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A parasite is defined as "an organism that grows, feeds, and is sheltered on or in a different organism while contributing nothing to the survival of its host." [1] The tactics of appropriation have been co-opted. Illegal action has become advertisement. Protest has become cliché. Revolt has become passé. These disputes have reached the definition of rhetoric. They are the usual suspects. Having accepted these failures to some degree, we can now attempt to define a parasitic tactical response. We need a practice that allows invisible subversion. We need to feed and grow inside existing communication systems while contributing nothing to their survival; we need to become parasites. We need to create an anthem for the bottom feeders and leeches. We need to echo our voice through all the wires we can tap but cloak our identity in the world of non-evidence, and the hidden.

What I am indirectly referring to is operating as an appendage; creating a practice that hops the meta-train of media. In much radical behavior, we struggle, writhe, and scream, but make only a whisper. We must exercise the scream and stretch our vocal chords to make room for the growl. This bite must remain silent - a bite with no bark. The parasite's own existence depends on its ability to remain hidden. The parasite is the mystical computer glitch. The parasite is the bandwidth thief. The parasite is the invisible usurper. The shift that takes place in the host, if any, is one so gradual the parasite will be able to feed and thrive without detection.

The invisibility of the parasite is only through the eyes of its host organism. A parasite may be very visible to other parasites or to those human users that utilize the

[1] par-a-site Pronunciation Key (p r - s t) n.

Biology. An organism that grows, feeds, and is sheltered on or in a different organism while contributing nothing to the survival of its host.

A. One who habitually takes advantage of the generosity of others without making any useful return.

B. One who lives off and flatters the rich; a sycophant.

exploits or extensions that may be created by the introduction of the parasite into the host. It is the host that either cannot detect the presence of the parasite, or who observes the parasite, but only as an anomaly that stays well within the systems margin of error. The parasite flies below the radar of the host's policing system by remaining too peculiar, non-distinct or immeasurable. It is by appearing as an expected and accepted system bug that an otherwise visible parasite becomes invisible to its host. The way a parasite remains within the margin of error of a host system is to work within large expansive organisms that have less ability to control or monitor most of their own structure with any great detail. There is a blurring that will occur in systems where there is a large gap between manager and worker or between operating system and application.

If the standard deviation returned during any examination performed on a host organism is larger than it was before the introduction of the parasite into the host then the parasite will become visible to the host policing system and will be detected and removed. This would be a failure of a parasite in not knowing a host's standard deviation tolerance. It is in larger systems that larger tolerances are given for error. In smaller systems, the monitoring is so direct that standard deviation is already so small that it becomes difficult to introduce a parasite into the host that will remain invisible and still be able to function properly. An example would be the amount of theft by employees that occur at a small business where the owner is a visible source of monitoring being much lower in most cases than a large corporation where the owner is not present and

Parasitic Media: Creating Invisible Slicing Parasites and Other Forms of Tactical Augmentation

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possibly not known. Retail thefts, like employee thefts, increase with the size of a business. Corporations such as Wal-Mart factor the losses they will see due to theft into their financial planning and cost analysis. Usually, if the amount of theft grows relative to the size of the corporation, the level of standard deviation will not increase and no alarm will go off that will force the host to change its behavior. This

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may change with the introduction of surveillance technologies into these environments but that shift will eventually return to a patterned behavior with its own level of standard deviation. A parasite must respect the tolerances of its host. A parasite may grow but only relative to the growth of its host. The parasite must remain invisible to the host.

The practice of parasitic media I am defining is one that is not all together new. [2] It is operation within a pre-defined communication system. It is a plug in - an extension. It is a universal connector. The specialty it contains is that of co-existence and adoption. Rather than operating from the response of destruction, annihilation, or the more eloquent appropriation, we will build ourselves as spy-ware and viruses. These are parasites with a new agenda. We will construct no new systems in exercising parasitic media practices; instead we will only build extensions to pre-existing systems. The ability to create these extensions invisibly relies on large system sizes. The systems become hosts for the parasites. The more complex the host system, the more possibility there is for a parasite to exist unnoticed - until the sickness sets in, and then it is too late. Larger communication systems are only one part of a vast array of media that can serve as hosts. With expansive global communica-

tion infrastructures, adding a new appendage that hides itself well becomes relatively simple. By understanding the surveillance practices within the systems we desire to build for, we can understand and define our limitations. While these limitations are sometimes clearly allocated and narrow, they still allow for much play. The ability for play is built into the allowances and tolerances within any sys-

tem. The margin of error for these systems, both digital and analog, is where parasitic media will operate.

In North America, the freighthopper emerged with the creation of the expansive railroad system as a hobo (usually working very sporadically as itinerant farm hands for small amounts of cash) who would sneak onto trains and ride in open boxcars to their destinations. The success of their ventures relied on remaining invisible. They cost the railroads no extra effort - other than the cost of hiring train yard cops, known as bulls, to police the freighthoppers. The freighthopper was known as a freeloader who traveled the rails as an invisible extension or appendage of the trains, feeding off of the railways mobility. The freighthopper is the folk version of a form of parasitic media response. This is a concept for conceptual piggybacking. If we take an existing railway system as example host, we can build parasitic attachments (in the case of freighthopping, this is the hobo) that simply create added functionality. We hop on the train and ride the rails as far as we need to go. We avoid the "bulls" of the communication system train yards at all costs. Here we can use a comparison between freighthopping and hitchhiking to understand the relationship between parasite media and other forms of tactical

media that rely on awareness. The tactic of the latter can very effectively make use of mainstream advertising or communication machines to dispense whatever chosen form of manipulation, gesture, or subversion. In *The Freighthopper's Manual* by Daniel Leen [3], we are told that "the police are encountered less often on freights because freighthopping is essentially a private means of transportation, while hitchhiking is essentially public - you've got to stand out there on the side of the road in front of God and everybody." Parasitic media is the freighthopper that makes privacy essential. This privacy is the invisibility or the cloak that forms the definition of parasitic media response. Parasites are hobos that live off the rails of their hosts.

Parasitic response in media does not attempt to reassign function or modify primary usage. There is no threat to consumers of systems. Therefore these responses can fly under the radar of most monitoring systems. If nothing is disturbed, or at least knowledge of the disturbance is not transmitted, what you will have created is a backdoor or trapdoor to a system with your own set of predefined and augmented behaviors. The pattern of use for the system, whatever it might be, is not harmed or altered. This is critical to the concept of the parasite as activist. By adding functionality to a pre-existing system, you make use of only that which you create which in turn remains invisible. This means the parasite can then remain invisible; creating the semi-tangible notion of the ubiquitous backdoor.

It is possible to consider living parasites to be the most substantial group of activists in our world. Parasites make up the majority of species on Earth. Parasites can survive as animals, including flatworms, insects, and crustaceans, as well as protozoa, plants, fungi, viruses and bacteria. It is believed that parasites may now outnumber free-living species four to one. Parasites rule the earth and some believe have the ability to not only participate in evolution but guide it invisibly. We can take our cue for social intervention from the action of the parasite:

Every ecosystem on Earth is just as rife with parasites that can exert extraordinary control over their hosts, riddling them with

[2] "These new organisms don't tell stories. They riff, annotate, dismantle, dissect, sample. Everything they do refracts back onto some other "straight" media, on which they rely for their livelihood. ...they run the gamut from high to low culture, from mass appeal to indie cachet ... and regularly manage to make news out of pure mediation. Diversity of the species is remarkable. All the evidence suggests that the metaforms are evolving at a much faster clip than their storytelling competitors." Steven Johnson, *Interface Culture*, 1997

In his 1997 book *Interface Culture*, Steven Johnson defined parasitical media roughly as a recent development occurring primarily in television whereby a show thrives by "riffing" or creating content based media itself. This definition, while effective for the argument Johnson was forming, does not satisfy the need for a more literal take on the parasite's role in tactical media responses. This paper acknowledges Steven Johnson for providing a foundational term for us to adapt.

[3] *The Freighthopper's Manual for North America*, Daniel Leen, pp. 17-18

disease, castrating them, or transforming their natural behavior. Scientists ... are only just beginning to discover exactly how powerful these hidden inhabitants can be, but their research is pointing to a remarkable possibility: Parasites may rule the world. The notion that tiny creatures we've largely taken for granted are such a dominant force is immensely disturbing. Even after Copernicus took Earth out of the center of the universe and Darwin took humans out of the center of the living world, we still go through life pretending that we are exalted above other animals. Yet we know that we, too, are collections of cells that work together, kept harmonized by chemical signals - an organism like a parasite - then it can control us. And therein lies the peculiar and precise horror of parasites. [4]

Parasites have the ability to manipulate the behavior of their hosts. There are two hosts available to a parasite that wishes to jump species, the upstream host which is usually directly controlled by the parasite and operates as a sort of delivery method, and the downstream host which seemingly behaves normally. It is believed by some that the downstream host is also manipulated by the parasite and may form a

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unique relationship with a parasite that enables the process of food gathering. This can be seen in certain parasites that infect fish. The parasite temporarily controls the behavior of its host to produce a flailing-surface swimming target for birds. The birds benefit from the easy target of fish and as predators, are surprisingly willing to ingest the parasitized fish. The parasite does drain a small amount of energy from the bird but that is easily offset by the benefit it provides. The relationship develops slowly and awareness becomes unimportant.

One amazing example of parasitic control of host behavior can be seen in the lancet fluke, *Dicrocoelium dendriticum*. As an adult, the parasite lives in a cow's liver. The fluke's eggs are spread by the cow through their manure. Snails feed on the manure and swallow the fluke's eggs. The young flukes penetrate the wall of the

snail's gut and emigrate to the digestive gland. In the gland, the fluke's produce more offspring which travel to the surface of the snail's body where they are dispensed of by the snail through balls of slime which are left behind in grass. Ants swallow the balls of slime in the grass which are containers for hundreds of immature lancet flukes. The parasites slide into the ant's gut before traveling around the rest of the body. Eventually they move towards the cluster of nerves that control the ant's mandibles. Most of the flukes then leave to return to the gut while a few remain behind in the ant's head. This is where some of the most amazing maneuvering occurs. As the evening approaches, infected ants do not return back to the colony with the other ants but instead climb to the top of surrounding grasses where they clench their mandibles on the blades and wait, motionless, until morning when they join back with the rest of the colony. These ants suffer from a period of temporary insanity where they are awaiting ingestion by a cow - which feed generally in the cool evenings. Once eaten by the cow, the cycle has been completed.

Might we be able to control media or our hosts in the same way as the fluke that

drives the ant to temporary insanity? These parasites, that some consider to be the dominant forces in evolution and adaptation, are completing revolutions on a daily basis. They work with limited opportunity and utilize what might be seen as their disabilities, to not only control their host but also social behavior. If we can adapt this understanding to our own infiltration of media systems, we could use the power and the relationships that already exist as our carriers. As subversives and workers, we could mutate our hosts through an invisible invasion.

In an article on horizontal gene transfer, Dr. Mae-Wan Ho examines a study conducted by researchers at Indiana University in 1998 that found a genetic parasite belonging to yeast that only recently was jumping into unrelated species of higher plants. "The parasite is a piece of DNA called a 'group 1 intron' that

can splice itself in and out of a particular gene in the genome of mitochondria." [6] When the intron injects itself into a genome, it is able to add an extra stretch of DNA that does not belong to the host. The genetic parasite must overcome genetic barriers in the host that maintain distinctions in species. This same process may be responsible for the rise of diseases resistant to drug and antibiotic treatment. The parasites are learning. Genetic engineering uses artificial genetic parasites that operate as gene carriers. The carriers perform a horizontal gene transfer between unrelated species. The artificial genetic parasites are constructed of parts from the most aggressive naturally occurring parasites of which the group 1 intron is a member. It is still unclear what has caused the genetic parasite to leap onto higher level plants only recently, but it does make us aware that parasites have learned the skill of adaptability for survival - so must activists and artists.

In parasitic computing [6], CHECKSUM running over a TCP (transmission control protocol) connection between multiple nodes or machines on the Internet is used to force solutions to mathematical problems. All the tasks are performed invisibly over the connected web servers. This operation is similar to the work done by the SETI@home program. SETI uses the computational power of computers that download its software to search through immense amounts of radar data for intelligent extraterrestrial life. A program like SETI differs since its hosts are aware and volunteer to submit their resources to reach a common goal. While this is a useful tactic in some situations, it is not what we are developing with a parasitic response. A parasitic computational response would act without permission and would serve as a passive interaction of unawareness. In a natural environment, permission is not necessary. Parasites are criminals that violate the artificial construct of permission. Parasites rely on their ability to remain undetected or at least not worthy of concern. Don't ask, don't tell, and don't bother.

Here it is important to make a distinction between two types of parasitic media response; incident-based and generative. The first and most commonly practiced form is incident-based. Incident-based parasitic media response takes place in a very specific time and space. There is no

[4] Carl Zimmer, "Do Parasites Rule the World?", Discover Vol .21 No.8 (August 2000)

[5] Dr. Mae-Wan Ho, Horizontal Gene Transfer - New Evidence (May 12, 1998)

[6] Parasitic computing is an example of a potential technology that could be viewed simultaneously as a threat or healthy addition to the online universe. On the Internet, reliable communication is guaranteed by a standard set of protocols, used by all computers. These protocols can be exploited to compute with the communication infrastructure, transforming the Internet into a distributed computer in which servers unwittingly perform computation on behalf of a remote node. In this model, one machine forces target computers to solve a piece of a complex computational problem merely by engaging them in standard communication.

need for the parasite to live longer than a few days or even a few seconds. The more complex system is generative parasitic media response. Generative parasites must adapt and grow with their host system. This growth creates an allowance for greater sustainability of backdoors or hijacks. A parasite need not take advantage of its host's vulnerability to hijack. It is in the best interest of the parasite to live and feed alongside its host. There might be other forms of parasitic response and media that will evolve with practice and discourse but for now it is critical to stress

older media, I am generically referring to anything from radio to electric companies to light bulbs to humans to insects to dirt to DNA. These may or may not fit all definitions of media, but they do have the possibility to become hosts for parasites.

Parasitic media does not need to occur within the realms of the electronic or computational; it can, and should exist at the cultural level as well. This model for tactical response can operate within all ranges of culture: the arts, the sciences, law and government. The criticality is to remain

for distinctions between the genres of parasitic media that might be created.

Slicing Parasites
Human Host Parasites
Soft Parasites
Hard Parasites
Memetic Parasites

Ideally these distinctions will blur themselves and new criteria will emerge. This exercise is used as a method for stimulating concrete thought of what a parasitic media response could actuate itself as. These are only sketches of deployment methodology. In any war, the weapons but be chosen appropriately and creatively. The parasite becomes both consumer and producer.

Slicing Parasites might fall under the category of generative parasitic response. The name is derived from hacker folklore (and much that was actually effected) involving a process known as 'Salami Slicing.' This is a procedure where very small amounts of digital cash are 'sliced' thinly from computations performed on bank accounts over extended periods of time, and diverted into a unique, separate account. This process usually involves fractions of a penny that are discarded or lost during data rounding. In banking systems, 'Salami Slicing' is used to embezzle large amounts of virtual cash undetected and without harm to the consumers. This allows such parasites, when correctly executed and monitored, to go undetected for long periods of time, even years. It was the computer software that performed mathematical rounding operations that serve as the initial host - of course this host was fed by the larger system of the financial industry and virtual cash. This type of parasite can be traditionally referred to as a trojan horse.

Here is one such account of a Salami-style *Slicing Parasite* that existed for a number of years:

A programmer working at a mail-order sales company had its computer round down odd cents in the company's sales-commission accounts and channel the round-downs into a dummy sales-commission account he had established under the name Zwana. He had invented the name Zwana because he knew that the computer processed the company's accounts in alphabetical order, and he could easily program the computer to transfer all the round-downs into the last account in the computing sequence. The

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the separation of these two forms of behavior. The reason to create the separation is that while identifying both types of parasitic media responses, it is the generative or long-term parasite that provides us with a tactic that has yet to be fully explored. It is important to detail and understand examples of incident-based parasitic media responses, but it is the generative parasite that has yet to be used as a tactical media response. This is the genre of parasite that coexists with its host and functions best over a long-term relationship. Both host and generative parasite grow together. It is the invisible parasite that feeds slowly off its host or extends abilities to its host that becomes accessible to outside users. The parasite either operates as an undetected and slowly emerging cellular shift in the organism, or as a backdoor to a host that provides extended functionality through invisible means. It might also be possible for a parasite designed to be incident-based to slowly evolve into a generative organism. Alternately, a parasite designed to be generative could die too soon or miss a level of adaptation. It will have served some function up until its point of separation from the host even in the event of an untimely demise. It is likely that given the speed at which communication systems and media reorder, many generative parasites will live fast and die young. It is the older media that might create better hosts for generative parasites. In using the term

media-unspecific and fluid. Each response, each parasite must understand its host prior to any form of invasion or invasive procedures. It is through an understanding of the operation of a host that a parasite can co-exist and adapt to its environment. The parasite does not attempt to change its host through destruction since its own survival is dependant on the existence of its host. It instead must learn to adapt to changes in the host's structure. The structure can mean its cellular makeup, its organization, or its bureaucracy. This is where a unique value can be understood for parasitical attacks. Because of the nature of the parasite, I am primarily referring to the needed invisibility; responses can be slow to develop. The growth of the parasite does become an exponential one; or at least has the power to do so. With an augmentation, the device or system as host will continue to grow. A critical part of parasitic response is its need to interpret and react to environmental variable shifts that might occur. Parasites benefit from being able to adapt to changes in their host entity.

We must begin to radicalize our definition now. We must take the mundane parasite and split it into an attack across all media. We must seek out hosts wherever they might be breathing. We must define now the industries and areas where parasitical media might be used as a form of response. I shall propose several names

system worked perfectly for three years, and then it failed -- not because of a logical error on the culprit's part, but because the company, as a public-relations exercise, decided to single out the holders of the first and last sales-commission accounts on its alphabetical list for ceremonial treatment. Thus Zwana was unmasked, and his creator fired. [7]

Another example of *Slicing Parasites* occurs over networks. [8] I earlier described distributed computing projects. One of the earliest examples of a worm that operates in such a manner was completed by researches at the Xerox PARC Lab in Palo Alto, CA. In 1982, the worm was created to find idle machines. It was used to distribute workloads and was not a malicious worm. The process involved probing through an ordered set of processors, asking if a system is idle. When a free processor is discovered, the worm takes the currently active segment of operation and copies it to the idle machine. The process then repeats and spreads in this manner. Distributed computing and cluster computing all operate off a principal of the worm or the parasite. It is the cloak of invisibility that defines such action as a parasitic response. This is the distinction in such practices between division of labor (distributed computing) and free work(worm) - the use of pre-existing systems to bear the load.

While most examples we can find of *Slicing Parasites* occur in computer system software, we need not limit its definition in such a way. It is only in stepping away from the historicity of 'Salami Slicing' techniques that we begin to see its application through other media. This is where the definitions we are trying to use to distinguish tactics and genres within parasitical media response begin to degenerate. One example of such a blur can be seen in a project completed at the MIT Media Lab. This excerpt is from the MIT researchers 1998 paper, "Parasitic Power Harvesting in Shoes":

As wearable electronic devices evolve and proliferate, there will be a growing need for more power delivery to distributed points around the human body. Today, much of that storage is provided by batteries and power delivery is via wires. The current approach to power distribution is clearly becoming problematic -- as more

appliances are carried, we are forced to either use more small batteries that require replacement everywhere or run wires through our clothing to supply appliances from a central power source. Both are undesirable. A better solution is clearly to generate power where it is being used, bypassing the storage and distribution problem altogether. As power requirements drop for most wearable devices, it is no longer infeasible to harvest a useful amount of energy "parasitically" from a normal range of human activity. ... We believe that our approach has the potential to solve these problems for a class of wearable devices by placing both the generator and powered electronics in a location where considerable energy is easily available, namely the shoe. [9]

The researchers used the walking motion of the human host organism to capture inadvertent energy by attaching a parasitic device to a shoe. This project can be seen in one regard as a *Slicing Parasite*. Its unique power comes from thinly slicing small segments of power. It relies on large levels of repeat usage to create an allocation of the reciprocal energies produced in simply walking. A parasite such as this can also be seen as a *Human Host Parasite* or as a *Hard Parasite*.

A *Hard Parasite* is a response that relies on hardware modifications or electronic appendages. These are devices and parasites as attachments or augmentations to hardware. Alternately, *Soft Parasites* are those that live as extensions to code or software. They are digital and may produce a physical effect. Both are cannibalistic - hardware feeding off hardware or software feeding off software, respectively. With this definition of a *Soft Parasite*, we can see another blur with our example of a *Slicing Parasite*. The bank software rounding program does fall into our definition of a *Soft Parasite*. This blur between parasitic response genres is not only acceptable, but desired, and usually impossible to avoid. Our divisions are not to serve as containers but templates and creative impetus for parasite development. A *Human Host Parasite*, of which the described MIT project might be an example, can live either inside or outside of a human host. The genetic version of the *Human Host Parasite* might be conceived as transgenic. A parasitical cellular change that might slowly factor into the

growth of offspring or adaptation of ability or augmentation could be one practice. An example of a *Human Host Parasite* variety, or more precisely a similar field of parasitical research that may lead to a *Human Host Parasite* can be found in Critical Art Ensemble's (CAE) 2002 essay The Molecular Invasion. This excerpt presents a concept of Fuzzy Biological Sabotage (FBS). The project being explained in this excerpt is designed to work off the existence of Roundup Ready (RR), an herbicide developed by the corporation Monsanto that genetically modifies the plants it attacks. In a way, both Monsanto's project and the work of CAE are forms of *Human Host Parasites* - or as we know from the process of horizontal gene transfer, have the opportunity, once ingested, to become such:

The best civil action that CAE has in development is a model to bond a colorigenic compound (dye) onto the RR enzyme. A colorigenic compound is one that has been synthesized so that it is initially colorless. Upon reaction, the compound is modified and releases a dye. ... Upon binding to the enzyme, this compound could then release a dye, thus making all RR crops an undesirable color from the point of view of the consumer. ... If the dye can be developed, it would function as a contestational marker in the fields, and possibly in supermarkets and homes. [10]

This presents us with another case of blur between our definitions. The proposed project may end up being a *Human Host Parasite*, but initially it might fit better into the category of *Slicing Parasite*. Either will do for the purpose of our argument. I stated earlier that the work of Monsanto might also be considered a form of parasitic media. Monsanto's Roundup Ready mutagen does meet all of the criteria that we have set forth for a parasitic media. The value system we use to judge such actions must be developed. We have yet to develop a language for the parasite required to make an evaluation outside of the expected reactionary shiver. Until we can form a more precise definition for parasitic media that separates corporate usage from radical usage, we will have to leave Roundup Ready as another example of *Human Host Parasitic media*.

A *Soft Parasite* is a very open category

[7] Whiteside, Thomas, *Computer Capers* (Mentor: New York, 1978), pp. 33-35, ISBN 0-451-62173-5

[8] J. F. Shoch and J. A. Hupp, *The Worm Programs - Early Experience with a Distributed Computation*, *Communications of the ACM*, 25(3):172-180 (March 1982)

[9] John Kymissis, Clyde Kendall, Joseph Paradiso, Neil Gershenfeld, *Parasitic Power Harvesting in Shoes* (August, 1998), presented at the Second IEEE International Conference on Wearable Computing, http://www.media.mit.edu/physics/publications/papers/98.08.PP_wearcon_final.pdf

[10] Critical Art Ensemble, *The Molecular Invasion* (Autonomedia, 2002)

and one of the easiest to find examples within. This can follow the methods and practices of many computer trojan horses [11], viruses [12], rabbits [13], and worms. [14] A more contemporary example of a *Soft Parasite* can be found in the works surrounding the development of 802.11b standards for wireless networks. One of the early terms used to describe the practice of sharing wireless nodes with traveling or community users was "parasitic grid." While this term has met with much criticism, it is a part of the actions history and useful for this argument in understanding system behavior. The "parasitic grid" has taken two forms. One involves simply placing wireless routers on a home user's roof - sharing the wealth. A more complex form involves "sniffing" out areas of wireless coverage. "Sniffing" out available wireless networks while moving around an area with a device such as a laptop is known as "wardriving." Here is a description of this process by the credited inventor of the term, Pete Shipley:

The 802.11 networking standard, also known as, "Wireless Ethernet", WiFi, and Wireless LAN has become very popular with Internet users and Corporations looking for a cost-effective LAN extension that is easy to implement and provides reliable service. The most popular implementation (as of April 2002) is 802.11b. The 2.4Ghz range, 11Mb speed wireless LAN variety. 802.11b encompasses all of the aforementioned characteristics, yet poorly implements one of the most fundamental aspects of networking, the security. What is the point of providing this type of service to your employees or even your family if you cannot guarantee that their communications are secure. At least with a wireless phone, someone cannot drive by your house and rack up your phone bill. This is exactly the problem with Wireless Ethernet. People can drive, walk or other wise approach the area that the wireless equipment can transmit in, and share your internet access or connect to your computer. This process is known as "wardriving", or "LAN jacking".

It is important to note that the 2.4Ghz range used by 802.11b networks is also used by many home cordless telephones as well as the X10 wireless CMOS camera transmitters and receivers. Operation

on such a trafficked band requires respect for the tolerations of the host. It is important for the user's safety, depending on the nature of your business or behavior, to mask actions with short intervals of connectivity rather than extended usage. This action is primarily useful for incident-based parasitic media responses and not for

parasitic media response. In his 1976 book, *The Selfish Gene* [17], Richard Dawkins defined memes as "...a (cognitive) information-structure able to replicate using human hosts and to influence their behavior to promote replication." Memes can commonly take the form of jokes, key phrases or even folklore.



generative parasites. Similar to the development of the "wardriving" action is the development of "warchalking." [15] "Warchalking" is loosely based on a system of written or graffitied signs or codes used by hobos during the depression. [16] The universal language of signs was used to communicate to other hobos via chalked marks on the sidewalks, box cars of freights and yards. The signs were encoded with useful information about the yards, safety, food or the cops. It was a parasitic system used for knowledge sharing. In "warchalking," LAN-jackers have developed a code of symbols chalked on streets in range of wireless networks or access points to indicate open nodes, closed nodes, and WEP nodes (Encrypted) in urban environments.

Knowledge dissemination of this kind demonstrates a *Memetic Parasite*, which is also a derivative or even a hybrid of a *Human Host Parasite*. The parasite infects the mind, replicates, and physically manifests itself within the urban geography. The host becomes a living codec for the encrypted semantics. Concurrently, this can be seen as a *Slicing Parasite*. The *Memetic Parasite* will also fall under the more general heading of generative para-

parasitic media response. Memes can be transmitted orally in the sense of urban legends or written in the form of the popular WWII meme, "Kilroy Was Here." In an excerpt from *The Lifecycle of Memes* [18], by Henrik Bjarneskans, Bjarne Grønnevik and Anders Sandberg, we can see how the "Kilroy Was Here" meme was conceived and reproduced itself:

This meme originated during the second world war, when wharf inspector James. J. Kilroy of Quincey, Massachusetts used the slogan "Kilroy was here" to mark products he had tested and approved. The marked products appeared on many battlefields, and the signature that seemed to appear just about everywhere caught the imagination of many soldiers, who began to copy it on just about any writable surface (Funk 1950). Most likely others were intrigued by the slogan that appeared in unlikely places, so they copied it further to spread the myth. While the meme spread well for several decades, it eventually went all but extinct in its active form.

A *Memetic Parasite* might take the form of a rumor or a play on a social network. By understanding the operation of language and oral communication, the brain can

[11] Trojan Horse - a program which includes code to carry out functions not intended by the user (e.g. bank transaction rounding).

[12] Virus - a program that can infect other programs by modifying them to include a possibly evolved copy of itself.

[13] Rabbit - a program designed to exhaust system resources by unchecked growth.

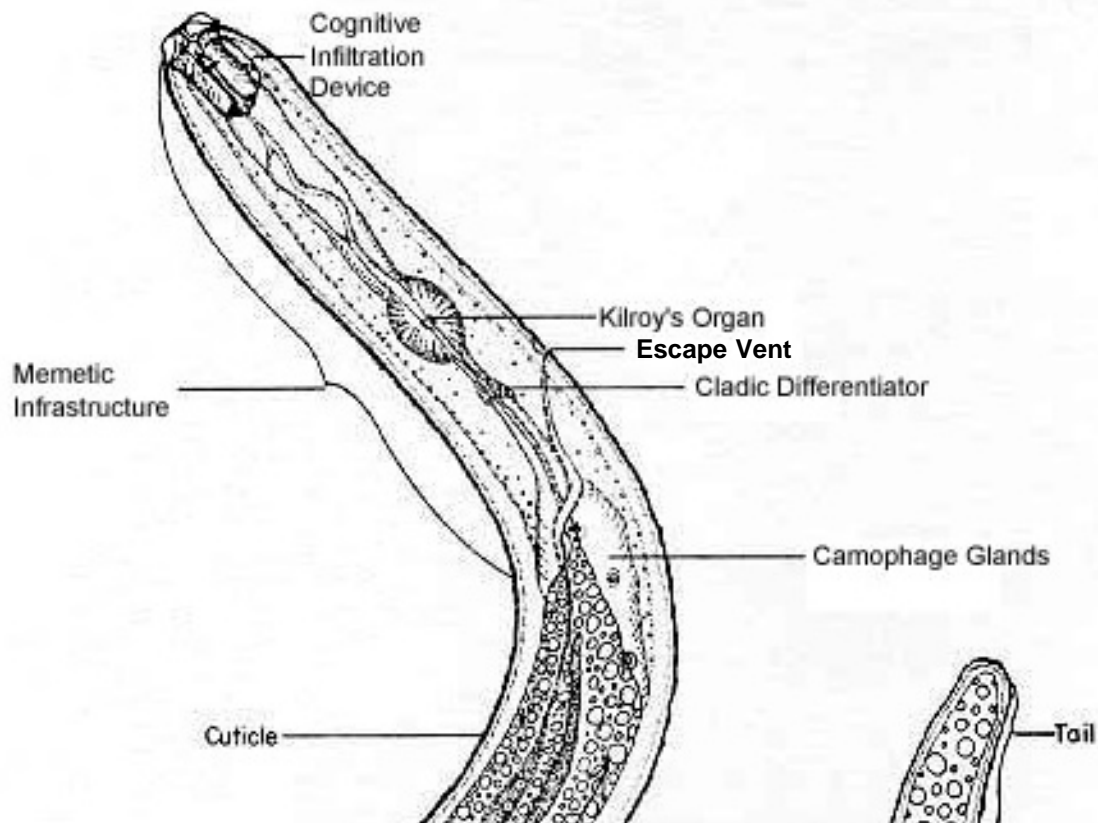
[14] Worm - a program that spreads copies of itself via a network (e.g. Love Bug).

[15] Credit for the invention of this action has been given to London Information Architect Matt Jones, <http://www.blackbeltjones.com/warchalking/index2.html>

[16] The severe economic crisis supposedly precipitated by the U.S. stock-market crash of 1929. The signs influenced large proportions of hobos to flock to El Paso, Texas where generosity to panhandlers was unsurpassed.

[17] Dawkins, Richard, *The Selfish Gene* (Oxford University Press:Oxford, 1976)

[18] Henrik Bjarneskans, Bjarne Grønnevik and Anders Sandberg, *The Lifestyle of Memes*, <http://www.aleph.se/Trans/Cultural/Memetics/memecycle.html#1.1>



serve as an ideal host for a parasite. These parasites require long periods of time to grow and evolve; however, through a version of natural selection, they can offer an effective way of altering primary host behavior. Examples for this genre as a form of parasitic response are currently lacking. Creative tactical actions involving memes as parasites will emerge as the language of parasitic media continues to develop and experimentation edges forward.

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Parasitic media response is a practice that may not need such definitions. It has existed forever and at the same time is an infant. Finding new tools and choosing our weapons appropriately is the charge of the tactical media activist. Our weapons in the case of the tactic of parasitic media response are non-traditional. They are hidden from the views of the public and of the institutions of academia and the arts and sciences. They must remain hidden - their development and survival depend upon it. Parasitic approaches to media manipulation or extension is an area that demands much further experimentation. These experiments need not be technical,

intelligent agent

as we can see with the *Memetic Parasites*. They can be as simple as vocalizing a concept or as difficult as creating transgenic organisms. These are all acceptable tactics for radical and parasitical behavior. They are in a period of tactical expression that is undergoing a transformation from an engineering model to a biological model, from logic to interpretation, from hard to soft. As this shift occurs, we are given an opportunity to reassert the aims of our practice while claiming the tactics of the parasite as our own media creation tool - a parasitic media.

In a time of renewed repression of political dissent, we must look to bacteria as our key to survival. Our fight is theirs. While radicals might appear to lack the capital or the voice afforded the ruling body, we are a critical appendage. We can invade our hosts as parasites. We can turn traitor and rise up in violent fashion with a gun held against the head of a genetic strand. We can mask ourselves as parasites. Invisibility is our savior. We can slay the beast from the inside out. The criticality is in remaining hidden when inside the belly of the beast. The beast is not the host

itself but the functionality of the host. The parasite can operate within the host to slowly create a cellular shift in its primary usage. It is through a long cancer-like growth that the parasite can slowly alter the construction of its host. The generative parasitic media response that I am defining may not affect many immediate results. The incident-based parasitic media that creates additional functionality or added usage for a host may eventually build its adaptation into the base makeup of its host. Rather than rely on an immediate revolution, these tactics are a form of molecular revolution [19] that takes much planning, skill, and patience. Their value will be determined with time. Like the mythical Jonah who was swallowed by a whale, we will tear our way out from the inside and survive longer than three days and three nights inside the belly of the host creature. This is the cry for a parasitic revolution.

I leave you with a quote from Dumont in the 1982 Disney techno-classic movie *Tron* [20]: "All that is visible must grow beyond itself, and extend into the realm of the invisible."

[19] "Through a systematic decentering of desire, micropolitical analysis will lead to soft subversions and imperceptible revolutions that will eventually change the face of the world." Guattari, Felix, *Soft Subversions*, Semiotext(e) (1996)
 [20] *Tron*, Disney, written and directed by Steve Lisberger 1982. A computer hacker is divided into molecules and transported into a computer. Inside the computer, a malicious virus behaves as a dictator of sorts, called Master Control. Once inside the system he helped to author, he joins forces with a book keeping program and his girlfriend and together try to replace Master Control with Tron - an honest safety system.