Title

Scoring music for *Westworld* Then and Now: A cognitive perspective

Chapter Abstract

The Westworld sci-fi television/HBO series engages audiences in a fictional world that questions the borders between past and future, and between freedom and determinism. This chapter discusses how the music of Ramin Djawadi helps to contribute to the audience experience. Director Jonathan Nolan decision to assign a unique role to the piano, more specifically his decision to exploit the capacities of a *player* piano, allows Djawadi the opportunity to render music as representative of artificial intelligence (AI), controlling the characters at the level of the narrative (appearing as a diegetic character, through the piano player, but also structuring the plot through its non-diegetic insertions), as well as controlling the audience at a meta level. A contrast is made with the music of Fred Karlin for the forerunner 1973 motion picture Westworld of 1973

Figure Captions

Figure 1 Fred Karlin's score for *Westworld* (at approximately 38 minutes into the film) with actions and music instrumentation annotated for approximately one minute of action involving a jail setting in *Westworld*. [From the Fred Karlin Papers Box 102 courtesy of the American Heritage Center of the University of Wyoming.]

Figure 2 Fred Karlin's music "Dormant worlds" from *Westworld* played during shots of the three worlds of Delos presented in succession over 8 seconds at about 30 minutes into the film. The same brief melody, *sol-do* (B to E) repeats 4 times during each shot represented under each): (a) waveform showing the intensity (loudness) pattern for each instrument (b) spectrogram, showing the frequencies from 100 to 7500 Hz presented by the banjo for Western World, a flute sound for Roman World, and a cornet for Medieval World. The two-note musical motif is the same that begins the traditional bugle call in the military to wake up the soldiers at the start of their day. The *sol-do* on the figure corresponds to the first of the 12 repetitions depicted in (a) and (b). [*Westworld* directed and written by Michael Crichton, produced by Paul N. Lazarus III, production company Metro-Goldwyn-Mayer, 1973]

Figure 3 The musical score notated for piano by Dan Collins with images from the opening credits of Westworld Season 1 depicting themes of the series, emphasizing the application of artificial intelligence in the creation of both Westworld's Hosts and its music, and representing the human-like quality of pianist that can be readily replaced by a piano role and appropriately mechanized piano. [music composed by Ramin Djawadi, transcribed for piano by and used with kind permission of Dan Collins, dancolllinsandapiano.com; images from *Westworld* produced by Kathy Lingg, Athena Wickham, and Susan Ekins, directed and written by Jonathan Nolan and Lisa Joy, provided by Warner Bros. Entertainment, HBO 2017]

Figure 4 Congruence-Associationist Model with Working Narrative (CAM-WN) for understanding film-music communication. See text for explanation. [from Figure 7.8, p. 195, Cohen, Annabel J. "Film Music and the Unfolding Narrative." Essay. In *Language, Music, and the Brain: a Mysterious Relationship*, edited by Michael A. Arbib, 173–201. Vol. 10, *Strüngmann Forum Reports*, series ed. J. R. Lupp. Cambridge, MA: The MIT Press, 2013. Used with permission]

Biography

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Keywords

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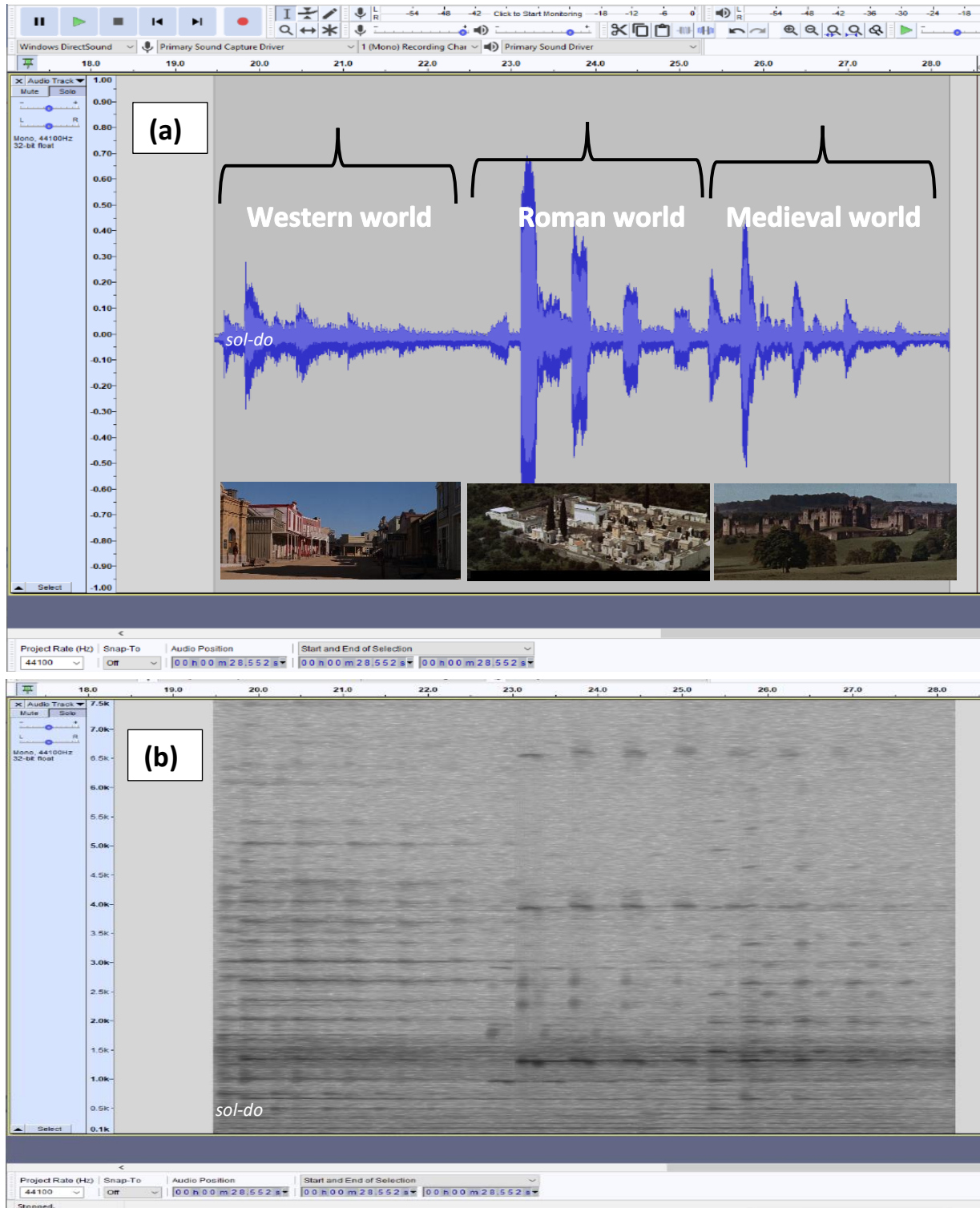C1A 3Z6
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Table 1. Music cues in the *Westworld* film showing dichotomy of styles for Western and SciFi aspects. Gray shading highlights use of electronic music for robot (SciFi).

Time	Scene	Description of music
3:00	Brief opening credits	One synthesized tone; then hovercraft noise and control-tower landing speech to/from pilot
3:30-5:05	End of hovercraft (1984) journey to Delos	Diegetic Muzak-jazz combo with piano and horns
9:00-9:57	*Having arrived in Westworld, Peter and John put on Western clothing, chose pistols	Upbeat western hoedown: banjo, guitar, bass, and fiddle
10:15-11:12	Stagecoach arrival carrying Peter and John to their hotel	Same as above
13:28-17:03	*On entering the town's saloon	Honky-tonk piano, first non-diegetic; at 14:20 camera pans to pianist. Ends when Peter confronts The Gunslinger, and everyone in the saloon clears out (including the piano player); Same instruments as above plus harmonica and honky-tonk piano
17:12-17:24	*Dual between Peter and robot, The Gunslinger	Sustained low then high electronic sound of Yamaha A5 keyboard, Arp 2600 synthesizer
18:21-19:05	Peter and John in their hotel room; Confirm guns will not shoot humans	Honky-tonk piano
19:15 – 20:00	Medieval world	Recorders, lute/mandolin (part of diegesis)
20:29 26:09	Brothel/saloon, ground floor, then upstairs	Honky-tonk piano waltz, banjo; solo piano for upstairs scene
26:10-29:26	*Street with corpses moved to truck; unload corpses on conveyer belt to laboratory; Reset and reconditioning of robots by technicians (Robot Repair)	"Electronic sounds and jagged dissonances" (p. 17); non-melodic, atonal; fast timbre changes (disrupt melodic grouping of consecutive tones; adds focus to timbre – ends with congruent mechanical high synthetic tone and onset of a light focusing on the eye of a prostrate female robot
32:26 32:30 32:33	Shot of Westworld Shot of Roman world Shot of Medieval world	Banjo Flute Trumpet
38:11-40:30	On street, John gives girl a covered "breakfast" tray for Peter in jail, Girl saunters across street, enters jail; sheriff inspects tray; girl passes tray to Peter; Peter reads note; puts on hat; girl leaves, crosses street; John mounts horse and leads	Jaunty banjo music; sparse orchestration, percussion, xylophone, fiddle, harmonica

	second horse to the jail; jail wall explodes freeing Peter	
40:48-41:06	John and Peter race out of town on horses	Western music
42:20-42:48	Medieval world – Queen's dressing room	Baroque music with recorders
43:40 - 44:04	Queen's indiscretion	Modal, with period instruments, recorders, harpsicord, and viol da gamba
47:01 - 47:30	Electric cart picks up rattlesnake in desert	Electronic tones, same as robot repair
48:57-49:37	Medieval feast	Modal, with period instruments, recorders, harpsicord, and viol da gamba-visible lutist
49:42-52:27	Brothel barfight where John and Peter are playing cards	Western orchestration
53:04-53:41	Medieval seduction of Daphne	Harpsicord
54:31	Medieval scene -morning	Trumpet 2-note interval leitmotiv
59:55 – 1:05	Gunslinger chases Peter on horse (cuts to central control and Medieval world in chaos)	Synthesized tones with jazz rhythmic pulse Bass, Honky-tonk piano strings sound via strumming downward
1:06-1:12	On foot in Medieval world	Ostinato pattern, repeating gunshot motif
1:13-1:14:35	*The Gunslinger	Honky-tonk piano string strumming downward, electronic manipulation of sounds. 10/4 (3 3 4) meter violates duple or triple meter conventions
1:18:19	Doused in acid, Gunslinger reappears for final chase	
1:19:20-1:19:57	Peter arrives in Medieval world banquet hall; Queen and Man in Black are motionless in thrones; torches light hall; Gunslinger arrives	One sustained synthesized tone
1:20:01-1:20:05	Peter as seen on a fiery red grid by The Gunslinger	Piercing high pitched electronic noise
1:21:58-1:22-41	Peter reaches for torch and throws it on The Gunslinger	Electronic loud glissandi; Gunslinger 3 3 4 meter re-commences along with the desert ride motif
1:24:59-1:25:08	Burned Gunslinger appears again and falls face down	Repeating synthesized chord, low synthesized bass sustained note
1:25:26-1:25-45	The Gunslinger turns over, now faceless, revealing the electronics	Same electronic repeating noise and low piano background mixed with sounds of burning electronic parts of the robot
1:25:56-1:28:38	Peter looks on the "dead" burning Gunslinger	Low electronic sustained chord followed by several more low sustained "gongs"

*Cues identified and described by Granade (2019, pp. 17 - 18)

Figure 2. Fred Karlin's music "Dormant worlds" played during shots of the three worlds of Delos presented in succession over 8 second at about 30 minutes into the film. The same brief melody, *sol-do* (B to E) repeats 4 times during each shot represented under each): (a) wave form showing the intensity (loudness) pattern for each instrument (b) spectrogram, showing the frequencies from 100 to 7500 Hz presented by the banjo for Western world, a flute sound for Roman world, and a cornet for medieval world. The two-note musical motif is the same that begins the traditional bugle call in the military to wake up the soldiers at the start of their day. The *sol-do* on the figure corresponds to the first of the 12 repetitions depicted in (a) and (b).

E Long Term Memory
Source of Expectations and Story Grammar

D

C Working Narrative

B Text Structure / Text Meaning — Speech Structure / Speech Meaning — Visual Structure / Visual Meaning — Music Structure / Music Meaning — Sound FX Structure / Sound FX Meaning — Kinesthetic Structure / Kinesthetic Meaning

A Text Surface — Speech Surface — Visual Surface — Music Surface — Sound FX Surface — Kinesthetic Surface