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MIT Shows How to Shut Down Brain With Light

Posted by samzenpus on Thursday March 29, @04:32AM
from the men-in-black dept.

An anonymous reader writes *"The MIT home-page story today is about a way to [use light to shut down brain activity](#).*



"Scientists at the MIT Media Lab have invented a way to reversibly silence brain cells using pulses of yellow light, offering the prospect of controlling the haywire neuron activity that occurs in diseases such as epilepsy and Parkinson's disease."

[+] [snowcrash](#), [biotech](#), [deathray](#) ([tagging beta](#))

- **There are easier ways**

(Score:5, Funny)

by [joe_cot \(1011355\)](#) on Thursday March 29, @04:34AM ([#18525831](#))

(<http://www.joeterranova.net/>)

There are easier ways to shut down brain activity. 4chan comes to mind.

[[Reply to This](#)]

o

Re:There are easier ways

(Score:5, Funny)

by [drwiii \(434\)](#) on Thursday March 29, @04:55AM ([#18525927](#))

Rule 1 violation.

[[Reply to This](#) | [Parent](#)]

- [Re:There are easier ways](#) by Anonymous Coward (Score:1) Thursday March 29, @12:09PM

- **1 reply beneath your current threshold.**

- o [Re:There are easier ways](#) by dosle (Score:1) Thursday March 29, @09:17AM
- o [Re:There are easier ways](#) by Anonymous Coward (Score:1) Thursday March 29, @09:54AM
- o [Re:There are easier ways](#) by Profane MuthaFucka (Score:1) Thursday March 29, @10:18AM
- o [Re:There are easier ways](#) by Nemetroid (Score:1) Thursday March 29, @11:18AM
 - **1 reply beneath your current threshold.**
- o [Re:There are easier ways](#) by The Relentless (Score:2) Thursday March 29, @01:22PM
- o [See also: melanopsin, receptor in human eye, sleep](#) by ankhand (Score:3) Thursday March 29, @03:50PM
- o [Re:There are easier ways](#) by beckerist (Score:1) Thursday March 29, @12:00PM
- o [Re:There are easier ways](#) by HTH NE1 (Score:2) Thursday March 29, @12:23PM
- o [Re:There are easier ways](#) by Tatarize (Score:2) Friday March 30, @03:04AM

- o [13 replies](#) beneath your current threshold.

- **Who wants to bet...**

(Score:5, Funny)

by Anonymous Coward on Thursday March 29, @04:35AM ([#18525837](#))

...that this is actually a plan to invent the Neuralizer from Men in Black?

[[Reply to This](#)]

- o [Re:Who wants to bet...](#) by mrjatsun (Score:1) Thursday March 29, @08:44AM
- o [Going with...](#) by DannyO152 (Score:2) Thursday March 29, @08:50AM
- o [Re:Who wants to bet...](#) by JohnnyLocust (Score:1) Thursday March 29, @10:38AM
 - [L.O.O.K.E.R.](#) by HTH NE1 (Score:3) Thursday March 29, @12:31PM
- o [Re:Who wants to bet...](#) by savorymedia (Score:1) Thursday March 29, @11:50AM
- o [well](#), by porl (Score:1) Thursday March 29, @07:35AM
- o [4 replies](#) beneath your current threshold.

- **Finally!**

(Score:5, Funny)

by [Steve--Ballmer \(1070854\)](#) on Thursday March 29, @04:37AM ([#18525845](#))

... a scientific reason why we

/ers should not leave the darkness of our parents' basements and our computer monitors, and continue to avoid the dreaded realm known as "outside".

[[Reply to This](#)]

- o [Re:Finally!](#) by jeffeb3 (Score:1) Thursday March 29, @10:14AM
 - [Re:Finally!](#) by RxScram (Score:1) Thursday March 29, @11:15AM
- o [Re:Finally!](#) by grammar fascist (Score:3) Thursday March 29, @12:39PM
 - [Re:Finally!](#) by tanguyr (Score:2) Thursday March 29, @01:59PM
 - [Re:Finally!](#) by StarfishOne (Score:1) Thursday March 29, @03:52PM
 - [Re:Finally!](#) by NeilTheStupidHead (Score:1) Thursday March 29, @05:38PM
- o [3 replies](#) beneath your current threshold.

- **Slight problem with their idea...**

(Score:5, Insightful)

by Anonymous Coward on Thursday March 29, @04:39AM ([#18525857](#))

According to the article:

When neurons are engineered to express the halorhodopsin gene, the researchers can inhibit their activity by shining yellow light on them. Light activates the chloride pumps, which drive chloride ions into the neurons, lowering their voltage and silencing their firing.

So, if we genetically engineer some people with Parkinson's or epilepsy to have these halorhodopsin neurons, we can give them a normal life as long as we find a way to shine light directly into their brains?

[[Reply to This](#)]

- o [Re:Slight problem with their idea...](#) by mrbluze (Score:3) Thursday March 29, @05:33AM
 - **Re:Slight problem with their idea...**

(Score:5, Insightful)

by [kripkenstein \(913150\)](#) on Thursday March 29, @07:38AM ([#18526547](#))

(<http://6thsenseless.blogspot.com/>)

No, actually the article directly implies that human treatment will come out of this:

"In the future, controlling the activity patterns of neurons may enable very specific treatments for neurological and psychiatric diseases, with few or no side effects," said Edward Boyden, assistant professor

- so this is **not**

just a case of a bad writeup of serious research, or a bad summary on Slashdot. It could be a quote taken out of context, though. In any case, the researchers think this (or something related to it) will be viable eventually, while I, for one, must agree with the grandparent post - how exactly will these light-sensitive chloride pumps get into the brains of already-living sick people?

I assume that the final human treatment, if any is arrived at, will be very different from what they are doing at present. Time will tell. In any case, a very interesting area of research, even if it is hyped a little regarding possible applications.

[[Reply to This](#) | [Parent](#)]

- [Re:Slight problem with their idea...](#) by mrbluze (Score:1) Thursday March 29, @08:01AM
- [Re:Slight problem with their idea...](#) by milamber3 (Score:2) Thursday March 29, @08:58AM

▪

It's a wetware debugger.

(Score:4, Interesting)

by [TapeCutter \(624760\)](#) on Thursday March 29, @08:58AM ([#18527013](#))

(Last Journal: [Tuesday February 13, @06:31PM](#))

I think the part about controlling fits is very vague, I read "sponsor bait" or to be more polite speculation.

Overall I think TFA gave the impression they are planning to **use it to non-invasively investigate "circuits"** in the hope of creating a device that can predict and prevent a fit with the minimum of intervention.

The news (to me) in the story is a non-invasive tool that can "flip" individual neurons into a binary on/off state in a controlled manner. I don't know what current "tools" are capable of, nor their level of invasiveness, but it seems to me a wetware debugging tool such as this could lead to an explosion of knowledge that would make it worthy of a Nobel prize in the not too distant future.

Having said that, AFAIK individual neurons are not binary, their activity level is measured as a "frequency". It would be interesting to know if the neuron's firing frequency can be controlled with more resolution than the simple on/off implied in TFA.

[[Reply to This](#) | [Parent](#)]

- [Re:It's a wetware debugger.](#) by TheObruniSpeaks (Score:3) Thursday March 29, @10:35AM
- [Re:It's a wetware debugger.](#) by Plekto (Score:1) Thursday March 29, @02:43PM
- [Re:It's a wetware debugger.](#) by Coraon (Score:1) Thursday March 29, @11:57PM
- [TFA](#) by thegnu (Score:2) Thursday March 29, @09:13AM
- [Re:Slight problem with their idea...](#) by bkr1_2k (Score:1) Thursday March 29, @09:28AM
- [Re:Slight problem with their idea...](#) by hey! (Score:2) Thursday March 29, @09:44AM
- [Re:Slight problem with their idea...](#) by superbrose (Score:1) Thursday March 29, @10:39AM
 - [Re:Slight problem with their idea...](#) by garnetlion (Score:1) Thursday March 29, @02:48PM
- [Re:Slight problem with their idea...](#) by mcpkaos (Score:2) Thursday March 29, @11:16AM
- [Re:Slight problem with their idea...](#) by Chris whatever (Score:1) Thursday March 29, @08:24AM
 - [Re:Slight problem with their idea...](#) by Molochi (Score:1) Thursday March 29, @11:48AM
- [Re:Slight problem with their idea...](#) by Anonymous Coward (Score:1) Thursday March 29, @06:54AM
- [Re:Slight problem with their idea...](#) by mrogers (Score:2) Thursday March 29, @07:33AM
- [Re:Slight problem with their idea...](#) by osgeek (Score:2) Thursday March 29, @09:09AM
- [Re:Slight problem with their idea...](#) by robotkid (Score:1) Thursday March 29, @02:29PM
- [Re:Slight problem with their idea...](#) by ijakings (Score:1) Thursday March 29, @08:41AM
 - **1 reply beneath your current threshold.**
- **2 replies beneath your current threshold.**

• **does it come in an ale?**

(Score:5, Funny)

by [User 956 \(568564\)](#) on Thursday March 29, @04:40AM ([#18525859](#))

(<http://www.atomjax.com/>)

The MIT home-page story today is about a way to use light to shut down brain activity.

Well, I guess that's cheaper than alcohol.

[[Reply to This](#)]

- [Re:does it come in an ale?](#) by untouchableForce (Score:1) Thursday March 29, @07:06AM
- [Re:does it come in an ale?](#) by spikedvodka (Score:2) Thursday March 29, @09:46AM
- **1 reply beneath your current threshold.**

• **Politics**

(Score:5, Funny)

by [nagora \(177841\)](#) on Thursday March 29, @04:43AM ([#18525869](#))

Expect to see a lot of yellow lights at party rallies from now on...

[[Reply to This](#)]

- [Re:Politics](#) by hazem (Score:2) Thursday March 29, @10:24AM
- [Re:Politics](#) by sckeeper (Score:2) Thursday March 29, @10:31AM
- [Makes sense](#) by gaderael (Score:2) Thursday March 29, @04:47AM

○

Re:Makes sense

(Score:4, Insightful)

by [bindo \(82607\)](#) on Thursday March 29, @05:06AM ([#18525975](#))

Considering certain patterns of light, as found in some video games, for example, have the ability to bring about seizures and people the suffer from Epilepsy, it makes sance that certain patterns of light would also be able to reverse that effect.

Considering certain patterns of falling boulders, as found on some mountains, for example, have the ability to bring death and people the suffer from Epilepsy (sic!). it makes sance that certain patterns of falling boulders would also be able to reverse that effect.

NOT!

Common sense is not a substitute for knowledge. The two effects are not even related.

[[Reply to This](#) | [Parent](#)]

- [Re:Makes sense](#) by Lorkki (Score:2) Thursday March 29, @06:35AM
 - [Re:Makes sense](#) by SatanicPuppy (Score:2) Thursday March 29, @09:50AM
 - [Re:Makes sense](#) by RobertLTux (Score:1) Thursday March 29, @01:32PM
 - [Re:Makes sense](#) by SatanicPuppy (Score:2) Thursday March 29, @01:53PM
 - [Re:Makes sense](#) by donscarletti (Score:2) Friday March 30, @07:52AM
 - [Re:Makes sense](#) by Shrubber (Score:3) Thursday March 29, @08:58AM
 - [Re:Makes sense](#) by fireboy1919 (Score:2) Thursday March 29, @08:31PM
 - [Re:Makes sense](#) by moeinvt (Score:2) Thursday March 29, @02:44PM
- [Re:Makes sense](#) by MichaelSmith (Score:2) Thursday March 29, @05:56AM
- [Re:Makes sense](#) by TheObruniSpeaks (Score:1) Thursday March 29, @10:12AM
- **[I reply beneath your current threshold.](#)**
- [I know this technique](#) by Anonymous Coward (Score:1) Thursday March 29, @04:49AM
- [Sounds like The Prisoner is coming to life!](#) by Tribbles (Score:2) Thursday March 29, @04:52AM
 - [Or Wolfe](#) by CRCulver (Score:2) Thursday March 29, @04:59AM

■

Re:Or Wolfe

(Score:5, Informative)

by [cnettel \(836611\)](#) on Thursday March 29, @05:08AM ([#18525979](#))

This is direct exposure, not through the eyes. In addition, the neurons have been altered (an added gene with a photosensitive product) to respond to this treatment.

[[Reply to This](#) | [Parent](#)]

- [Re:Or Wolfe](#) by Gryffin (Score:2) Thursday March 29, @11:18AM
- [Re:Or Wolfe](#) by dutin (Score:1) Thursday March 29, @10:11AM

○

It's about brain implants for research purposes

(Score:4, Insightful)

by [mrbluze \(1034940\)](#) on Thursday March 29, @05:40AM ([#18526107](#))

Did anyone read TFA? It has nothing to do with light entering the eye and hitting the retina. Forget the strobe lights!

This study is great, because it means we can study animals better. It means researchers will get much more useful information from animal studies (instead of operating on 1000's of rabbits or something, they can do heaps of studies on just one rabbit), which will lead to new and better targets for drug research, better drugs, and perhaps a cure - **way** down the track.

[[Reply to This](#) | [Parent](#)]

- [Re:It's about brain implants for research purposes](#) by ogma (Score:3) Thursday March 29, @06:18AM

■

Re:It's about brain implants for research purposes

(Score:4, Funny)

by [bobscealy \(830639\)](#) on Thursday March 29, @06:42AM ([#18526335](#))

Did anyone read TFA?

You ain't from round here, are you boy?

[[Reply to This](#) | [Parent](#)]

- [Re:It's about brain implants for research purposes](#) by mrogers (Score:1) Thursday March 29, @07:40AM
- [Re:It's about brain implants for research purposes](#) by tgv (Score:2) Thursday March 29, @08:20AM
- [Re:It's about brain implants for research purposes](#) by roman_mir (Score:2) Thursday March 29, @12:18PM
- [Re:It's about brain implants for research purposes](#) by LynnwoodRooster (Score:1) Thursday March 29, @08:39PM
 - [Re:It's about brain implants for research purposes](#) by mrbluze (Score:2) Friday March 30, @12:22AM

• **Hooray!**

(Score:5, Funny)

by [mikkelm \(1000451\)](#) on Thursday March 29, @04:53AM ([#18525913](#))

Finally I can get a pair of tinfoil shades to go with my hat.

[[Reply to This](#)]

- [Re:Hooray!](#) by GodfatherofSoul (Score:2) Thursday March 29, @01:54PM
- [Re:Hooray!](#) by rolfc (Score:1) Thursday March 29, @06:14AM
- **[I reply beneath your current threshold.](#)**

- [is it a tv?](#) by Anonymous Coward (Score:1) Thursday March 29, @04:54AM
- [Hmmm, sounds strangely familiar](#) by Slugster (Score:1) Thursday March 29, @05:07AM
 - [Re:Hmmm, sounds strangely familiar](#) by HTH NE1 (Score:1) Thursday March 29, @10:06AM
 - [Re:Hmmm, sounds strangely familiar](#) by Chruisan (Score:1) Thursday March 29, @11:23AM

• **I, for one...**

(Score:3, Funny)

by [bwd234 \(806660\)](#) on Thursday March 29, @05:12AM ([#18525993](#))

welcome our new yellow light emitting overlords!

[[Reply to This](#)]

- [Re:I, for one...](#) by bwd234 (Score:1) Thursday March 29, @11:05AM
- **[I reply beneath your current threshold.](#)**

• **Damn yellowish incandescents.**

(Score:3, Funny)

by [SeaFox \(739806\)](#) on Thursday March 29, @05:12AM ([#18525997](#))

Scientists at the MIT Media Lab have invented a way to reversibly silence brain cells using pulses of yellow light

Yet another reason CFLs are better!

[[Reply to This](#)]

• **Another ,,,**

(Score:5, Funny)

by [BlueTrin \(683373\)](#) on Thursday March 29, @05:15AM ([#18526007](#))

(<http://www.blue.com/> | Last Journal: [Tuesday July 15, @09:35PM](#))

Another sexist topic about blonde girls !

[[Reply to This](#)]

• **Requires halorhodopsin gene**

(Score:5, Interesting)

by [sshore \(50665\)](#) on Thursday March 29, @05:25AM ([#18526039](#))

According to the article, the yellow light "silences" neurons that have been engineered to include the halorhodopsin gene found in

certain bacteria. The light doesn't have the same effect on the neurons that you'd typically find in your skull.

I'm not sure how this would be used clinically to treat epilepsy. Perhaps by introducing the genes into cells in the affected area using a retrovirus?

[[Reply to This](#)]

- [Re:Requires halorhodopsin gene](#) by MichaelSmith (Score:2) Thursday March 29, @05:59AM
 - [Re:Requires halorhodopsin gene](#) by The_mad_linguist (Score:1) Thursday March 29, @07:27AM
- [Re:Requires halorhodopsin gene](#) by prelelat (Score:2) Thursday March 29, @10:16AM
- [Re:Requires halorhodopsin gene](#) by Dread_ed (Score:2) Thursday March 29, @11:21AM
 - [Re:Requires halorhodopsin gene](#) by TheSync (Score:3) Thursday March 29, @11:57AM
- [Yellow light?](#) by durin (Score:1) Thursday March 29, @05:26AM
 - [Re:Yellow light?](#) by solevita (Score:2) Thursday March 29, @06:17AM
 - [Re:Yellow light?](#) by Goaway (Score:3) Thursday March 29, @08:38AM
 - [Re:Yellow light?](#) by Goaway (Score:2) Thursday March 29, @05:03PM
 - **1 reply beneath your current threshold.**
 - **1 reply beneath your current threshold.**
- [Bah, too slow](#) by GFree (Score:2) Thursday March 29, @05:32AM
- [Tin foil glasses](#) by Eudial (Score:2) Thursday March 29, @05:58AM
- [Hal Jordan unavailable for comment...](#) by Anonymous Coward (Score:1) Thursday March 29, @06:11AM
- [Like MIB](#) by Warg! The Orcs!! (Score:2) Thursday March 29, @06:20AM
- [I've seen this in real life](#) by Centurix (Score:1) Thursday March 29, @06:34AM
 - [My mother-in-law.....](#) by OneSmartFellow (Score:1) Thursday March 29, @07:07AM
- [Obligatory](#) by Dragon By Proxy (Score:1) Thursday March 29, @06:39AM
- [Misuse](#) by kraemate (Score:1) Thursday March 29, @06:47AM
- [belonging](#) by Stooshie (Score:2) Thursday March 29, @06:48AM
- [Three memes in one, whee](#) by FirienFirien (Score:2) Thursday March 29, @06:52AM

• **Great!**

(Score:4, Insightful)

by [John Betonschaar \(178617\)](#) on Thursday March 29, @07:09AM ([#18526431](#))

Now all we need is a different type of light to **activate** some people's brains!

[[Reply to This](#)]

- [Re:Great!](#) by d3m0nCr4t (Score:1) Thursday March 29, @07:38AM
- [Re:Great!](#) by TheObruniSpeaks (Score:1) Thursday March 29, @10:23AM

• **If yellow light shuts down brain cells...**

(Score:5, Funny)

by [SethHoyt \(1024709\)](#) on Thursday March 29, @07:27AM ([#18526487](#))

Could this explain why when a traffic light turns yellow, nobody seems to notice it?

[[Reply to This](#)]

- [Re:If yellow light shuts down brain cells...](#) by hyfe (Score:2) Thursday March 29, @08:39AM
- [And blue movies....](#) by EmbeddedJanitor (Score:2) Thursday March 29, @02:41PM

• **We already knew this**

(Score:3, Funny)

by [TomatoMan \(93630\)](#) on Thursday March 29, @07:35AM ([#18526523](#))

(<http://frobnosticate.com/> | Last Journal: [Friday October 26, @11:05AM](#))

TV has been shutting all of our brains down for decades.

[[Reply to This](#)]

- [Re:We already knew this](#) by A_Non_Moose (Score:2) Thursday March 29, @12:09PM
- [Not new](#) by Graywolf (Score:1) Thursday March 29, @07:43AM
- [I read that wrong](#) by goraknotsteve (Score:1) Thursday March 29, @07:49AM
- [Everything is clear now](#) by octogen (Score:1) Thursday March 29, @07:58AM
- [All that glitters](#) by abb3w (Score:1) Thursday March 29, @08:24AM
 - [Re:All that glitters](#) by Kingrames (Score:2) Thursday March 29, @01:33PM
 - [Re:All that glitters](#) by StickyPad (Score:2) Thursday March 29, @07:39PM
 - **2 replies beneath your current threshold.**
- [No news to me](#) by Big Young (Score:2) Thursday March 29, @08:29AM
- [Old news!](#) by OriginalArlen (Score:2) Thursday March 29, @08:38AM

- [Daggers of the Mind?](#) by scovetta (Score:2) Thursday March 29, @08:42AM
- [Next: yellow lights in the Whitehouse & Congre](#) by mnemotronic (Score:2) Thursday March 29, @08:47AM

- **With Light + *Genetic Engineering***

(Score:4, Informative)

by [Doc Ruby \(173196\)](#) on Thursday March 29, @08:53AM ([#18526957](#))

(<http://slashdot.org/~Doc%20Ruby/journal> | Last Journal: [Thursday March 31, @02:48PM](#))

When neurons are engineered to express the halorhodopsin gene, the researchers can inhibit their activity by shining yellow light on them.

So not only would doctors have to get light *inside the brain*, they'd first have to *genetically engineer* the neurons to include and express the halorhodopsin gene. The right neurons: the ones that will later have Parkinson's Disease or whatever is being treated.

How are they going to guess which neurons? Which healthy person is going to let them genetically engineer their neurons? Those neurons are going to behave the same, though they're now expressing proteins that make them work like retinal cells?

Installing these shutdown hooks is a neat trick. But not for neurological medicine. Maybe for some biomechanics or biocomputation. Throwing genes into neurons for probing with light so violates our most absolutely personal spaces - inside our craniums and our genomes - that the cure is worse than the disease.

[[Reply to This](#)]

- [Easy.](#) by RealProgrammer (Score:2) Thursday March 29, @01:08PM
- [Re:With Light + *Genetic Engineering*](#) by robotkid (Score:1) Thursday March 29, @02:50PM
- [Getting light in might not be particularly hard.](#) by Medievalist (Score:1) Thursday March 29, @04:55PM
- [I see it already](#) by marcello_dl (Score:2) Thursday March 29, @09:04AM
 - [Re:I see it already](#) by Snick^ (Score:1) Thursday March 29, @11:15AM
- [Matrix](#) by javalizard (Score:1) Thursday March 29, @09:17AM
- [So now...](#) by Dunbal (Score:2) Thursday March 29, @09:20AM
- [The best thing about this discovery...](#) by s_p_oneil (Score:2) Thursday March 29, @09:44AM
- [Flashing lights](#) by Delight-Delirium (Score:1) Thursday March 29, @09:47AM
- [Damn you, Sinestro!](#) by Ark (Score:1) Thursday March 29, @09:52AM
- [Eh](#) by TobyRush (Score:1) Thursday March 29, @09:55AM
- [Yellow Light?](#) by njfuzzy (Score:2) Thursday March 29, @10:44AM
- [Moo](#) by Chacham (Score:1) Thursday March 29, @10:48AM
- [No....](#) by qazxswedc (Score:1) Thursday March 29, @11:29AM
- [Terminal man](#) by Frank T. Lofaro Jr. (Score:2) Thursday March 29, @11:42AM

- **Works on drivers**

(Score:3, Funny)

by [Frank T. Lofaro Jr. \(142215\)](#) on Thursday March 29, @11:58AM ([#18529325](#))

(<http://www.linux.com/>)

Yellow light shuts down brain activity in the drivers here in Nevada quite well.

Makes them forget that a yellow light means "go slow", not "go really really really fast".

[[Reply to This](#)]

- [Looker](#) by Richard W.M. Jones (Score:2) Thursday March 29, @12:48PM
- [Eh, big deal.](#) by mdm-adph (Score:1) Thursday March 29, @01:08PM
- [Solution](#) by PPH (Score:1) Thursday March 29, @01:22PM
- [That would explain...](#) by Vitriol+Angst (Score:2) Thursday March 29, @02:12PM
- [Somebody get that bulb out of](#) by Master of Transhuman (Score:2) Thursday March 29, @03:58PM
- [Sponge Bob, say it isn't so!](#) by fahrbot-bot (Score:2) Thursday March 29, @04:24PM
- [In unrelated news](#) by nedder (Score:1) Thursday March 29, @04:52PM
- [this explains something](#) by Khashishi (Score:2) Thursday March 29, @08:51PM
- [Ways to stop the brain](#) by bronsinbound (Score:1) Friday March 30, @09:37AM
- [what if..](#) by rubberbandball (Score:1) Friday March 30, @09:53AM
- [Sign me up!](#) by Seahawker101 (Score:1) Friday March 30, @07:28PM
- [Re:Military use](#) by toQDuj (Score:2) Thursday March 29, @12:08PM
- [18 replies](#) beneath your current threshold.

If what they've been doing hasn't solved the problem, tell them to do something else. -- Gerald Weinberg, "The Secrets of Consulting"

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