

SIGNAL CULTURE COOK BOOK

Edited by Tammy McGovern
with Introduction by Gerar Edizel



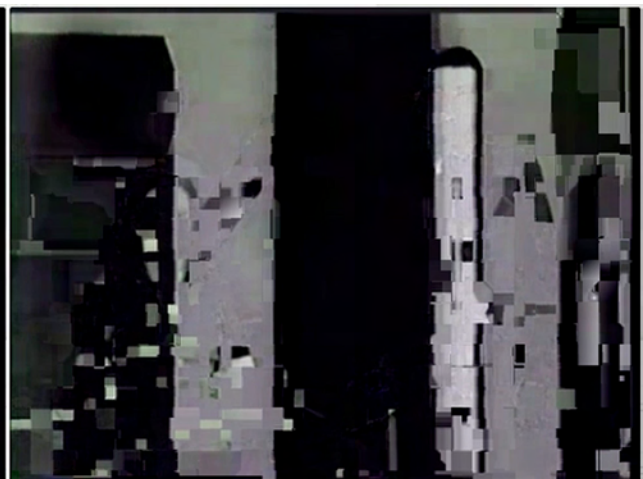
**SIGNAL
CULTURE
COOK
BOOK**

Edited by Tammy McGovern
Introduction by Gerar Edizel

All rights reserved
Copyright © 2014 Signal Culture
Owego, NY
<http://www.signalculture.org>
ISBN: 978-0-9914917-0-4

An Easy 7-Step Protocol for Databending

Michael Betancourt



Databending with a hex editor is the simplest way to get dramatic results with databending. This protocol shows what to do to make small changes to the dataset throughout the file as a whole, and provides some suggestions for ways to alter the data beyond just replacing one value with another, random one.

What's required:

- (1) a HEXADECIMAL editing program, such as HexFiend on the MAC
- (2) a fault-tolerant video player such as VLC with the proper codecs installed so it can re compress your file
- (3) a screen capture utility

Different programs will render the databent file differently, so be willing to try several. When the file can't be recompressed, but will play, the screen capture program allows you to save those results as well. This is the most basic protocol to produce interesting results quickly:

- (1) make a back up copy of the playable file you want to databend
- (2) open the file in your hex editor
- (3) open the find/replace dialogue
- (4) use the "replace all" option to make a change such as D3 to E3; (depending on the file, this might take a minute or two)
- (5) write down what the change was so you can keep track of what works
- (6) "save as" a file with a new name
- (7) test the file; don't panic if it doesn't work—just try again!

Your file should be saved with a new name so you can track the results. If it doesn't work, repeat Step 4 using a different value—this is why keeping notes on what you do is essential!

There are changes that will completely break most files, so if it doesn't work the first time, don't panic. Just reopen the unglitched file and try again with a different value.

Note: The effects will vary depending on the dataset, level and kind of compression used (mpeg and H.264 produce very different result), and particulars of the changes made to the HEX file. (Replacing FF will break most .mpeg files.)

Altering data with this protocol can be done in several ways that won't usually break the file, but will create strange effects and can make it difficult to open with some video players.

Remember that the dataset is in base-16, so the valid numbers are 0 – 9 plus A – F, giving the allowed numbers: 0 1 2 3 4 5 6 7 8 9 A B C D E F.

An Easy 7-Step Protocol for Databending

Depending on how much information you're altering, here are some example approaches to handling the data:

TRANSPOSITION

take a paired set of values D8 56 and change to 56 D8

SUBSTITUTION

take a paired set of values D8 56 and change to D6 58

INVERSION

take a paired set of values D8 56 and change to 8D 65

RETROGRADE

take a paired set of values D8 56 and change to 65 8D

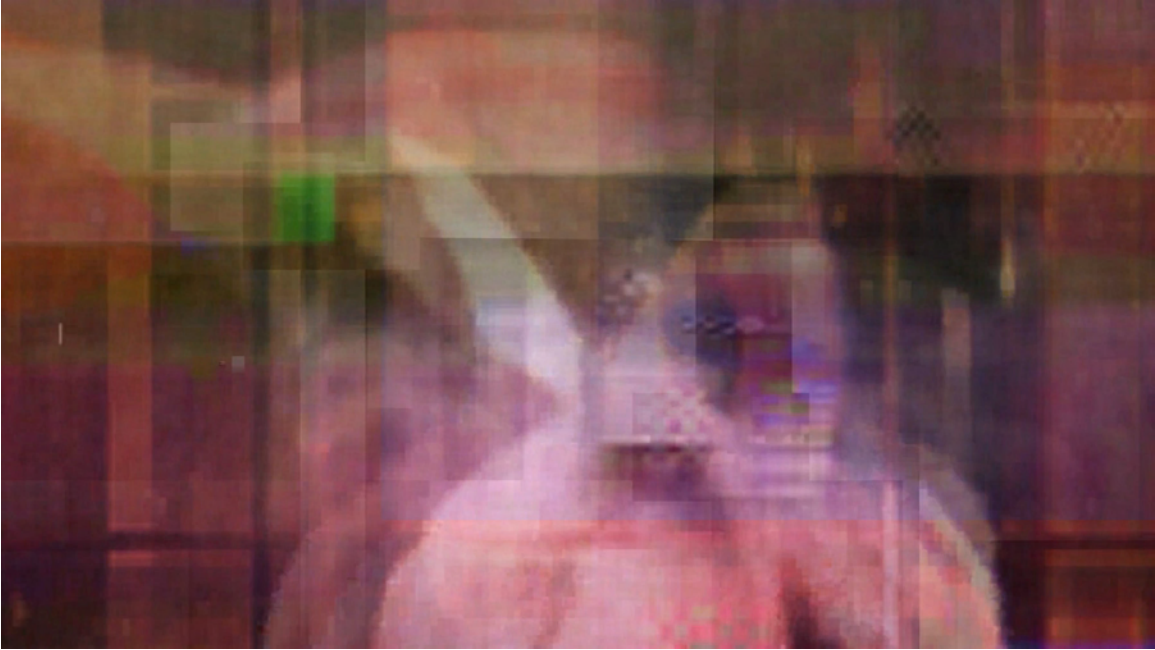
ASCENT/DESCENT

take a value and move it down one notch F8 to E8

Your mileage may vary: This collection of engagements may not work in all cases, or with all compressions. Stacking multiple changes together in a file can produce a file that stops being readable. Save often and test between each iteration of data alteration.

Here are some basic value changes to get you started with databending a file compressed with H.264:

34 62 to 62 34	“melting effect”
78 87 to 87 78	“disintegrates”
99 56 to 56 99	????? try it and find out!



Still from *Dancing Glitch*, HD video by Michael Betancourt, 2013. [Click to play.](#)