one of the first thing he did was making a tool order system. Once a tool was missing before leaving… they look everywhere and almost consider it got lost and that was it. But my friends insisted in finding it, after awhile they agree to re-open a transformer and there it was. If the equipment would have been started like that it would have explode. So order sometimes saves lives.
On the other hand if you wait for having a perfect plan, all thing needed in order, etc… you may being pass away by opportunity or respond too late as happened with pandemic when "experts" did not recommend very early mask used because lack of "evidence"... see https://medium.com/incerto/the-masks-masquerade-7de897b517b7

Interactions / contextuality

5. Don’t climb with pendejos

The very early decision of with whom start an adventure may make a yuge difference in the future and lead to irreversible consequences.



Watch out to whom you start love relations, have sex with, start bussines with… you know the initial state but not the final.

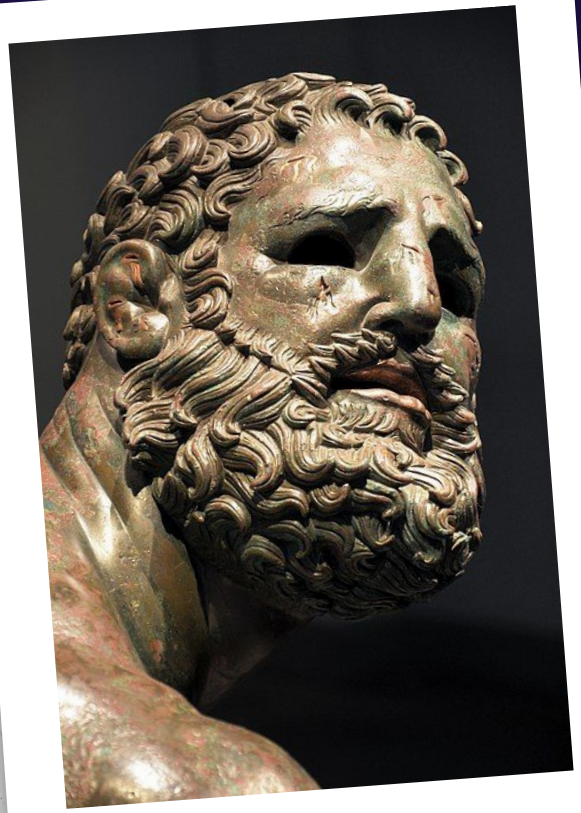
I became familiar with the history of Whymper's first ascent in 1865 because Carlos Rangel, my mountaineering and exploration mentor, gave me the book to read this ascent for several reasons. First it is a classic on mountaineering story because first Cervino Ascent and because the tragic accident: "I heard a startled exclamation of Croz and Then I saw him falling with Hadow. A moment later, Hudson was dragged behind them and Lord Douglas followed immediately. Everything happened in an instant. As soon as we heard Croz's exclamation, Peter the Elder and I clung as firmly as the rocks allowed. The rope between us was tense, and we noticed the pull at the same time. We endured it, but the rope between Taugwalder and Lord Francis Douglas broke. " **The second reason was to teach me to not climb with pendejos (incompetents) because one person falling may translate in the dead of all.**

"There is no good reason to use a rope in easy rocks, and I think that its unnecessary use can increase negligence. In difficult rocks and slopes of snow (which are improperly called ice slopes) it is a great advantage to be bound, provided the rope is handled properly, but in true ice slopes ... or on slopes where the ice is mixed with small stones and loose ... it's almost useless, because the slip of a single person can unbalance the entire group. I don't want to say that you don't have to get caught on slopes like that. Being tied gives confidence normally, and trust helps balance. The question is whether men should be in such a place. If a man knows how to stay on the steps cut on an ice slope, I don't see why deprive him of using that particular form of climbing. If you don't know, don't go near those places. " Whymper

8. Don’t mess with cauliflower ear guys

Cauliflower ear is an irreversible condition that occurs when the external portion of the ear is hit and develops a blood clot.

It is very commun with olympic wrestlers, martial arts fighters and so in general persons with violence experience somehow



Context change dramatically what you may infer from data from your surrounding. The more centext you have and understand the better… learn about many things!

You see a guy like this you don’t need to understand a ting… do not mess with him

Reference: Musashi’s The Book of Five Rings

No more explanation needed

Emergence

5. Leave it the F**k alone

Because complex systems tend to be non predictable and non controllable, sometimes the best intervention we can make upen them is living them alone

Emergence makes reference to the fact that properties of complex systems as a whole are very different, and often unexpected, from properties of their individual components.

Reference: Bar-Yam, Yaneer. Dynamics of Complex Systems. Addison-Wesley, 1997

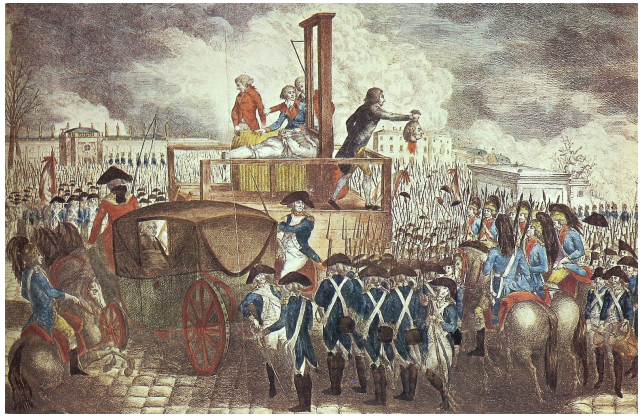
Emergent processes in complex systems require that we always consider any intervention in terms not only of its intrinsic ethical attributions, good intentions, foreseened potential benefits… but very important versus the un-foreseened second or higher order effects, indirect and distant effects, cumulative effects and tipping points, dynamics of the problem (may be the intervention transform the problem itself), context and alternatives.

Consider how naivety problem can take absurd proportions in the Syrian war example commented by Taleb in Principia Politica, where good intended interventionists fought the "dictator" without mentioning or more worrying considering that his opponents were Al-Qaeda head-cutters.

Under covid pandemic, normality (going to cafes, not wearing masks, traveling, even some Individual liberties) is a common "resource". Whenever one actor takes a "piece" or normality it gets inaccessible for others. This is known as Tragedy of the commons and it has been extensively studied that (unless payoffs changes) the optimal strategy is taking as much common resource (normality in this case) as possible. Selfishness under this scenario is the rational thing to do. This tragedy my be driven for example by enforced lockdown or vaccination.

In almost any mob phenomena otherwise decent enough people may transform themselves into an unrecognizable monstrous mob willing to commit the most horribles actions, of course with good intentions.

Never lose yourself in a mob



Link to presentation

https://docs.google.com/presentation/d/1naqqgDbeCn-TPyo1GQ0paUf4pkQKqHTQkN6dHK_sBKI/edit?usp=sharing