




RESISTANCE IS FUTILE?

HOW POP-CULTURE IS PORTRAYING THE HIVE-MIND, SUCH AS STAR TREK'S BORG.

FEAR IT OR EMBRACE IT?



In *The Best Of Both Worlds* Captain Jean-Luc Picard of the starship Enterprise is abducted by the Borg, mysterious aliens that assimilate other species to become a part of its collective hive-mind and gaining strength by exploiting each specie's distinctiveness.

Four Reasons to Serve the Hive

“We are the Borg. We will add your biological and technological distinctiveness to our own. Your culture will adapt to service us. Resistance is futile.” (The Borg, Star Trek TNG)

The Hive wants YOU! Give up your pathetic notions of self-importance and join something greater. There will be no fear. There will be no unmet desires. There will be only eternal comfort from a billion voices in one chorus, with one purpose, with one spirit. No way. Not me. Not my species. We value our individuality. I am captain of my own ship and I will not have my identity suppressed by your Hive. This is the refrain of countless tales, well represented by Captain Picard giving the finger to the Borg and their offers of unified consciousness.

But are we too quick on the trigger as we vaporize countless waves of Hive-Drones? Science says: absolutely. Whilst scientists haven't been thinking much about the Borg, they have spent a lot of time thinking about ant hives, human societies, com-

puter networks, DNA and other complex adaptive systems [1]. The Hive-Mind represents just another layer of organization on top of life, and it needs to obey the same rules. So in the interests of ruining both fun and science, we will deconstruct the Myths of the Hive-Mind in our popular culture and contrast them with crude descriptions of the science. Science that tells us the hordes of drones we cut down are self-actualizing individuals with their own hopes, dreams and sufferings. Just like us.

Myth One: The Hive is single-minded

“What is a drop of rain, compared to the storm? What is a thought, compared to a mind? Our unity is full of wonder, which your tiny individualism cannot even conceive.” - The Many, System Shock II

The Hive-Mind delivers us an ultimatum: aban-

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don our individuality and accept control from the collective. Yet we deny them, because we value our personal wants and needs. Sure these wants and needs can cause problems. Like the [nipple-themed race war](#) that erupts when Unity loses control in Rick and Morty. But we're humans, dammit. We want to be ourselves [2].

The Reality: The Hive-Mind needs variety

Turns out the Hive-Mind doesn't want to crush our individuality. They want to nurture it. Operating as a collective is a great way to survive. After all, your body is just a bunch of cells that decided they were better off working together than going it alone. But the integrity of the collective needs variety in the parts that make it up. A planet- or galaxy-spanning collective mind just doesn't work if everyone is all the same.

Scientists are obsessed with studying the balance of variety in systems like Hive-Minds, ant nests and human societies. The take-away point of their research is simple: for a population to survive it needs to adapt as conditions change, and the essence of adaptation is variety. By restricting variety and producing endless copies of the same type, a system puts itself at risk. Firstly, by missing opportunities to adapt, and secondly by making itself

vulnerable to shocks or exploitation [3].

The [Law of Requisite Variety](#) [4], developed by cyberneticist Robert Ashby, claims the need for variety in living systems is fundamental to nature. Basically, the more variable the environment, the more variety a system needs to survive. Furthermore, systems that are capable of more variety out-compete systems with less variety. Just think about football: the team with more plays in its book is the superior team in the long run because it can deal with more situations.

Hive-Minds exist in a variable universe. The Borg have to deal with a galaxy of planets, empires, weirdo aliens, god-like beings and tears in the fabric of space-time. The only way to deal with so much variety is to be capable of an equal amount of variation. For that, they need distinctive individuals doing their own thing.

So, yes. The Hive wants YOU. It does want to add your distinctiveness to its own. But it wants you to express that distinctiveness, baby! It's all about you and your individuality. In the end, it turns out that being part of a collective is no more threatening to our individuality than making dinner with friends. The bigger threat is petty name-calling and criticism.



Captain Picard, distinguished humanitarian (left), and Six-of-Nine, amoral drone (right), discussing the potential for unification.

Myth Two: Someone is in charge

“Serve the Hive... Feel the groove... I control... the way you move.” - The Overmind, StarCraft

What of being a puppet body to a controlling mental force? Whether it's a Queen or a King, joining the Hive requires subservience to a greater will. All in the Hive are mere slaves, doomed to do another's bidding through psychic control, cybernetics or chemistry. We are not in control because we are dominated and compelled to serve 'a greater good'. A greater good that is synonymous with the desires of our rulers and not our own.

This is clear in the insectoid swarms that litter the galaxy like a plague. The Zerg from StarCraft or Warhammer 40K's Tyranids are not creatures under their own power. Instead, they are mere extensions of their Queen. Her will filters through layers of lesser mind-controllers and ends with the teeth and fangs of the swarm, who are otherwise ravenous and instinctive creatures with no common bond.

The Reality: No one is in charge

But it's us apes who build social pyramids of

control and dominance. For the insects, queens are merely another part of the hive; her function is to lay eggs. She doesn't know what the hive is up to or give it commands [5]. Yet despite not being ruled by anyone, the Hive can still adapt to its environment. This is because hives work through the principle of self-organization.

Each little ant or bee, queens included, are only acting in response to their own local environment and drives. When thousands of these interactions occur in a limited space or time, they promote the emergence of an organizational regime that gets things done without anybody being told what to do [6]. It's the same as with our market economy. The millions of transactions that take place every day can move supply to meet the demand. For the Hive to organize as a unified whole, it paradoxically requires each individual to have their own agency. The more instructions given to hive-members, the more the Hive limits its ability to adapt through self-organization.

When it comes down to it, hives are a prime example of autonomy. Each member must be free to do what they want, when they want, how they want.



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As drones in the Hive-Mind we wouldn't be slaves to the queen, we would only be slaves to ourselves. For some of us, that may be even worse.

Myth Three: The Hive's growth can not be stopped

"There is only one Universe and it can contain only one life." - MorningLightMountain, Commonwealth Saga, Peter F. Hamilton

The motives of the Hive typically involve bringing all life into its fold. If not, then it's about eradicating other life entirely. Filled with its singular purpose, the Hive-Mind is an unrelenting, unstoppable force that spreads without constraint. All life in the universe rests on finding a way to halt the Hive. It's like an invasion or a [virus](#). Indeed, from the perspective of a human life, cohesive enemies and disease can seem unrelenting in their expansion. But is such a thing even possible?

The Reality: The Hive desires balance

It turns out that unconstrained growth is just another delusion of the human mind. Consider the growth of a leaf-cutter ant hive. They are not too different from the Borg. Except instead of assimilating life and technology into more Borg, they are assimilating leaves into more ants. The further the hive extends, the less efficient assimilation becomes because it takes longer to transport resources [7]. Human cities work in the same way - they expand

to the point where it becomes less efficient to do so.

Although the Borg tell us that resistance is futile, it's clearly not. To overcome the resistance against them, the Borg must invest energy into their conquering. This energy has to come from somewhere. Which brings us to the concept of [trade-offs](#), and the realities of living in a finite universe. Simply maintaining all the processes required to persist takes resources. Ants need to raise young, reproduce, respond to threats, dig tunnels and all that. The Hive-Mind is going to need to service itself as well, and they can't do this if their efforts are concentrated on an expanding front.

But even more difficult is assimilation itself. Assimilation takes time and resources, and also increases the complexity of the Hive. An increase in complexity can be seen as a kind of level-up for the Hive. But it comes with its cost: as something becomes more complex it becomes slower, less specific in what it can do and more expensive to maintain [8]. Furthermore, the system as a whole needs to change in order to incorporate the new chemical and technological elements coming from a conquest. These changes can make the system more robust in some areas, but more fragile in others. Such disruptive change is not always a good idea.

So we see, even the Hive-Mind has limits to its growth. We live in a finite, variable and unpredict-

able universe and have to deal with that. So do they. The Hive-Mind can't spread to encompass the whole business any more than we can. Instead, they will have their hands full just trying to stay alive, and seek something that resembles balance.

Myth Four: The Hive-Mind is the ultimate state of evolution

“Recreational substances were phased out here. There's no need for escape from the self when your world is one.” - Unity, Rick and Morty.

You know what, this Hive-Mind thing is starting to look pretty good. Indeed, many of our stories don't pose the Hive-Mind as a threat, but rather as savior. Transcendence into a group-mind is often portrayed as the next stage of human evolution, or the path taken by superior progenitor species that inhabited the galaxy eons past. It represents an end to suffering through the unification of all things. There will no longer be any separation between ourselves, others and the unified nature of existence. Sounds good. But can the Hive-Mind truly bring us our salvation?

The Reality: The Hive-Mind is just one way of life among many

Probably not. Unification of this sort may be able to bring an end to our suffering, but only by ending self-experience [9]. To be self-aware is to make a distinction between the self and others, but in a unity there are no others. In other words, it is being alone. Without a distinction of the self, there is nothing else either. As an experience it is about the same as being dead, or if you rather, being unborn. If we want to remain self-aware, we must remain as separate individuals, complete with the suffering that comes with it.

But what about if we dial things back a bit from achieving God-Hood? Does the Hive-Mind represent the next stage of evolution? Probably not. When it comes to evolution there is no best, there is only whatever works [10]. There is no ladder to climb, only a toilet to spiral [11]. A life-form that



What will happen to the Cybermen when they assimilate the internet?

is good in one context is not so good in another. There is always a weakness to exploit or an opportunity left untouched. There is no ultimate form that beats everything else.

So, Hive-Mind drones not only represent a variety of distinctive individuals with their own agency, they are vulnerable beings and may even be prone to existential suffering. The drones of a Hive-Mind, and the Hive-Mind itself are just other living things in a universe of diversity, no better and no worse. Just surviving and doing their thing, same as everyone else.

Conclusions: Serve the Hive, or Don't. Who cares?

“They just put you at the centre of their lives because you're powerful, and then because they put you there, they want you to be less powerful.” - Rick Sanchez, Rick and Morty.

Human life exists on the bleeding edge of tension between individuality and the collective because we are an expression of both [12]: in our societies [13], our minds [14], our bodies [15]. Hive-Minds offer no escape from this tension, any more than being a multi-cellular organism frees our cells from their tiny struggles. As long as we are alive, we will have our agency and individuality. We will have our struggles against nature and with defining our self-identity. We will have our vulnerabilities to accept. It doesn't really matter whether we are in a Hive-Mind or not.

Actually, we probably wouldn't even notice if we

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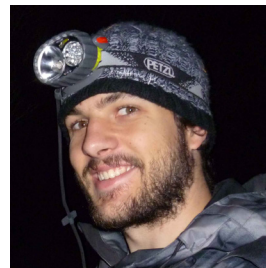
lived in a Hive-Mind. The choices we make as individuals have consequences at higher levels of organization, such as family, tribe and nation. These higher organizational levels deal with complexity beyond individual understanding [16], yet it is individual choice that allows collectives to deal with complexity. So the true power of an effective Hive-Mind comes from not being known and allowing individuals to make choice without pres-

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sure. Our actions that feel most natural may be contributing to self-organized collectives without our realization. Some philosophers from multiple schools of thought already believe that humans works as a collective mind, at least to some degree [17][18][19].

In our stories, the Hive-Mind has been unfairly represented as oppressor or savior. They are portrayed as a destroyer of individuality through collective control, mental domination, or transcendence of the self. Yet the reality is a collective life that emerges from individual expression. And for individuals, life is complex and kind of isolating. Even for those in the Hive-Mind. □



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