

# On Pokémon type distribution

## Introduction: the pyramid

When we play a Pokémon game, especially if it's a mainline title we travel through a region of the pokemon world: we explore it, we see its landscape, the places, the environment, the cities, the ruins and so on. We explore mountains, snowy lands, woods, volcanoes, deserts, oceans and, of course, we meet pokémon, old and new.

It is important, for a player, to experience an immersion in the setting they are playing in, a complete one. To achieve so i've developed a concept, a scale to more or less respect to let the player fully immerse in the game: it all starts with pokemon types and what they do represent. They are almost straightforward, some more than other and they almost completely call upon us, humans and upon our imaginary and our experience: we can clearly understand the difference between bug, dragon, fire, water etc...

Still we have to understand that some concepts are more common than others, especially in the real world, for example water is everywhere, as well as grass and common, normal things, while fire is a rare occurrence and dragons belong mostly to our imagination, being quite a rare thing, together with ghosts, magic and psychic powers.

This creates a ladder, a pyramid of types that "dictates" how much common in a region, generation, or simply overall a certain type would be.

Of course it is not mandatory to follow it, but, at least i believe so, closer the distribution of types is to the pyramid, closer the mind of the player will be to the game. What is now this Pyramid? Well here it is, more or less in order of rarity:



Let's analyze briefly every type, starting from bottom:

## Water, Grass, Normal: environment and first inhabitants

**Water** is the so called source of life. We as humans need it and are in a complex relationship with it, we built civilizations around rivers or on the sea. Animals and plants need water to live and pokémon are, under certain aspects, mirrors of animals, so water must be important and common. Water is full of life and therefore we should have many water pokémon.

**Grass** as well, for motivations similar to water, shall be a common type: plants are the starting point of the food chain in the real world, and although in pokémon things are quite different we still have jungles, grasslands, woods quite often and they shall be populated by pokémon belonging to the grass type.

**Normal** pokémon, are, by definition, common. They may be less common than water and grass, but they should still be some of the most common pokémon out there. They are often related to animals we experience easily or that anyway are a staple in a setting comparable with the region we are exploring. They are the first level of inhabitants that aren't environment by themselves, while water and grass are.

## Rock, Ground, Bug: environment and second inhabitants

**Rock...**Rocks are quite common things, aren't they? In fact many people think about stones, pebbles if you ask them "tell me the name of a thing", as long as it is not refined. After rocks other stuff comes, but they are usually one of the first images to come into mind. Considering also that almost all the pokémon games have mountains and countryside and that in the sea the floor is often made out of rocks we can see why the rock type should be quite common.

**Ground** works similarly to rock, and depending on the setting it can be even more common; let's not forget that to ground is associated also sand, another important portion of the sea floor. Other than that ground is everywhere, especially for us humans, ground is where we usually set foot. Sure we have roads and all, but outside, in nature, we move above ground.

**Bug.** Well bugs are common, and they are everywhere, even in urban settings (although we recognize them less). In pokémon it's a bit different, because the dimensions of the creatures are way bigger and more noticeable, but in the right setting bugs should be a staple and one of the most common sightings.

## Flying, Poison: unique types and good second choices

Both these types are quite good to be used together with another type... we'll see this in detail later, for now..

**Flying** amongst the trees and the buildings there are many birds and bugs. Air is all around us and although as for now only Tornadus embodies air itself there is a lot of potential to use the flying type in more ways linked to the wind itself.

**Poison** and venom are not that uncommon in nature, maybe they aren't the most common thing, but especially in the wild you never know. Poison is also one of the most common "strange effects" that can be observed in nature, way more common than lightning (if not during storms) and fire. Also in pokémon it is associated with acid and almost all animals possess acid in their stomach or other forms of acid usage.

## Dark, Ice, Fighting: inhabitants and a peculiar environment

Two of these types are really fitting for many creatures, while a third one is really linked with a cold environment.

**Dark** other than signifying evil in Japan is also linked to the way more common instance of night and darkness. Many hunters act thanks to it, but also more pacific animals that love to be active without the sun to avoid being disturbed. The dark type is perfect for many inhabitants of a region.

**Ice** is peculiar and it is one of those types that can change its frequency pretty easily, depending on the setting. In a polar region, for example it would become one of the most common, while in other ones it could easily disappear. Let's keep it in the middle on average.

**Fighting** has to be quite common, considering that it contains within itself sport inspired creatures, heroes and benevolent ones and strong, resilient pokémon that thrive and fight everyday. In the real world life is a struggle, a battle and animals know that. That is why fighting should be a more common type.

**Electric, Fire, Steel, Ghost: phenomena and toughness, rare instances.**

**Electric** should be a rarer type. In nature almost the only instance we have of electricity are the lightnings and some creatures able to cause electrical shocks (but they are rare). Sure, lightning is common per se, but quite powerful and it should be used moderately.

**Fire** is more or less the same as electric. It is rare, it is dangerous and it isn't that much connected with nature. Surely, together with electric and steel in an industrial setting its percentage could increase in a quite meaningful way, but in a standard environment, no.

**Steel** is manmade in nature, although with steel in pokémon we tend to regroup many different metals, so it can be a bit more common. We also associate steel type with toughness and resilience, all features that in nature tend to appear. So steel can be rare or more common depending on the setting. Personally in a neutral region it should be quite uncommon.

**Ghost** should be rare enough because the type is connected mostly with a paranormal phenomenon or other issues that we humans perceive as paranormal/supernatural/horrific. Given the fact that the ghost type has a broader extension and can be used to link a pokémon just with its ability to hide and move in the shadows this type should be a bit more common than the other 3 supernatural ones, being psychic, fairy and dragon.

**Fairy and Psychic: magic unfolded**

Both psychic and fairy type relate to supernatural/paranormal effects, that are, by definition, incredibly rare occurrences linked mostly with our imagination, inability to understand a phenomenon or simply our fantasy.

**Fairy** has seen quite an extension of its expressions, being often related to cuteness, even without strong links to magical forces and for this reason the number of fairies could be bigger, but by default I'd keep it scarce, remaining linked to magic, arcan powers, not necessarily controlled by the mind and often spontaneous.

**Psychic** on the other hand is linked to the control of the mind over incredible, paranormal powers. It is often associated with sentient beings and pokémon with humanoid appearance. Although just by the connection established I feel it should be a rare type it is in fact a bit more common than I'd expect and that is because of the fact that the psychic powers are given way more freely than I'd imagine. There is probably some bias from me in putting the psychic type so high, and it should be maybe a bit more common, maybe switching place with ghost type, but we will discuss all of this later.

**Dragon: the top**

The Dragon is a powerful symbol, inhabiting the mind of many cultures across the planet. It embodies human feelings, but also fear and features that are considered superior, rare, incredible. It also has a connection with magic in its pure form, like fairy, but in a wilder, more brutal way. For these reasons and the fact that, to me at least, it should feel special, the dragon type should be the rarest type.

## Legendaries, what to do with them?

Legendaries, and other special pokémon like Rotom or the starters are to be considered separated from the pyramid: legendaries/mythical and special ones because they actually do not belong to the environment, to the setting. For example, Palkia, even if it is connected with Sinnoh it is not a representative of Sinnoh's pokémon, while a combee or a gible are. Additionally legendaries/special/mythical have types at their pleasure, what i mean is that by themselves they often set themselves apart from the pyramid: many psychic and dragon pokémon are legendaries for example, as well as fire and electric..

Starters on the other hand are given to the trainer and can't usually be met in the wild. For this reason they should be separated from the total, or if included they still have to be considered. For example the fire type should take into account and remember that (as for now at least) there are always 3 pokémon belonging to that type.

Anyway the main point is that they are given to the player and not met, therefore their contribution to the purpose of this dissertation is less impactful.

## The numbers, the proportions

Now that i have explained the Pyramid a person may ask: "Well, i see, but what exactly are the numbers, the proportions? If i have 100 pokémon, how many should be dark type?"

Very well, let's dig into this discussion further.

As you can see in the pyramid i grouped in tiers, in levels, the different types: that is my preferred choice, but since of course we don't require the number of poison and flying pokémon to be exactly the same, we just would like to have an average number of them, maybe more flying and less poison in a specific region, but their average should correspond to the tier.

To help ourselves in this we can use, together with a tier distribution a continuous one and work a bit with both. The continuous one helps us to understand what should be more or less present, while the tier one tells us how to put the numbers together.

As a general rule, when averaging it would be better for the minimum number of representatives of one type of a tier to not be inferior to the maximum of the following tier.

For example if the average tier 1 is 20 and the average tier 2 is 17 if i have 18 normal type i'd also have at maximum 18 bug type and, if i have 19 bug type then the number of normal type pokémon should not be smaller than 19. Of course this is just a general rule, if we deem really fitting for a type to have more or less representatives we may just let it switch tier with another one, after all we are just starting with a general tier, but as we will see later there are other tier distributions for different settings.

This said there is one last rule that i used for the general setting and that is to not have a type in a tier if in that tier or in the lower one there isn't a single type that is supereffective against the starting one or that is immune to the starting one or, although less important, resists it. This is what i call the **rule of the check**

For example if in my tier 1 i have only grass, normal and bug, and in tier 2 i have electric and flying i can't have fire or poison in tier 2 or 3. If i have, for example ground or water in tier 1 then i can put fire or poison in tier 2 or 3 (or even 1). That is the main reason why dragon is often near the top, because it is supereffective only against itself (so it doesn't contribute to the rule of check) and it is weak only to fairy and ice that are already rare types (generally).

Well now i'll show some distributions.

Packed Distribution	Tier 1 (22)			Tier 2 (16)			Tier 3 (14)		Tier 4 (11)			Tier 5 (8)				Tier 6 (7)		Tier 7 (4)
Over 150 Pokémon	Water	Grass	Normal	Ground	Rock	Bug	Flying	Poison	Dark	Ice	Fighting	Electric	Fire	Steel	Ghost	Fairy	Psychic	Dragon
Percentage of double types: 67%	22	22	22	16	16	16	14	14	11	11	11	8	8	8	8	7	7	4
	15%	15%	15%	11%	11%	11%	9%	9%	7%	7%	7%	5%	5%	5%	5%	5%	5%	3%

Continous Distribution	Water	Grass	Normal	Ground	Rock	Bug	Flying	Poison	Dark	Ice	Fighting	Electric	Fire	Steel	Ghost	Fairy	Psychic	Dragon
Over 150 Pokémon	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4
	14%	13%	13%	12%	11%	11%	10%	9%	9%	8%	7%	7%	6%	5%	5%	4%	3%	3%

As we can see these are just theoretical, perfect distributions, but as i said before we don't have to strictly follow them, but keep an eye on them as guidelines.

This specific scheme follows the pyramid and gives more precise numbers to it, so we can actually imagine a new generation composed of 150 pokémon following this scheme.

Summing all the pokémon we reach a total of 225 pokémon, this, over 150 pokémon gives us around 66% extra pokémon. These aren't pokémon in excess, but are instead the percentage of double type pokémon in the generation. Increasing or decreasing this percentage allows us to modify the number of pokémon in each tier, but i found it to be quite a good balance. It can also be reasonable to have a total of 230 and increase tier 2 to 17 and tier 3 to 15. Anyway keep in mind this is an indicative guide and if we want to have a total of 5/6 dragons it can be okay. We can overall increase the total and increase the percentage of double types as well. Actually we have to consider the following point: these tables are elaborated over a group of 150 pokémon, maybe it would be more reasonable (for a starting sample) to keep a look at a smaller total, to simulate the exclusion of legendaries and starters.

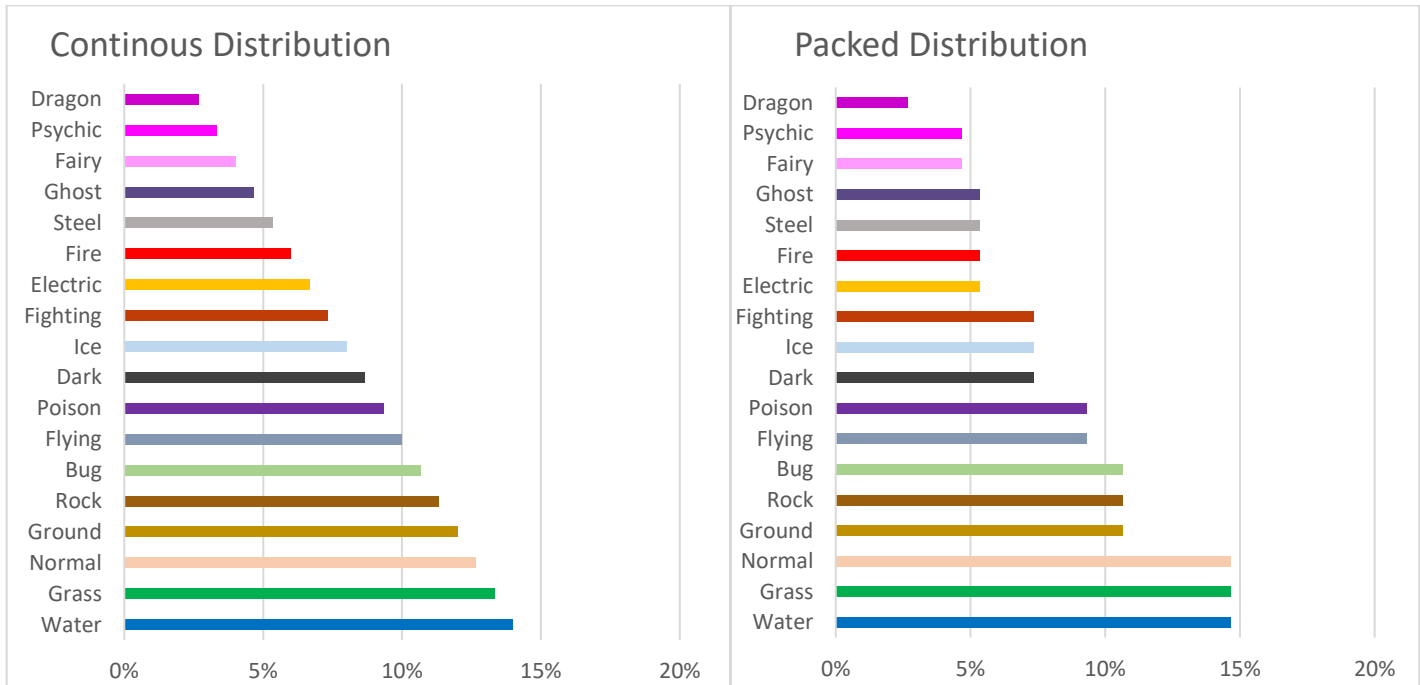
The following table pursue this goal, being based over a total of 130 pokémon (the percentages won't change).

Packed Distribution	Tier 1 (19)			Tier 2 (14)			Tier 3 (12)		Tier 4 (10)			Tier 5 (7)				Tier 6 (6)		Tier 7 (3)
Over 130 Pokémon	Water	Grass	Normal	Ground	Rock	Bug	Flying	Poison	Dark	Ice	Fighting	Electric	Fire	Steel	Ghost	Fairy	Psychic	Dragon
No starters/legendaries	19	19	19	14	14	14	12	12	10	10	10	7	7	7	7	6	6	3
	15%	15%	15%	11%	11%	11%	9%	9%	7%	7%	7%	5%	5%	5%	5%	5%	5%	3%

Continous Distribution	Water	Grass	Normal	Ground	Rock	Bug	Flying	Poison	Dark	Ice	Fighting	Electric	Fire	Steel	Ghost	Fairy	Psychic	Dragon
Over 130 Pokémon	18	17	16	16	15	14	13	12	11	10	10	9	8	7	6	5	4	3
No starters/legendaries	14%	13%	13%	12%	11%	11%	10%	9%	9%	8%	7%	7%	6%	5%	5%	4%	3%	3%

Even in this case we could of course sacrifice some tiers, reducing the number of pokémon there and increase the higher tiers, but as said before it would be more fitting to just follow this structure. We can imagine a region with only 3 dragon pokémon (we already had first and fourth gen, while second gen had only 1) and then many, many water, grass, normal etc...

This is a graph that better depicts the pyramidal distribution:



## Different climate, different distributions

Now that we have learned the basics we can see some interesting scenarios and modifications to the pyramid system.

Although we can still keep a pyramidal system we can see what happens if the setting of a pokemon game varies, having different types in different tiers when the environmental conditions change.

Tier 1 (32)	Tier 2 (21)		Tier 3 (16)			Tier 4 (11)				Tier 5 (9)				Tier 6 (6)			Tier 7 (5)
Water	Rock	Normal	Ground	Flying	Grass	Poison	Ice	Dark	Fighting	Steel	Psychic	Ghost	Fairy	Bug	Dragon	Electric	Fire
32	21	21	16	16	16	11	11	11	11	9	9	9	9	6	6	6	5
21%	14%	14%	11%	11%	11%	7%	7%	7%	7%	6%	6%	6%	6%	4%	4%	4%	3%

For example here we can observe an oceanic settings (not even that tropical) with water pokémon belonging to a separate tier from everything else. In this scenario the seventh tier is occupied by fire type, while dragons are moved to the sixth tier, together with electrical pokémon and bug ones. The latter because usually water critters are only water type (think of crabby), with the only exception of anorith/armaldo being bug.

Tier 1 (21)	Tier 2 (16)			Tier 3 (14)					Tier 4 (12)				Tier 5 (10)			Tier 6 (8)		Tier 7 (4)
Normal	Fighting	Ground	Dark	Water	Steel	Poison	Flying	Bug	Electric	Fire	Grass	Ghost	Psychic	Fairy	Rock	Ice	Dragon	
21	16	16	16	14	14	14	14	14	12	12	12	10	10	10	8	8	4	
14%	11%	11%	11%	9%	9%	9%	9%	9%	8%	8%	8%	7%	7%	7%	5%	5%	3%	

Another really interesting scenario is an industrial setting. Here the normal type is the most common and dark ground and fighting are also usually rich in representatives in these scenarios, while more natural types (like water or grass) move towards rarity. Fire, electric and steel, followed by human connected types (psychic, fairy, ghost) become more common as well, because of industry and energy. The poison type could become even more common, but it depends on the society where the setting is. I have prepared also some continuous distributions to show. Of course there can be many different combinations we can think of, these are just examples that show how we can adapt this tier subdivision to many cases. In the next page I'll show the other ones I have prepared, but I'd like to focus on the first one, the mountain setting: in this case I thought it would've been more reasonable to have only 6 tiers, because much more stuff is packed and concentrated in this scenario.

Tier 1 (21)		Tier 2 (16)				Tier 3 (13)					Tier 4 (10)			Tier 5 (7)		Tier 6 (5)	
Rock	Ground	Flying	Grass	Normal	Fighting	Steel	Dark	Ice	Bug	Water	Ghost	Fire	Psychic	Dragon	Fairy	Poison	Electric
21	21	16	16	16	16	13	13	13	13	13	10	10	10	7	7	5	5
14%	14%	11%	11%	11%	11%	9%	9%	9%	9%	9%	7%	7%	7%	5%	5%	3%	3%

We could have poison as tier 7 to be honest, but I wanted to keep it together with electric to not have too many single type tiers.

We may of course adapt this tier system to single portions of a bigger region, but before continuing the discussion i'll show the other examples that i'll not discuss in detail, although i think the reasons behind the placement of the types can be easily assumed correctly just by looking at the tables.

Tier 1 (20)			Tier 2 (17)				Tier 3 (13)			Tier 4 (10)			Tier 5 (7)		Tier 6 (5)		Tier 7 (4)
Grass	Bug	Poison	Water	Ground	Dark	Flying	Psychic	Fairy	Ghost	Fighting	Rock	Normal	Dragon	Electric	Fire	Steel	Ice
20	20	20	17	17	17	17	13	13	13	10	10	10	7	7	5	5	4
13%	13%	13%	11%	11%	11%	11%	9%	9%	9%	7%	7%	7%	5%	5%	3%	3%	3%

Jungle setting

Tier 1			Tier 2			Tier 3			Tier 4		Tier 5		Tier 6			Tier 7	
Normal	Grass	Ground	Flying	Water	Bug	Electric	Rock	Poison	Dark	Fighting	Ghost	Ice	Steel	Psychic	Fire	Dragon	Fairy
18	18	18	15	15	15	13	13	13	12	12	10	10	9	9	9	8	8
12%	12%	12%	10%	10%	10%	9%	9%	9%	8%	8%	7%	7%	6%	6%	6%	5%	5%

Grasslands setting

Water	Normal	Ice	Rock	Fighting	Steel	Flying	Dark	Ground	Grass	Ghost	Fairy	Electric	Psychic	Bug	Poison	Dragon	Fire
21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4
14%	13%	13%	12%	11%	11%	10%	9%	9%	8%	7%	7%	6%	5%	5%	4%	3%	3%

Cold coastal environment (continous)

Rock	Ground	Fire	Steel	Fighting	Normal	Dark	Poison	Dragon	Flying	Ghost	Fairy	Psychic	Electric	Bug	Grass	Water	Ice
21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4
14%	13%	13%	12%	11%	11%	10%	9%	9%	8%	7%	7%	6%	5%	5%	4%	3%	3%

Volcanic setting (continous)

Now we are going to talk about smaller pools of pokémon and bigger pools of pokémon, but one thing before going on with the dissertation:

### Regional forms

Regional forms are considered as separate pokemon both for type count and on the total of a generation because they change the number of pokémon of a certain type even if they have the same pokédex number as other ones. The same goes with local forms that can be met separatedly (think wormadam, oricorio, but not silvally for example). Additionally these forms count only once if they share a type (for example 3 wormadam count as 1 bug). I'd use this rule for new possible generations or regional distributions.



Continous Distribution with less overall Pokémon (90)	Water	Grass	Normal	Ground	Rock	Bug	Flying	Poison	Dark	Ice	Fighting	Electric	Fire	Steel	Ghost	Fairy	Psychic	Dragon
	12,6	12,0	11,4	10,8	10,2	9,6	9,0	8,4	7,8	7,2	6,6	6,0	5,4	4,8	4,2	3,6	3,0	2,4
	14%	13%	13%	12%	11%	11%	10%	9%	9%	8%	7%	7%	6%	5%	5%	4%	3%	3%

Continous Distribution with less overall Pokémon (75) (without starters/legendaries)	Water	Grass	Normal	Ground	Rock	Bug	Flying	Poison	Dark	Ice	Fighting	Electric	Fire	Steel	Ghost	Fairy	Psychic	Dragon
	10,5	10,0	9,5	9,0	8,5	8,0	7,5	7,0	6,5	6,0	5,5	5,0	4,5	4,0	3,5	3,0	2,5	2,0
	14%	13%	13%	12%	11%	11%	10%	9%	9%	8%	7%	7%	6%	5%	5%	4%	3%	3%

Continous

Packed Distribution with less overall Pokémon (90) with some manual modifications	Tier 1 (13)			Tier 2 (10)			Tier 3 (8)		Tier 4 (7)			Tier 5 (5)				Tier 6 (4)		Tier 7 (2)
	Water	Grass	Normal	Ground	Rock	Bug	Flying	Poison	Dark	Ice	Fighting	Electric	Fire	Steel	Ghost	Fairy	Psychic	Dragon
	13	13	13	10	10	10	8	8	7	7	7	5	5	5	5	4	4	3
	15%	15%	15%	11%	11%	11%	9%	9%	7%	7%	7%	5%	5%	5%	5%	5%	5%	3%

Packed Distribution with less overall Pokémon (75) (without starters/legendaries)	Tier 1 (11)			Tier 2 (8)			Tier 3 (7)		Tier 4 (6)			Tier 5 (4)				Tier 6 (3,5)		Tier 7 (2)
	Water	Grass	Normal	Ground	Rock	Bug	Flying	Poison	Dark	Ice	Fighting	Electric	Fire	Steel	Ghost	Fairy	Psychic	Dragon
	11	11	11	8	8	8	7	7	6	6	6	4	4	4	4	3,5	3,5	2
	15%	15%	15%	11%	11%	11%	9%	9%	7%	7%	7%	5%	5%	5%	5%	5%	5%	3%

Packed

We can see an issue coming up: with less pokémon overall the number of pokémon belonging to a rare type becomes really really small. If you consider for example the distribution with legendaries and starters included you can see how the dragon type is already saturated just with 3 pokémon. Not only that, if we take away the starters, especially from fire type, we find ourselves with just 2 empty places.

Slightly better for the types of the starters if we consider a distribution after the starters and legendaries are removed, reaching a total of 4 pokémon. The dragon type (but also fairy, psychic etc..) on the other hand is reduced just to 2 possible representatives. We can of course change the proportions a bit, but as you can see with a small pool of pokémon we find ourselves in troubles when having to prepare the landscape of pokémon that will be present out there. That is why i personally don't like small pools of pokémon for new generations and all of them, without considering starters and legendaries should at least have around 90/100 pokémon. (This gives us a precise perspective onto newer generations, from 6th onward).

Before moving forward with an analysis of current distributions in already existing generations we will have to extend the discussion from generations to regional dexes:

in later generations we have seen (reasonably i'll add) the addition of older pokémon to the environment of a region. This is a positive fact, because it allows to increase the number of species and therefore even the smaller tiers can have a good number of representatives.

But if we do not use the tier distribution then the addition of older pokémon can actually diminish the feeling of immersion: if we add dragons in the first parts of a game (looking at Alola, but also Galar) we are diminishing their perception as rare creatures and although it can be okay it still feels a bit offsetting.

This is not to say that they cannot be there already, but maybe they should be hidden, they may require way more exploration or simply backtracking.

On the other hand there is another negative aspect about using older pokémon and that is relying on them for the purpose of filling the environment: this takes away innovation and completeness from a new generation because it feels better to have a decent amount of representatives (especially if we follow, more or less, the pyramid tiers) for each type.

To summarize: while a while region and/or generation should follow the standard tier pyramid or a different one if the setting allows so, in its totality we shall not forget that a region is a good portion of space, of terrain. Inside a region we can have microregions. There of course we don't have to follow the tier list, while instead we'll find more pokémon related to that specific area that will contribute to the total. This feels like an obvious thing to say, but it's better to say it clear, after all we don't have to apply the same rule at all levels: the smaller ones are unaffected by the pyramid although they contribute to it.

The last concept i'd like to introduce is the power balance: legendaries excluded it would be better if the average total sum of stats of a type increased with the tier position: less pokémon there are for a type, more power they should retain. If not we would have a lack of equilibrium, with some types having many representatives and many powerful ones and thus lowering the immersion that is instead based on real world concepts like food chain and hierarchy in the animal kingdom.

Of course it is okay to have specific pokémon that distantiate themselves from the average and i am, as for now unsure if this balance should take into account only the fully evolved pokémon or all of them.

Either the case later in the discussion i have plotted both the averages, but i couldn't take away legendaries and special for them, so, from a objective point of view these specific datas aren't all that much relevant, but they can still be a bit useful for some comparisons.

Now let's start with the analysis of existing generations and let's observe them thanks to the conclusions we have reached thus far.

	Water	Grass	Normal	Ground	Rock	Bug	Flying	Poison	Dark	Ice	Fighting	Electric	Fire	Steel	Ghost	Fairy	Psychic	Dragon
1st gen total	32	14	22	14	11	12	20	33	0	5	8	9	12	2	3	5	14	3
1st gen %	21%	9%	15%	9%	7%	8%	13%	22%	0%	3%	5%	6%	8%	1%	2%	3%	9%	2%
1st gen partial %	21%	9%	15%	9%	7%	8%	13%	22%	0%	3%	5%	6%	8%	1%	2%	3%	9%	2%
2nd gen total	18	10	17	10	7	10	19	4	6	5	3	8	10	4	1	8	10	1
2nd gen %	18%	10%	17%	10%	7%	10%	19%	4%	6%	5%	3%	8%	10%	4%	1%	8%	10%	1%
2nd gen partial %	20%	10%	16%	10%	7%	9%	16%	15%	2%	4%	4%	7%	9%	2%	2%	5%	10%	2%
3rd gen total	28	17	18	13	12	14	12	5	10	6	7	4	7	9	6	5	20	9
3rd gen %	21%	13%	13%	10%	9%	10%	9%	4%	7%	4%	5%	3%	5%	7%	4%	4%	15%	7%
3rd gen partial %	20%	11%	15%	10%	8%	9%	13%	11%	4%	4%	5%	5%	8%	4%	3%	5%	11%	3%
4th gen total	15	15	18	11	7	9	15	8	7	7	8	7	6	11	8	2	9	6
4th gen %	13%	13%	16%	10%	6%	8%	13%	7%	6%	6%	7%	6%	5%	10%	7%	2%	8%	5%
4th gen partial %	19%	11%	15%	10%	7%	9%	13%	10%	5%	5%	5%	6%	7%	5%	4%	4%	11%	4%
5th gen total	17	20	17	12	10	18	18	7	16	7	16	11	15	12	9	3	15	10
5th gen %	11%	13%	11%	8%	6%	12%	12%	4%	10%	4%	10%	7%	10%	8%	6%	2%	10%	6%
5th gen partial %	17%	12%	14%	9%	7%	10%	13%	9%	6%	5%	6%	6%	8%	6%	4%	4%	10%	4%
6th gen total	9	9	8	2	8	3	8	2	6	4	4	3	8	4	8	13	6	9
6th gen %	13%	13%	11%	3%	11%	4%	11%	3%	8%	6%	6%	4%	11%	6%	11%	18%	8%	13%
6th gen partial %	16%	12%	14%	9%	8%	9%	13%	8%	6%	5%	6%	6%	8%	6%	5%	5%	10%	5%
7th gen total	13	14	14	6	8	11	8	10	8	5	10	11	9	12	10	13	10	9
7th gen %	12%	13%	13%	6%	7%	10%	7%	9%	7%	5%	9%	10%	8%	11%	9%	12%	9%	8%
7th gen partial %	16%	12%	14%	8%	8%	9%	12%	8%	6%	5%	7%	6%	8%	6%	5%	6%	10%	6%
8th gen total	11	10	8	5	5	7	6	6	12	9	9	9	7	9	9	9	15	11
8th gen %	10%	9%	7%	5%	5%	6%	6%	6%	11%	8%	8%	8%	6%	8%	8%	8%	14%	10%
8th gen partial %	15%	12%	13%	8%	7%	9%	11%	8%	7%	5%	7%	7%	8%	7%	6%	6%	10%	6%

This first table includes legendaries, starters and special pokemon and shows us their numbers and percentages generation per generation. Galar and Alolan forms are considered separately as well as rotom forms, meloetta, oricorio and wormadam.

The grey cell in 8th gen total / flying is differentiated because, to be exact it should've been a 7, but i am not considering galarian zapdos a flying pokemon, so 6 goes in there. Doduo and Dodrio are too much cemented already and can't be changed, but at least that zapdos, to me, is not flying type.

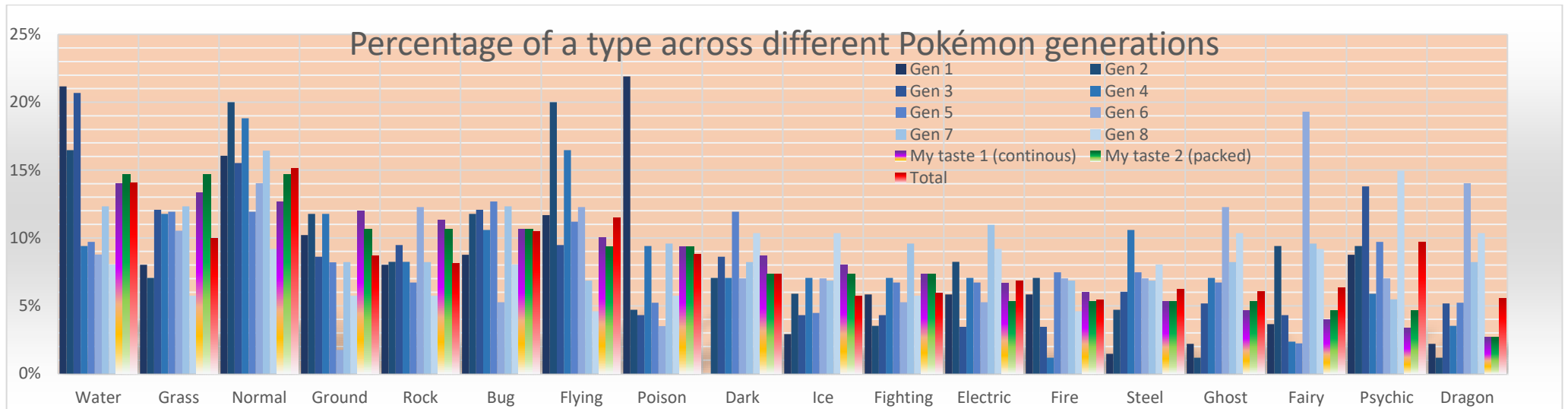
This first table is not that much important anyway, now let's get into better datas, tables and graphs.

No starter/ no  
 legendaries / no special  
 (Rotom, UB)

	Water	Grass	Normal	Ground	Rock	Bug	Flying	Poison	Dark	Ice	Fighting	Electric	Fire	Steel	Ghost	Fairy	Psychic	Dragon
1st gen total	29	11	22	14	11	12	16	30	0	4	8	8	8	2	3	5	12	3
1st gen %	21%	8%	16%	10%	8%	9%	12%	22%	0%	3%	6%	6%	6%	1%	2%	4%	9%	2%
1st gen partial %	21%	8%	16%	10%	8%	9%	12%	22%	0%	3%	6%	6%	6%	1%	2%	4%	9%	2%
2nd gen total	14	6	17	10	7	10	17	4	6	5	3	7	6	4	1	8	8	1
2nd gen %	16%	7%	20%	12%	8%	12%	20%	5%	7%	6%	4%	8%	7%	5%	1%	9%	9%	1%
2nd gen partial %	19%	8%	18%	11%	8%	10%	15%	15%	3%	4%	5%	7%	6%	3%	2%	6%	9%	2%
3rd gen total	24	14	18	10	11	14	11	5	10	5	5	4	4	7	6	5	16	6
3rd gen %	21%	12%	16%	9%	9%	12%	9%	4%	9%	4%	4%	3%	3%	6%	5%	4%	14%	5%
3rd gen partial %	20%	9%	17%	10%	9%	11%	13%	12%	5%	4%	5%	6%	5%	4%	3%	5%	11%	3%
4th gen total	8	10	16	10	7	9	14	8	6	6	6	6	1	9	6	2	5	3
4th gen %	9%	12%	19%	12%	8%	11%	16%	9%	7%	7%	7%	7%	1%	11%	7%	2%	6%	4%
4th gen partial %	18%	10%	17%	10%	9%	11%	14%	11%	5%	5%	5%	6%	4%	5%	4%	5%	10%	3%
5th gen total	13	16	16	11	9	17	15	7	16	6	9	9	10	10	9	3	13	7
5th gen %	10%	12%	12%	8%	7%	13%	11%	5%	12%	4%	7%	7%	7%	7%	7%	2%	10%	5%
5th gen partial %	16%	10%	16%	10%	8%	11%	13%	10%	7%	5%	6%	6%	5%	6%	4%	4%	10%	4%
6th gen total	5	6	8	1	7	3	7	2	4	4	3	3	4	4	7	11	4	8
6th gen %	9%	11%	14%	2%	12%	5%	12%	4%	7%	7%	5%	5%	7%	7%	12%	19%	7%	14%
6th gen partial %	15%	10%	16%	9%	8%	11%	13%	9%	7%	5%	6%	6%	5%	6%	5%	6%	9%	5%
7th gen total	9	9	12	6	6	9	5	7	6	5	7	8	5	5	6	7	4	6
7th gen %	12%	12%	16%	8%	8%	12%	7%	10%	8%	7%	10%	11%	7%	7%	8%	10%	5%	8%
7th gen partial %	15%	10%	16%	9%	8%	11%	12%	9%	7%	5%	6%	7%	6%	6%	6%	6%	9%	5%
8th gen total	7	5	8	5	5	7	4	5	9	9	5	8	4	7	9	8	13	9
8th gen %	8%	6%	9%	6%	6%	8%	5%	6%	10%	10%	6%	9%	5%	8%	10%	9%	15%	10%
8th gen partial %	14%	10%	15%	9%	8%	10%	11%	9%	7%	6%	6%	7%	5%	6%	6%	6%	10%	6%

Now this is the table we are going to look at. To be precise now i'll show some graphs that let us visualize all better, but first a clarifications:

No Ultra Beasts because they come from other worlds, even if they have to be considered common/normal pokémon they still do not belong to the main region of the game where they appear. No Rotom for similar reasons. That pokémon although now it's under all aspects a common pokémon retains many peculiarities and some oddness and in the latest games it is far too common (dex/phone etc..) so i decided to not consider it as well as others detailed before.



This graph compares the number of the previous table with the proportions i presented earlier (continuous and packed). We also have displayed (the reddish column) the percentages over the total (without legends, starters etc...)

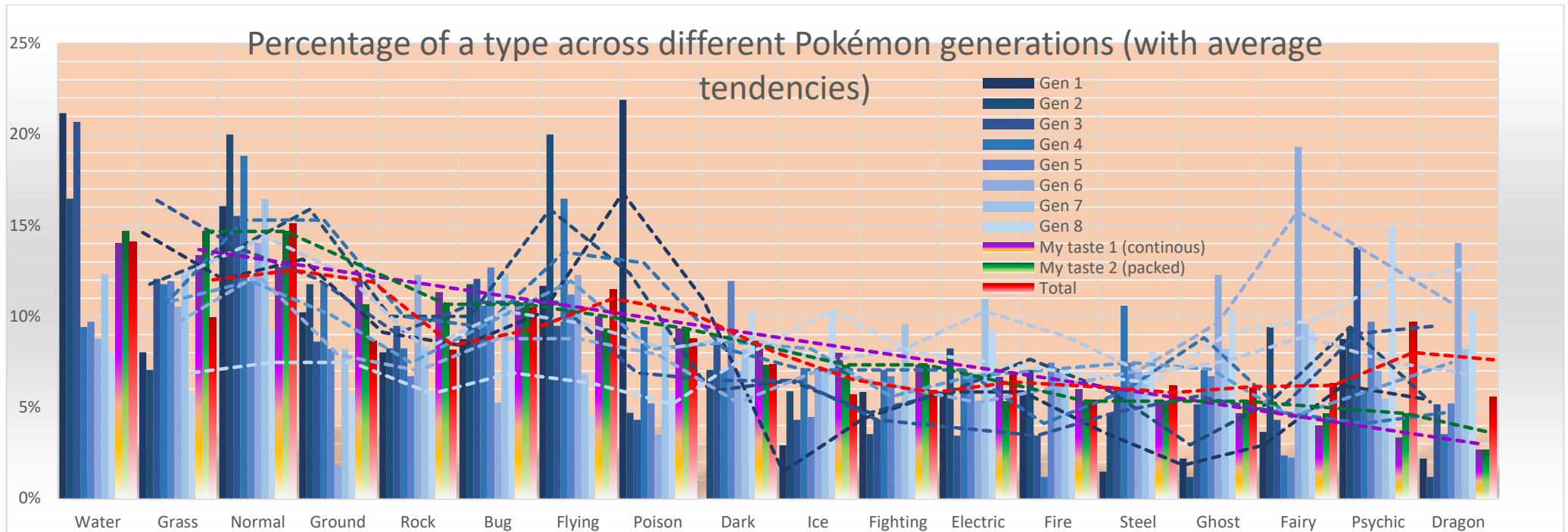
Especially looking at the total, but also at the general trend we can already see that a curve forms and this curve, in general at least follows the pyramid, more or less.

There are some peaks and valleys that we will analyze later, generation per generation, but we can focus on some things already (that i remind you, being all this discussion based on my opinion are, at least partially, subjective):

- 1) There aren't enough grass type pokémon. This is, to me personally, a major issue because it almost completely takes away immersion in many settings, just to say one: Galar region (but also Kanto). Considering that oddish, one of the most common grass types is available only in the wild area we actually lose a chunk of immersion possibilities.
- 2) Psychic is far too common. Now as i already said i may be biased towards the psychic type, but i think it should be a rarer type, instead we see the psychic type being far more common than i'd expect.
- 3) There aren't enough grass and rock type pokémon. Now we have been in some regions where the abundance of at least rock types could've been questionable, but i still believe that at least ground types should be more common. I understand that, especially the latter is a difficult type to develop into a creature and there is the risk of running out of ideas quite easily. But at least with the Rock type there are many more creatures that could appear and i hope the curve will increase for them thanks to future generations
- 4) There is an increase in the percentage of dragon types generation per generation. Now i can be okay with modifying the curve a bit and i love dragon types, but they should not become more common than they are already and surely they should not become more common than the middle and lower tiers. They could get on par

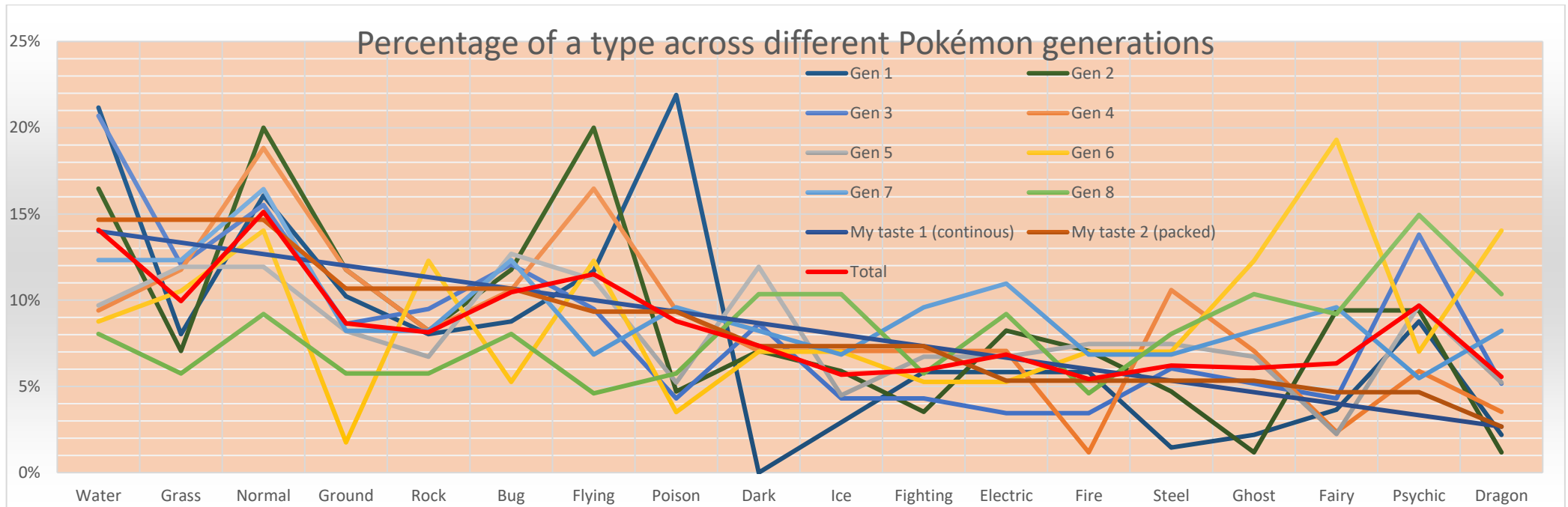
with fairy and psychic (once lowered), that could happen and it wouldn't be that much of a problem although i could also see an increase in fairy type with time, so, just think about these situations.

- 5) Speaking of fairy type it of course has a different curve, because it was introduced later and then there has been some retconning of older generations so we can understand its curve to be slightly "strange"



This graph (that i understand could be more difficult to read shows the tendency, a line that more or less aproximates the way the number of pokémon of a certain generation is subdivided in different types. Closer such a line is to the green or purple line, closer they are to the pyramid scheme discussed before.

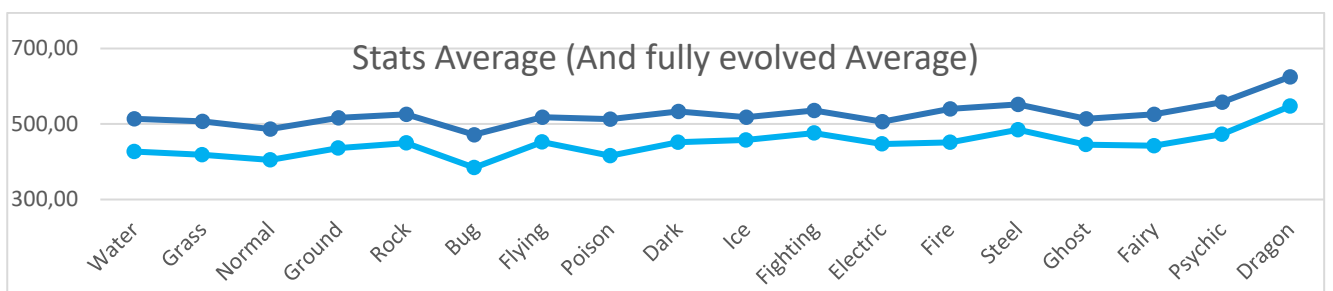
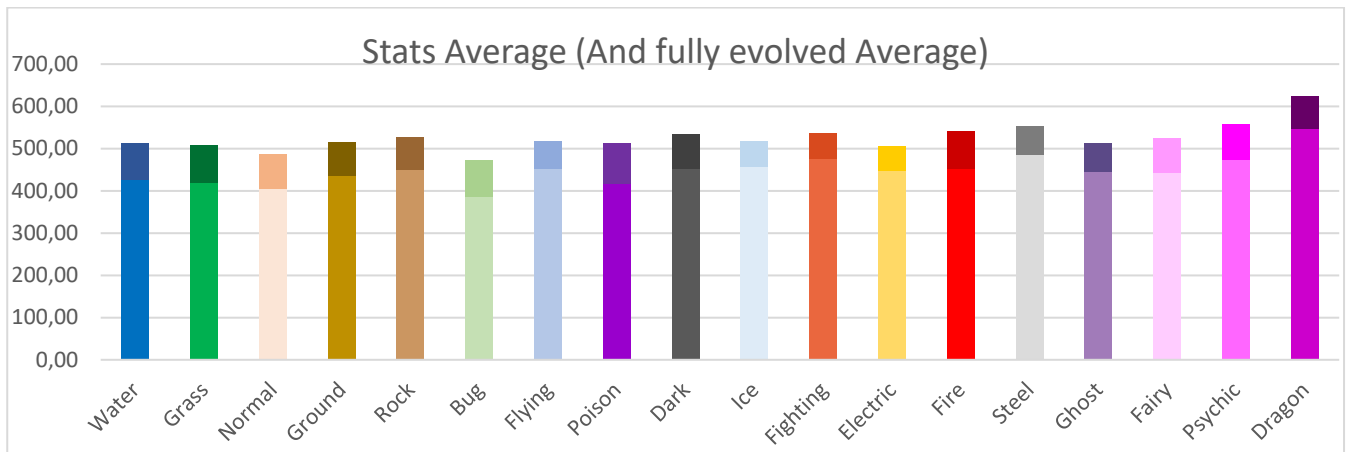
We can see how, gen 3 and 4, but also 1 and 2 are, to a certain extent, closer to the line, while gen 6 is almost completely off, gen 8 moves under the line and then overlaps with it in the middle to spike for psychic and dragon types and gen 5 is quite interesting because it shows an up and down behaviour, this because, if we get back to the table from which this graph is made, we can see that there are a lot of pokémon for each type, as if they wanted to have a constant (or anyway obscollating around an average) number for each type. I can see why this has been made, but i honestly don't really like it. To better see all this let's go to the almost last graph that will show us, without any column the percentages generation per generation and those lines will not be average tendency lines, they will just connect the dots.



- 1) Gen 1: The first thing we notice is the poison-dark jump, as i'd like to call it. When gen 1 was created there weren't either fairy type (that got added to a bunch of pokemon later), steel type (that was added only to magneton and magnemite) and dark type, that wasn't added to any pokémon. For this reason we can see the 0% in it. Other than this it is well known that gen 1 had poison type was almost everywhere that is why we have that spike. It was the first gen, we can understand the divergence. Also notice a lack of grass type.
- 2) Gen 2 was made to complement gen 1 and it does so, to a certain extent. We can still see a spike in flying pokemon and two valleys for ghost (misdreavous) and dragon (kingdra).
- 3) Gen 3 was perfect. Damn psychic type. Kidding, not really perfect, but okay.
- 4) Gen 4 is actually quite good too, but too many flying, too many steel and as we all know, not enough fire. (also here small spike in the psychic type)
- 5) Gen 5 shows the zig-zag behaviour described before, but it adheres well enough to the curve nonetheless.
- 6) Gen 6 here, where the lines are not averages shows a way more prominent zig-zag behaviour than gen 5. That is because of the small pool of pokémon, the concentrated number of fairy types and the spike in the dragon numbers. This brings us to an odd, and honestly unpleasing, behaviour.
- 7) Gen 7 is surprisingly coherent with the curve (except for smaller spikes in electric, fairy and dragon percentages (remember the before mentioned trend of increasing the number of dragons)
- 8) Gen 8 instead goes a different way, almost an inverted pyramid (that honestly, at least for how it was presented in the game) i didn't like. Probably the inverted pyramid is not even the best way to describe it, but i couldn't find a better word.

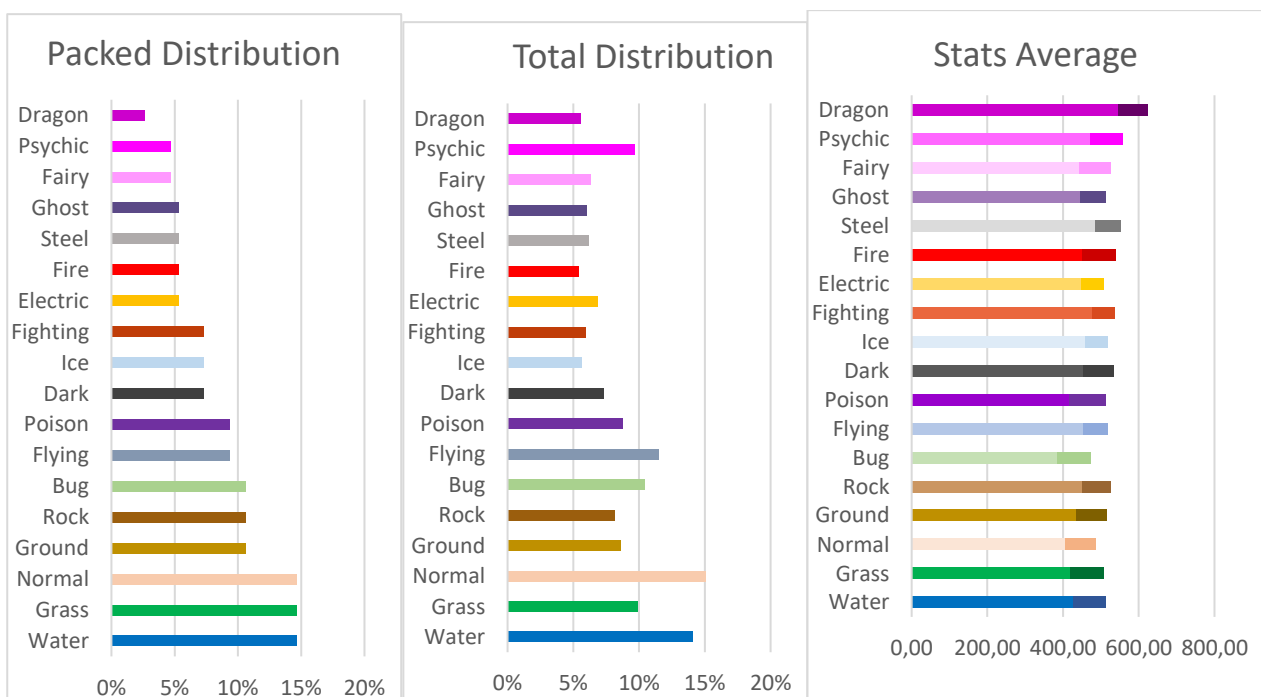
## The power level

At last i'll show you the graphs about power level (small, we already said they aren't really good to study, at least not in the way i present them)



We have both the averages considering all the pokémon and considering only fully evolve. In both cases the trend is mostly constant, or better slightly (but really slightly/oscillating) increasing with a valley for (sadly) the bug type and an increase towards the end (although legendaries here may weigh quite a lot)

Let's compare now the packed pyramid model, the total distribution (without legendaries etc...) and the power distribution to see if we actually do have an inverted trend and in general to make comparisons.





## Conclusions

We can conclude, i think, that there actually is a general trend that more or less tends to the pyramid scheme, but we can see how, with time, there have been many deviations from it and lately (sadly) a tendency to change these tendencies towards a more uniform distribution.

I do believe that the schemes and the proportions amongst the percentages of different types are really important and allow us, the players, to enjoy more the game experience, to fully live a game and see it as realistical, although magical and extraordinary.

Instead whenever this illusion is broken, whenever the proportions change without the context changing accordingly we lose enjoyment. We could, for example compare the trend of a generation, of a region, with a more fitting envormental profile, for example Sinnoh and Galar to a colder region, Hoenn to a coastal environment and Alola to a completely oceanic setting, but all of this will go into a possible next work, for now, i stop here.