

Code Switching, Understanding Social Stigmas and Discrimination, a Path Towards Empathy.

No matter our race, ethnicity, class, sex, gender, social status or cultural background, we probably have code switched once or maybe more either to fit in or even to stand out.



Figure 1: Wild Mediterranean monk seal, species *Monachus monachus*, swimming freely in Alonissos Greece. Photo by Christos Nikolaou, seal: Kostis

What is Code Switching?

Code switching can be distinguished in:

A) Multilingual code switching

In the field of linguistics, there is a phenomenon known as multilingual code switching, where individuals, including children, utilize their entire range of languages rather than relying on just one.

When code switching, children can maintain a distinction between the languages they use (*Genesee et al., 2004; Meisel, 1994*). Interestingly, unborn babies have the ability to differentiate and separate between two languages (*Byers-Heinlein et al., 2010*). This type of multilingual code switching is normal and widespread, and it should not be viewed negatively or seen as something requiring

correction, as it reflects the cognitive and communicative competence of a child.

In everyday language, the term code switching is sometimes employed to describe the blending of two languages in informal and relatively stable ways, such as Spanglish (Spanish and English), Greeglish (Greek and English), Deutschlish (German and English), and so on. There are a couple of reasons why people could engage in such a form of code switching. Firstly, individuals may resort to code switching to conceal difficulties with fluency or memory in the second language, although this only accounts for a small portion of code switches. Secondly, our brains have the tendency to switch to autopilot mode during moments of stress, such as fear, anger, or intense emotions. Such an autopilot differs from person to person. Consequently, we may unconsciously default to a specific language or specific mix of languages from our linguistic repertoire. Personally, I code switch quite a bit when I speak with people who know English and German or even all three English, German and Greek. If we think about it, it is something quite remarkable because it allows human conversations and interactions to manifest simultaneously through a spectrum of different cultures, languages, inside jokes, diverse grammar, vocabulary and syntax. It can also generally be a style of language usage, a dialect, particular toning or accent or even sub communication and

particular vocabulary between a group of friends or different ages. For example, a teenager talking with their friends and peers *vs* talking with their parents. Code switching often helps us convey a thought: Certain concepts need that perfect expression to come across effectively either from a body language perspective or/and specific vocabulary. Many people switch languages or employ colloquialisms to express particular ideas and that form of code switching can be often very fun and entertaining.

Linguists investigate different instances of code switching to explore the factors that influence multilingual speakers in transitioning between languages. They aim to understand the circumstances that prompt individuals to switch from one language to another. On the other hand, sociologists study code switching to ascertain the underlying reasons behind this phenomenon, including its connection to group affiliation or the contextual environment in which the conversation takes place.

B) Code switching and masking

There is though an unfortunate and more complex form of code switching and its usage with the sole purpose to fit in.

Often, people code switch — both consciously and unconsciously — to dress, act, behave or talk more like those around them. While this can be effective,

it can also be perilous. It requires an amount of energy and compartmentalisation for it is not the true state of minimal potential energy. The principle of minimum total potential energy is a fundamental concept used in physics, chemistry, biology, and engineering. It asserts that a structure or body shall reform or displace to a position that minimizes the total potential energy, with the lost potential energy being dissipated as heat. This form of code switching requires the usage of a mask and its maintenance. These mask and maintenance cost high amounts of energy. The results of such usage are often very rewarding making it, to an extent, addictive for the user and hence evolutionary perhaps even beneficial.

Very often we may want to fit in or want to get something: A lot of folks code switch not just to fit in, but to actively ingratiate themselves to others. Other times we may want to say something in secret: Throughout history and art, there have been many sweet stories of people code using (a form of code switching) in order to hide in plain sight, a habit most common among people in love such as the stories of Anne Lister in Halifax, England in the 19th century <https://vinzenzschechner.com/codes/> or the domestic prefixoids in the secret Greek gay language "[Kaliarda](#)". [Polari, the lost language](#), used most commonly in the 1930s-1970s, mainly by gay men, lesbians, female impersonators, theatre

people and sea-queens (gay men in the merchant navy) but also by straight people who were connected to the theatre, is another example in the history of queer folks and art scene.

The Surviving Benefits and Consequences of Code Switching

Some results of a successful "mask" could often lead to getting a job, a promotion, the feeling of being accepted, avoidance of: A) constant fear, B) abusive interactions, C) discrimination, D) constant fight, E) confrontation.

Last but not least, masking, for many, often means surviving in an environment where a minority is not welcome nor accepted. Often, those results can be short term solutions; however, in the long term they can cause more harm to oneself but also to the community. Despite this, for many it remains the only solution in very particular moments. Code switching, aka masking, perpetuates racism and discrimination since our societies are constantly associating language usage, behaviours etc with bad or good things; this spills into our treatment of actual humans with specific behaviours or looks. Therefore, members of a minority community often end up unwillingly and indirectly supporting racism and discrimination of their own community by maintaining and recycling some stereotypes and biases. Whether we mean for this to happen or not (and most do

not), the result would be perpetuating discrimination. Even as we try to shut off the association, the connotations unfortunately often linger in the air. It impacts our thinking and feeling and causes hurt. However, for some it is the only way of survival and chance of existence. Although some of us choose to code switch on specific occasions it has served us well and protected us when we had no other choice. When we had no other choice for some, it was the only tool in our toolbox. When we had no other choice for some, the mask turned from a toy to a personality and from a role into a reality. From Greek to German philosophers and composers we may have heard or read that when we get used to a monster, we begin to look like it, when we stare at the abyss, the abyss stares back at us. Hence, while masking, unmasking and switching between codes, how are we sure we remain our true selves and better not only ourselves but also our surroundings? Sometimes, when we have no other choice, we want to belong and forget the struggles, some other times we must survive and remain hidden. In evolutionary biology, the species often come across fight or flight choices. The fight or flight response is an automatic physiological reaction to an event that is perceived as stressful or frightening. The perception of threat activates the sympathetic nervous system and triggers an acute stress response that prepares the body to fight or flee. Additionally, [freeze and fawn](#) are also stress responses that

don't involve decisive actions. Fawn is used after an unsuccessful fight, flight, or freeze attempt. The fawn response occurs primarily in people who grew up in abusive families or situations. The fawn response, which frequently conceals internal distress and harm resulting from trauma, is a prevalent reaction to childhood abuse. This response represents our body's emotional reaction, wherein we may become excessively agreeable towards the individual who is mistreating us. If we have post-traumatic stress disorder (PTSD), the fawn response can lead to feelings of confusion and guilt. Despite being treated poorly, our instinct compels us to appease our abuser rather than resorting to the fight or flight response. Though there is a plethora of defensive mechanisms other than fight or flight, some people from a discriminating minority have been employing code switching as the only way to survive and pivot through particular situations. Sometimes it comes down to fight or flight or stay hidden, silent and switch.

It is common to find references to Black speakers who code switch between AAVE [African-American Vernacular English] and SAE [Standard American English] in the presence of whites or others speaking SAE or police. In employment interviews (*Hopper and Williams et al, 1973; Akinnaso and Ajirotutu et al, 1982*), formal education in a range of settings (*Smitherman et al, 2000*), legal discourse (Garner and Rubin et al, 1986), and various

other contexts, it is advantageous for Blacks to have code switching competence. Code switching can be a skill that holds benefits in relation to the way success is often measured in institutional and professional settings. However, there are more dimensions to code switching than the Black/white patterns in institutional settings. Women and LGBTQI+ people in STEM often use it to fit in or survive in male dominated fields, homophobic, transphobic, or xenophobic environments. Ethnic minority members use it to mask their cultural backgrounds as a social group within a state or group that differs from the majority and/or dominant population in terms of ethnicity, language, or culture.

On the one hand, there are specifics in each minority group that should be addressed individually, as deserved, when trying to tackle such social issues. On the other hand, regardless of the minority groups, the same core problem exists and translates to **discrimination**.

How does Immunology Mirror some of our Social Struggles?

Similar to when our immunology experiments and hypotheses fail over and over again, we need to find the courage to recollect our broken pieces, motivation and buffers and think of something novel. Once we have repeated an experiment that has failed over and over again, we must think of something new, we must

evolve and try a different combination or a completely different approach, for if we stay still and frozen, artless we fail. In that direction when we can and have the mental capacity, we should choose to face the world maskless and be brave.

This is not easy at all!

We have been flooded with privileged "social media influencers" giving us "advice" to stop being poor or stop being black or queer and generally being [gaslighted](#). Standing up and trying to be brave does often require tremendous amounts of energy, financial and mental stability, supportive environments, acquired or established privileges, so let's be kind to ourselves and forgive our imperfections till the moments we find the courage to try and face our traumas. When we struggle for survival, we must try to be kind to ourselves and forgive ourselves for being on autopilot or survival mode. Sometimes we are required to stay quietly in stem cell mode and familiar niches because proliferation and differentiation require managing constant autocrine and paracrine stimulations.

A scientist does not happen overnight nor does a memory B or a T cell and neither does Change. [A rainbow sticker or welcoming inclusive symbol on a door](#) is still important and relevant but not enough. The difference sometimes is hidden in the little steps and the small daily battles, not just by voting once every

four years, it is hidden in the coffee or lunch break discussions and debates, the interactions between all immune cells and not just B and T cells. Sometimes we have to try to fight the battles we have not been brave enough to face in the past for we deserve better. Sometimes we have to try to pick the battles that are challenging and not only the ones where we know we can win. When we are critical in our scientific thinking, we must try to do the same in our personal lives, work environments and social gatherings. The difference for me is hidden in the attempt and the constant effort of not giving up, similar to how we recollect our broken pieces with a smile when our experiments have failed (and oh they have failed a lot). We should not fear failure but rather be terrified of regret for not trying when we had the chance. I have also failed personally when I did not stand up for myself or for people and colleagues in my communities when they were discriminated in front of me. I have very consciously chosen to remain silent out of fear out of trauma, discrimination sexual abuse, grieving beloved ones for they were not able to survive acute and chronic depression. I have put on my beautiful mask, compartmentalised and looked elsewhere. Fear, in a way, is a very useful strong logical emotion caused by anticipation or awareness of danger and accompanied by increased autonomic activity in many mammals and animals. Our bodies and brains evoke this emotion like all for a reason and this is often based

on previous experiences regardless of deriving from nature or nurture. We should be afraid of taking risks and pursuing something meaningful, but we should be more afraid of staying where we are if it makes us miserable. Finding the balance between being safe and being challenged is not easy at all when your inner child wants love, your teenage self wants revenge and your current self only wants peace.

To this day I still see myself code switching here and there, and I am always inspired by people who live their lives wholeheartedly and unapologetically. This gives me courage and motivation to improve and deal with my own traumas, biases, conservations and make small steps to maturation and developing empathy for myself and other members in our societies. It helps me understand the many privileges I have had in my life as a white wealthy cis man and in parallel the many privileges I never had, inequalities and traumas I carry as a sexually abused teenager, queer member coming from a conservative country (where as an example the Ministry of Education and Religious (Orthodox Christian) Affairs is one unity) in combination to my ethnic background while relocating to Germany during the worst Greek-EU financial crisis to date. I believe that getting comfortable with failure helps us keep moving, trying, not giving up and not staying paralysed. After all, we have to get comfortable with failing because it's an inevitable part of

our scientific and personal journeys. However, many people can neither mentally nor financially afford to fail and this is one privilege I have been aware of I possess.

The transition from naive to memory adaptive cells involves changes in cell trafficking, gene expression and chemokine expression, but this developmental process is not fully understood. Following priming in secondary lymphoid organs, naive T and B cells receive essential signals such as antigens, co-stimulatory molecules, and cytokines. However, their progeny, the effector and memory T cells, continue to migrate through different lymphoid and non-lymphoid organs, where they encounter additional signals.

Similar to the maturation journey of adaptive immune cells, young scientists in the field of immunology often need to relocate and adapt to different and new environments throughout their careers. We need to go over negative and positive selections, survive hypoxic environments, change tissues, adapt, downregulate and upregulate behaviours, acquire new skills and tools as well as express surface markers. We need to recombine and rearrange our genome and sometimes perform somatic hypermutation thus creating a completely novel and different set of tools. When we end up out of frame and our tools have failed us, we may be given second chances similar to antigen

receptor allelic exclusion/inclusion regulations.

How ironic is it that even in immunology our dogmas are evolving and even antigen receptor allelic exclusion or cytotoxic vs helper T cells concepts have been updated and reappraised. Thrown out of a beautiful regulation and balance and we are faced with the evolutionary price of autoimmunity, lymphomas and leukaemias. Nonetheless, sometimes we meet ourselves back where we started, now survivors, a tissue resident bone marrow memory cell, only now different, stronger, adapted cause **we may have wandered but we were never lost nor alone.**

The Power of Connection

[Pride has never been just Gay Pride and a Rainbow.](#) Visibility is of tremendous significance and even though we still have a long way to go if you feel alone know that you never were and never will be.

- The [yEFIS](#) is an initiative run by volunteers that provides a platform for young immunologists from all European countries from all race, ethnicity, class, sex, gender, social status or cultural background to connect and network in order to shape the next generation of immunologists in Europe.

- The [500 Queer Scientists](#) is a visibility campaign for LGBTQ+ people and their allies working in STEM and STEM-supporting jobs, a group that collectively represents a powerful force of scientific progress and discovery.
- The [Black In Immuno](#) is a platform created by a collective of Black immunologists and allies aimed at amplifying, celebrating and supporting Black people in immunology.
- The [Women in STEM](#) is a mechanism bridging the gap between social justice and academic fields aiming to empower and inspire girls through offering a variety of opportunities at the high school level.
- The [TRANS in STEM](#) is a place for transgender people in or considering STEM to connect and find representation. It's a place to discuss science and find mentors.
- The [LGBTQ+ STEM Berlin](#) promotes queer visibility in science technology engineering and maths located in Berlin.
- The [Soapbox Science Berlin](#) is an international series of science communication events that bring

research to the streets and highlight the work of Women in Science.

- The documentary [Picture a scientist](#) chronicles the groundswell of researchers who are writing a new chapter for women scientists following the stories of Biologist Nancy Hopkins, chemist Raychelle Burks, and geologist Jane Willenbring.

These are only some examples. To me, working closely and together with other volunteers and immunologists has taught me so many things for diverse communities but also for myself. It is very hopeful, healing and refreshing to take action, share ideas and work with young and motivated people who 100% volunteer on activities that aim to improve the status quo. We do realise that watching a documentary will not change the world over a day but perhaps it can initiate change. After all, fire is catching and a cytokine storm is a chain reaction that can be initiated from one single signal. Both improving ourselves as well as grouping with other people who share similar ideas are equally important. One signal is not enough to activate a naïve T or B cell. Once they become memory cells through their tough journeys, they are alarmed and react fast to potential threats. The purpose of memory is not to remember the past but to extract out from past lessons to structure the future. If we knew how tough and lengthy it was for

some people to regain their mental well-being and happiness, we would find it easier to understand why they shut their doors at the slightest hint of toxicity, and why they are also picky about who they allow into their lives. In times of despair and desperation, we need to activate our internal mechanisms of connecting, asking for help and reaching out. Asking for help when needed is a sign of intelligence and strength and not a weakness as many unfortunately may try to convince us. Whenever you have the capacity reach within and grasp your rage (black, velvet or white) and harness it to create something hopeful. Try to not let go, do not lose hope and do not turn into a bitter person. It is not uncommon unfortunately that people who have been discriminated and bullied become the people who had bullied them. This is also a form of code switching to its extreme when we become part of the monster.

The Power of Empathy

While writing this piece over the last year, I interviewed some queer, people of colour, trans people as well as menstruating people and women in STEM. Not being a professional psychologist has been definitely tough, not only to hear people's traumas and experiences but also to constantly be reminded of my own traumas. We want to be brave but sometimes we fail and it is ok. We only got one life, we cannot trade

it for something else, we got to figure it out. We have to give people multiple chances hoping that they will change but sometimes I am unsure if it speaks less of them for taking advantage or less of us for refusing to accept who they are. Due to extreme code switching, people have had abortions, anxiety, burn out as well as acute and chronic depression. They have committed suicide, lost beloved ones, been mentally or sexually abused, mansplained, have felt like a failure. Some manage to recollect their broken pieces and try being hopeful, but some cannot for they have never had the privilege of stability, security or afforded to fail. All those stories, their eyes and these pockets of lives deserve an essay of their own. They deserve to be heard and highlighted. Regardless of the group of minorities, the same core problem exists and translates to discrimination.

On the one hand, "opinion" could be seen as the lowest form of human knowledge due to the fact that it requires no accountability nor understanding. On the other hand, the highest form of *Homo sapiens'* knowledge could be seen as "empathy", for it requires us to suspend our egos and live in another's world and perspective. Empathy requires profound purpose, larger than the self-kind of understanding. Through our scientific journeys and interactions most of us will come across different people of race, ethnicity, class, sex, gender, social status or cultural background. It is up to us what

we keep from the stories of the people we interact with, what we translate from the reflection in their eyes or what we read between the lines. It is up to us to leave a place better than how we found it. It is up

to us to reside in a tissue or go back to the bone marrow and employ the tools we have acquired, via our journeys and secrete antibodies to contribute to an everlasting immunity.



Christos Nikolaou

Figure 2: Endangered species, Monk seal Kostis, grasping gently and willingly on a human. Photo by Christos Nikolaou, seal: Kostis

Once upon a summer, a wild monk seal, group *Pinnipedia* family *Phocidae*, species [*Monachus monachus*](#), one of the world's most endangered species, calmly joined my friends and I while swimming. Kostis, the Mediterranean monk seal, (**Figures 1 and 2**) one of the few seals remaining on the planet was a young seal that was rescued by a human and got very familiar with our species. As a biologist and an

animal lover, this encounter was a dream coming true, a once in a lifetime experience. Luckily, I had my underwater camera with me to capture this moment. Kostis gave us this wonderful experience that we will cherish for the rest of our lives. During this encounter and while calmly trying to slowly escape back to our boat, I remember thinking about all the wildlife documentaries I had watched as a kid as

well as my biology studies, about respecting the animals and wildlife while keeping distance, remaining calm, never engaging. While holding my breath, I was trying to remain calm, mind and edit my body language, communicate with my friend, respect Kostis' space and observe his body language but also manage to take some nice photos and videos. This was not a forced encounter and by any means do not try to go closer, feed, pet nor swim with wild seals/animals for your own safety but also the wildlife's! Kostis was not afraid of humans and while swimming in deep beautiful Greek waters such encounters though extremely rare could happen. In a metaphorical way [the tragic ending of Kostis](#) reminds me of some people code switching. Kostis was kind and pure, though as a highly intelligent mammal, caused troubles to local fisher men. He was so gentle and elegant that he made me feel at peace. In the silence of the crystal blue waters, I felt part of his world. For a few minutes it felt like we were in an unbelievable underwater choreography where he was the choreographer and we were his

dancers. At moments he looked at me kindly, peacefully, reassured and at other moments he gave me a sassy judgmental look "bombastic side eye" for not being as elegant as him, probably thinking I must have failed at seal school (I thought I was a skilled swimmer until then). Kostis could not code switch to adapt, hide and survive, he was unapologetically himself and he paid the price of natural selection and competition with humans. It is not an exaggeration to say that for some people code switching means surviving.

This pride month and all year long we are sending love to those who are scared to come out, lost close ones by coming out, can't come out due to safety, are unsure of their sexuality/gender, don't have a support system, are out and proud.

For this pride month can we focus from "love is love" to "women, black, queer and trans people are in danger"? Pride is still relevant and important because someone tonight still believes they are better off dead than being themselves.

To all young and old immunologists out there

Christos Nikolaou

YI-DGFI Board Member and yEFIS Task Force Member
On behalf of the yEFIS Equity and Diversity Working Group