

THE SOURCE_E

ISSUE 3

I Shot Andy Warhol, 2002

Cory Arcangel



2013

Arcangel Surfware

www.coryarcangel.com

00001af0	d0 90 a0 20 41 41 83 82	6f ef df df be be 7c 7d	... AA..o.... }}	00001d80	fe fe 00 fe fe 00 fe fe	fe fe 00 fe fe 00 fe fe
00001b00	ff fc f0 e0 c0 c0 81 83	fc f3 ef df bf bf 7e 7c~	00001d90	fe 00 fe fe fe fe 00	fe 00 fe fe fe fe 00
00001b10	06 05 0d 0b 1b 17 37 2f	f9 fb f3 f7 e7 ef cf df7/.....	00001da0	00 00 00 00 00 20 20	fe fd fb f7 ef df bf 7f
00001b20	6f 5f df bf bf 7f 7f ff	9f bf 3f 7f 7f ff ff ff	o.....?.....	00001db0	00 00 02 02 12 12 12	fe fd fb f7 ef df bf 7f
00001b30	ff 00 00 00 00 00 ff 00	00 ff ff ff ff ff 00 ff	00001dc0	20 20 20 20 20 20 20	ff ff ff ff ff ff ff ff
00001b40	ff 3f 0f 07 03 03 81 c1	3f cf f7 fb fd fd 7e 3e	.?.....?.....>	00001dd0	a0 20 e0 f0 f8 fc fe 00	ff 3f ff ff ff ff ff 00?.....
00001b50	60 a0 b0 d0 d8 e8 ec f4	9f df cf ef e7 f7 f3 fb	^.....?.....	00001de0	12 12 12 12 12 12 12	ff ff ff ff ff ff ff ff
00001b60	f6 fa fb fd fd fe fe ff	f9 fd fc fe fe ff ff ff	00001df0	92 d2 12 f2 fa 02 fe ff	ff ff 1f ff ff 03 ff ff
00001b70	bf 80 40 4f 2f 24 14 13	40 7f bf bf d8 df ef ef	..@/s..@.....	00001e00	7f 7f 00 bf bf 00 df df	7f 7f 00 bf bf 00 df df
00001b80	0b 09 05 04 82 82 c1 41	f6 f7 fb fb 7d 7d 3e beA.....}}>	00001e10	df 00 ef ef f7 f7 f7 00	df 00 ef ef f7 f7 f7 00
00001b90	ff 00 00 ff ff 01 01 ff	00 ff ff ff 00 fe fe ff	00001e20	fb fb fd fd fd fe fe fe	fb fb fd fd fd fe fe fe
00001ba0	ff 01 01 ff ff 41 41 3f	00 fe fe ff 80 fe fe ffAA?.....	00001e30	ff ff ff ff ff ff ff ff	41 41 41 41 41 41 41AAAAAAAA
00001bb0	bf 91 51 4f 2f 25 15 13	60 7e be bf d8 de ee ef	..QO/%..^.....	00001e40	ff ff fe fe fc f8 f0 c0	c0 80 00 00 00 00 00
00001bc0	ff 00 00 80 87 8c 8b 8b	00 ff ff ff ff ff ff ff	00001e50	00 00 00 00 00 00 00	00 00 00 7c 7c 00 00 00
00001bd0	8b 8b 8b 8b 8b 8b 8b 8b	ff ff ff ff ff ff ff ff	00001e60	03 03 03 03 03 03 03	fc fc fc fc fc fc fc fc
00001be0	ff 00 00 00 f0 18 e8 e8	00 ff ff ff ff ff ff ff	00001e70	ff ff ff 00 00 00 00 00	00 00 00 00 00 00 00
00001bf0	e8 e8 e8 e8 e8 e8 e8 e8	ff ff ff ff ff ff ff ff	00001e80	c0 c0 c0 c0 c0 c0 c0	3f 3f 3f 3f 3f 3f 3f????????
00001c00	00 00 00 00 00 04 04	7f bf df ef f7 fb fd fe	00001e90	ff ff f0 e8 e7 e7 e8 f0	ff ff ff ff ff ff ff ff
00001c10	00 00 40 40 40 48 48 48	7f bf df ef f7 fb fd fe	..@@HHH.....	00001ea0	ef e7 e7 e7 e8 f0 ff ff	ff ff ff ff ff ff ff ff
00001c20	04 04 04 04 04 04 04 04	ff ff ff ff ff ff ff ff	00001eb0	ff ff 0f 17 e7 e7 17 0f	ff ff ff ff ff ff ff ff
00001c30	ff ff ff ff ff ff ff ff	ff ff 83 ff 83 ff ff ff	00001ec0	f7 e7 e7 e7 17 0f ff ff	ff ff ff ff ff ff ff ff
00001c40	05 04 07 0f 1f 3f 7f 00	ff fc ff ff ff ff ff 00?.....	00001ed0	ff ff ef e7 e7 e7 e8 f0	ff ff ff ff ff ff ff ff
00001c50	48 48 48 48 48 48 48 48	ff ff ff ff ff ff ff ff	HHHHHHH.....	00001ee0	ff ff f7 e7 e7 e7 17 0f	ff ff ff ff ff ff ff ff
00001c60	49 4b 48 4f 5f 40 7f ff	ff ff f8 ff ff c0 ff ff	IKHO_@.....	00001ef0	ff ff 0f 1f ff ff 1f 0f	ff ff ff ff ff ff ff ff
00001c70	ff ff ff ff ff ff ff ff	ff 01 fd fd fd fd fd fd	00001f00	f7 e7 e7 e7 e7 f7 ff ff	ff ff ff ff ff ff ff ff
00001c80	ff ff ff ff ff ff ff ff	fd fd fd fd 01 ff 00 00	00001f10	ff ff f7 e7 e7 f7 ff	ff ff ff ff ff ff ff ff
00001c90	ff ff 00 ff ff 00 ff ff	ff ff ff ff ff ff ff ff	00001f20	ff ff ff ff f8 f0 ff ff	ff ff ff ff ff ff ff ff
00001ca0	ff 00 ff ff ff ff ff 00	ff 00 ff ff ff ff ff 00	00001f30	ff ff f0 f8 ff ff f8 f0	ff ff ff ff ff ff ff ff
00001cb0	fe fe 00 fd fd 00 fb fb	fe fe 00 fd fd 00 fb fb	00001f40	ff ff c0 c0 cf cf c0 c0	ff ff ff ff ff ff ff ff
00001cc0	fb 00 f7 f7 ef ef ef 00	fb 00 f7 f7 ef ef ef 00	00001f50	cc ce cf cf cf ff ff	ff ff ff ff ff ff ff ff
00001cd0	df df bf bf bf 7f 7f 7f	df df bf bf bf 7f 7f 7f	00001f60	ff ff ff ff 1f 0f ff ff	ff ff ff ff ff ff ff ff
00001ce0	00 00 00 00 00 00 ff	ff ff ff ff ff ff ff ff	00001f70	ff ff f0 e8 e7 e7 ef ff	ff ff ff ff ff ff ff ff
00001cf0	ff ff ff ff ff ff ff ff	82 82 82 82 82 82 82	00001f80	ff ff 0f 17 e7 e7 f7 ff	ff ff ff ff ff ff ff ff
00001d00	00 00 00 00 00 ff ff	ff ff ff ff ff ff ff 00	00001f90	f7 e7 e7 e7 14 0c ff ff	ff ff ff ff ff ff ff ff
00001d10	ff ff 7f 7f 3f 1f 0f 03	03 01 00 00 00 00 00?.....	00001fa0	ff ff f0 f8 ff ff ff ff	ff ff ff ff ff ff ff ff
00001d20	ff ff ff ff ff ff ff ff	00 ff 00 00 00 00 00	00001fb0	ff ff 7f 3f 3f 3f 30 7f	ff ff ff ff ff ff ff ff???.
00001d30	ff ff ff ff ff ff ff ff	ff 80 bf bf bf bf bf bf	00001fc0	ff ff ff ff ff ff ff ff	ff ff ff ff ff ff ff ff
00001d40	ff ff ff ff ff ff ff ff	bf bf bf bf 80 ff 00 00	00001fd0	00 00 00 00 00 00 00	ff ff ff ff ff ff ff ff
00001d50	ff ff ff ff ff ff ff ff	00 00 ff 00 ff 00 00 00	00001fe0	ff ff ff ff ff ff ff ff	00 00 00 00 00 00 00
00001d60	ff ff ff ff ff ff ff ff	ff 00 ff ff ff ff ff ff	00001ff0	00 00 00 00 00 00 00	00 00 00 00 00 00 00
00001d70	ff ff ff ff ff ff ff ff	ff ff ff ff 00 ff 00 00	00002000	15 16 17	



Figure 1: My favorite shot of this game in action, mainly due to the jeans the pictured teen is wearing. Location: Fact Center, Liverpool Biennial, 2004. Photo: Michael Connor.

¹ See Figure 1.

² This project still has a bug somewhere, which I had fixed, but the file was on a laptop that was stolen from me in the early aughts. It's a glitch in the text on the second level of the game. The text reads "AndyTV" or something like that. I can't remember where it is, but it's there. I was too heartbroken about my computer going missing to ever fix it. ;(

³ Actually, the easiest way to see this thing is to proly just use a Nintendo emulator. In a hex editor, start with 4E 45 53 1A 02 01 01 00 00 00 00 00 00 00, paste the PRG binary twice, the CHR binary 4 times, ... then double click and you should be ready to go. Otherwise, yeah, you could go out and get 2 27C256 EEPROMS, burn the PRG twice in a row on one, and the CHR 4 times in a row on the other, and swap them out with the EEPROMS in a real Hogan's Alley cartridge. That will also work. What's all this stuff about pasting the PRG code twice, and the CHR code a few times? Well, I learned how to do this NES stuff using 32k 27C256 EEPROMS, therefore if the code was smaller then 32k, I needed to paste it a few times to fill up the EEPROM. ;-)

⁴ See Figure 2.

⁵ See Figure 3.

⁶ *"I've only ever lost one computer. It was one of those white macbooks. Remember those hippy purple clam shell computers Steve Jobs made right after his second stint on the job? It was one of the laptops that came right after that. Man, it was heavy! It was like carrying around lead. But actually, it was a super solid machine. I wrote alot of awesome software on it. I used to take the Amtrak train alot then back and forth to Buffalo, and would just zone out on that computer doing assembly and eating doritos. But anyway, what happened was, the computer was stolen. I left it in the hallway at the office where I was working. This was like maybe 10 years ago. I went in that morning to open up, and I placed the laptop bag on the ground, outside the door, in the hallway, and then did all the complicated unlocking and disarming stuff, yada, yada, yada, but I like totally forgot about my bag! So, I went in, fired up the office Power PC clone, and probably went straight to the <http://www.nytimes.com>. That's where I go when I am too tired to do anything. All the while, my computer was just sitting in the hall! It was probably stolen right away. The police later told me that there is a class of criminal in that neighborhood who*

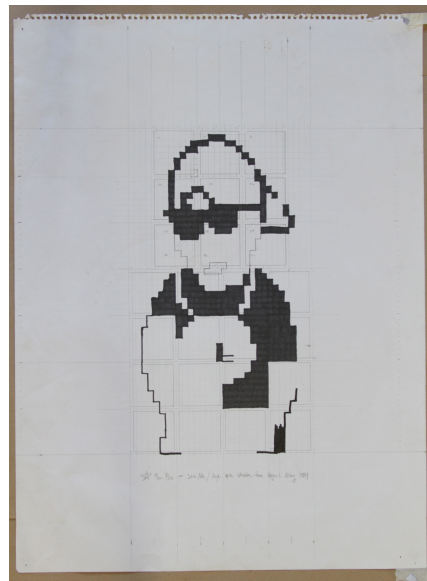


Figure 2: Flav.

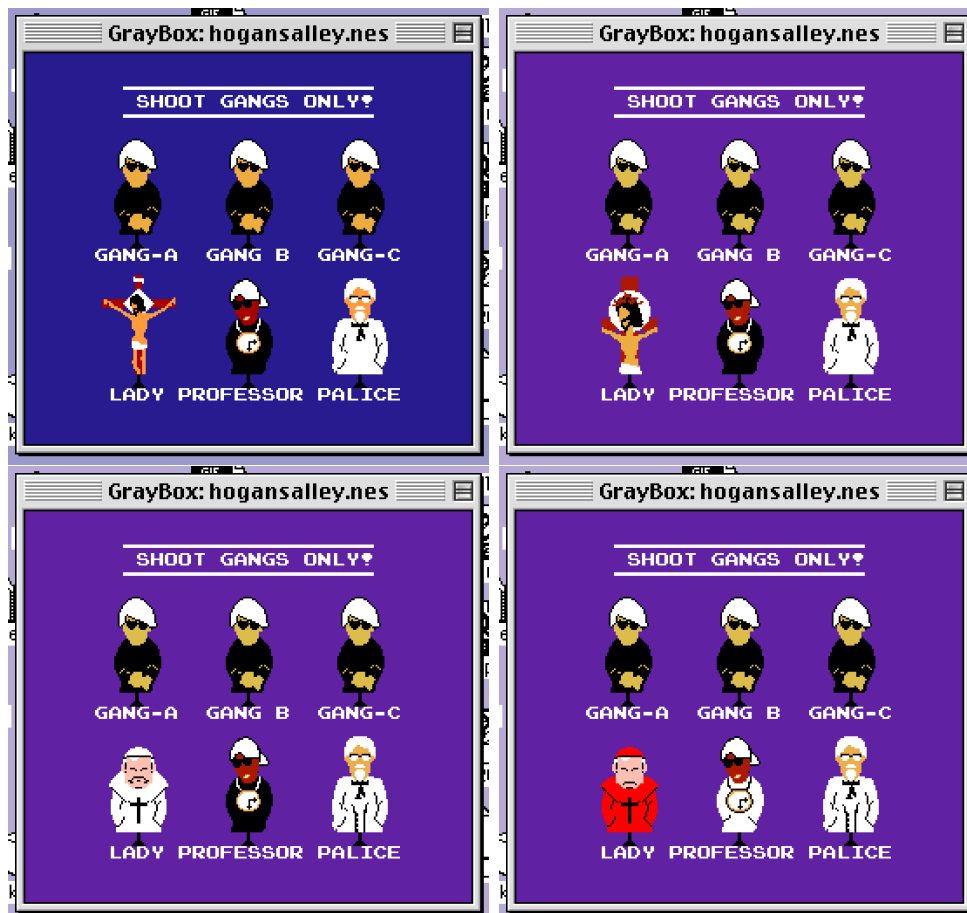


Figure 3: In progress lineups, I went with something similar to the third here.

follow people into work for exactly that purpose. Like kinda high level white collar pick pockets. They look for zoned out, exhausted office drones with brief cases or whatever. Uuuugh. What I remember most was how tired I was that morning. It was the Saturday morning shift, and those Saturday morning shifts were so000ooo000oooo tough, cause nothing usually happened at the office that day, so there was no adrenaline available to pep up anything. I could have fallen asleep on command. I was probably up half the night surfing the web. There was alot of awesome stuff happening on the web then; K10k, slashdot, ebaums world, graphics interchange format! I had to stay up half of every night just to figure out what the hell was going on. But seriously, when I get into those exhaustion fogs, I'm dangerous. I can lose anything. After my computer was taken, I stayed in bed for a week. The depression affected me physically - I had actual physical pain. And, of course, I didn't have like a grand just sitting around at the time for a new laptop. My wallet was also in the laptop bag, tho it was mailed back to me about a month later. That was cool. Though, I remember thinking I wished they would have mailed me my harddrive instead. I lost a lot of work."

⁷ `<h2>The Yada Yada</h2>`

`<div class="blogpost">`

`<p>Unfortunately, the copyright holders of Seinfeld have filed a DMCA request, compelling me to remove the The Yada Yada script from this website. Even though the The Yada Yada script was transcribed by a Seinfeld fan who spent hours and hours completing the transcript, the publication of the The Yada Yada transcript would somehow cause harm to the copyright owners of Seinfeld. Figure that one out.</p>`

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</div>`

`Join the discussion`

⁸ This work is what - at least in 2002 - was called a ROM hack. ROM hacks were popular in the late '90s when video emulation and the net really began to pick up speed. Some clever ppl found out that you could go changing the ones and zeros of video game ROMs and, cause things weren't really compressed so much yet, the changes would have a one to one correspondence to the game. ;-) This particular project wz a *tiny* bit more complicated, since some of the graphics were *kinda* compressed in Hogan's Alley. For example, if a character in the game was symmetrical, only half of that character would be saved in the game's graphic storage, and the other half would just be a program command to display that part once forwards and another time backwards - thus a symmetrical character. Therefore making this ROM hack required a few late nights poking junk values in the game ROM until I found and reverse engineered the way the game dealt with symmetry (I'm half face palming here, and half bragging as it iz a pretty good hack). Thus some of the following notes are graphic maps I made for the characters in the game in order to figure out the symmetry. Because I was working on a copy of the ROM with a header and duplicate code, the offset key for these Attribute and Name CHR drawings and the corresponding PRG code is -4010 bytes.

⁹ See Figure 4.

¹⁰ See Figure 5.

¹¹ See Figure 6.

¹² See Figure 7.

¹⁴ See Figure 8.

¹⁵ **Arcangel:** ... [INTERVIEW WITH SETH THOMPSON, 2005] ... "I Shot Andy Warhol" was one of those projects that pretty much thought of itself. I was in Chicago in 2001, and I met the gentleman who patented light gun technology, and he explained to me that the way a light gun works is that the TV throws the light into the gun and the gun doesnt throw the light into the TV. And so then I knew that I could change all the graphics and all the colors in (a) light gun game, and it wouldnt have any effect on the way it was played. And my favorite light gun game, of course, was "Hogans Alley", and so then at that point I knew I wanted to do a hack of "Hogans Alley". Then alls I needed was an idea, and of course, the idea that was most obvious, out of all the ones I could think of was "I Shot Andy Warhol". One, because of the pun on the title. Two, because he dealt with iconography, and pop star status, and that translates really well into Nintendo graphics, which are very small therefore all the

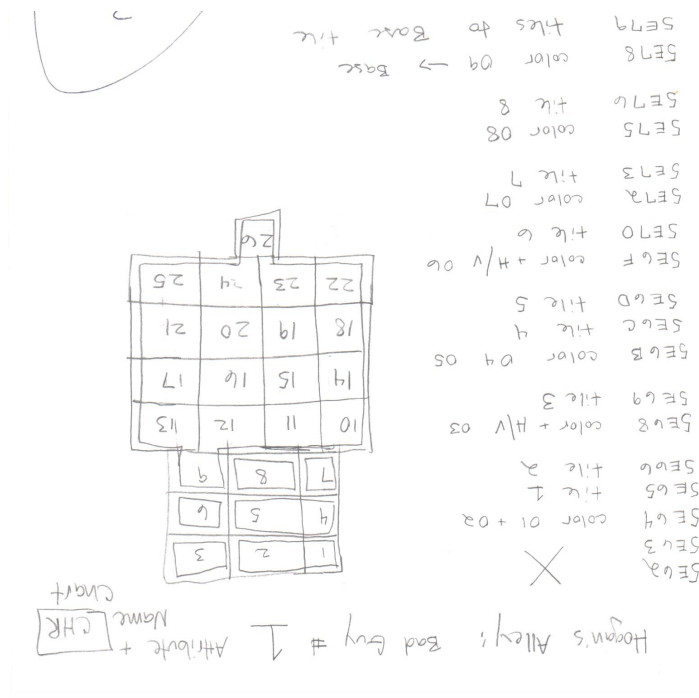


Figure 4: Bad Guy #1 Attribute and Name CHR Chart..

Hex	PRG	PRG (-4010)	Desc
01	5E64	1E54	Color
00	5E65	1E55	Tile 1 of Andy Warhol
01	5E66	1E56	Tile 2 of Andy Warhol
FD	5E67	1E57	???
01	5E68	1E58	Color and H/V symmetry bits
02	5E69	1E59	Tile 3 of Andy Warhol
FD	5E6A	1E5A	???
01	5E6B	1E5B	Color
03	5E6C	1E5C	Tile 4 of Andy Warhol
04	5E6D	1E5D	Tile 5 of Andy Warhol
FD	5E6E	1E5E	???
01	5E6F	1E5F	H/V symmetry bits

Figure 5: CHR and PRG markers for Bad Guy #1 Attribute and Name CHR Chart.

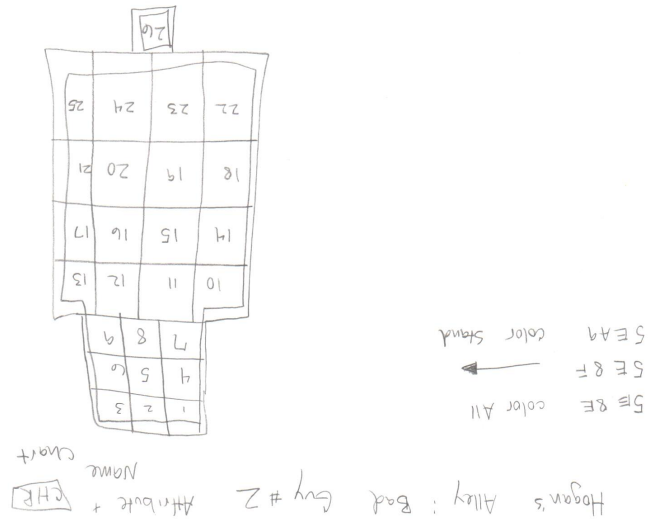


Figure 6: Bad Guy #2 Attribute and Name CHR Chart.

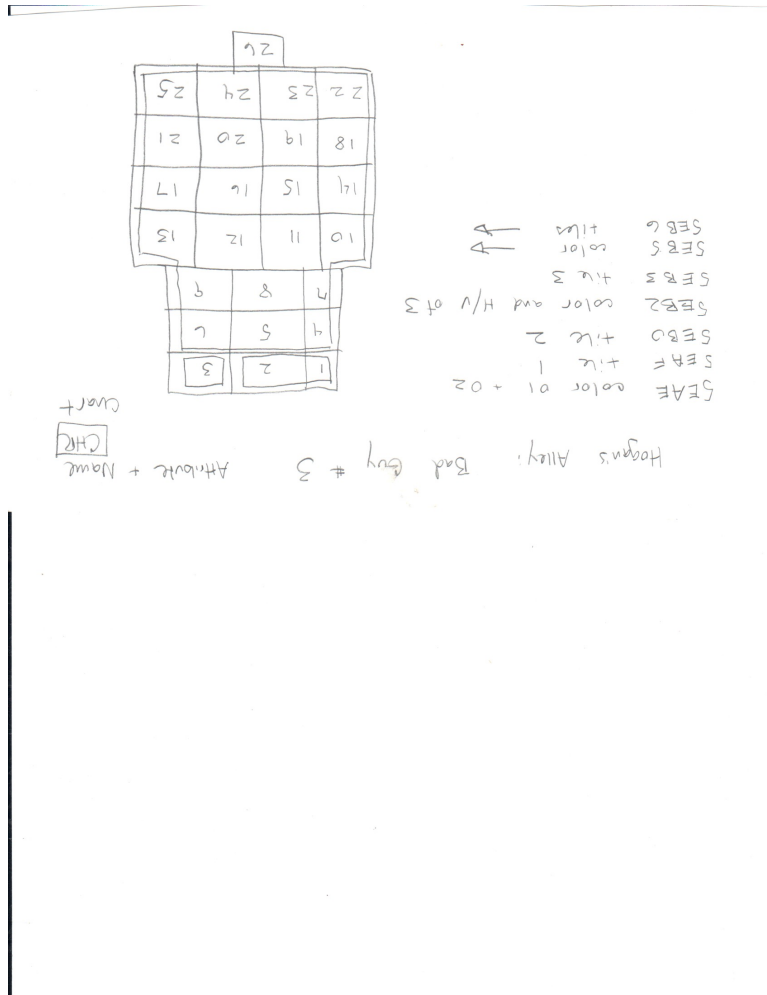


Figure 7: Bad Guy #3 Attribute and Name CHR Chart (with scan error).



Figure 8: Warhol CHR Tiles, 00, 01, 02, 03.



Figure 9: Unused character sketches.

characters need to be icons. And three, because, the third part of the game was actually a part where you needed to shoot soup cans. And so it seemed to be so obvious that if I didnt do it, Id regret it forever.

¹⁶ See Figure 9.

¹⁷ See Figure 10.



Figure 10: Character research.

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¹This text was copied from A Couple Thousand Short Film About Glenn Gould, 2007, a book in relation to a project of the same name by Cory Arcangel, based on a text by Paul Morley, edited by Steve Bode, and arranged by Dexter Sinitzer, with additional appendices.

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