



## The IEZA Model

### Effect

When the diegetic side of IEZA is examined, two domains can be distinguished. The first domain, named *Effect*, contains sound objects that are perceived as being produced by or attributed to sources that exist within the game world. By communicating Effect to the player, the designer incorporates sounds belonging to instances and actions within the world of the game. Sounds of the Effect domain can be either on-screen (i.e. visible) or off-screen, meaning present in audio only, not accompanied by visuals (Bordwell & Thompson, 1985, p. 192). Common examples of this domain in current games are the sounds of the avatar e.g. footsteps, breathing, the dialogue of different characters, weapon sounds such as gunshots and swords, vehicle sounds, and colliding objects. These examples belong to games that feature a rich virtual world, but sounds belonging to the Effect domain are also seen in less realistic games, for example, games such as *Tetris* (GameBoy, 1989), *Rez* (2002) and *New Super Mario Bros* (2006). The latter features only a few samples of speech (that of the characters Mario and Luigi) while the rest of the audio consists of synthesised 'beeps,' 'beeps' and 'plings.' These synthetic sounds refer to the activity of the avatar Mario and events or sources within the diegetic part of the game and are therefore part of the Effect domain. The use of Effect in non-realistic or less-realistic games is not only limited to synthetic sounds, for instance, the sounds belonging to the colliding balls in *Zuma Deluxe* (2003) are more realistically designed, and sound more like the way a collision would sound in the real world.

Effect generally responds to the player's activity in the diegetic part of the game environment but also contains sounds that are triggered by the game within the diegetic part of the game which are not controlled or influenced by the player. Sounds belonging to this domain are often designed to react to the player in a way that refers to sounds in the real world, and are often dynamically processed using techniques such as real-time volume changes, panning, filtering and acoustics.<sup>31</sup> Exceptions to this general property can be found in cases where designers deliberately create a world that differs from our real world. For example, *Rez* (2002) is a good example of a game where the audio design is very different from our world, as the Effect sounds also form the musical rhythmic soundtrack of the game.

Source: Captivating Sound, Sander Huiberts. 2010

## Zone

The second domain of the diegetic part of the auditory game environment, *Zone*, consists of sound sources that clearly originate from the diegetic part of the game and which are linked to the environment in which the game is played. In many games, like *Grand Theft Auto: San Andreas* (2004) and *Half-Life 2* (2004), such environments form a virtual representation of the environments found in the real world. The zone is also distinguished by Stockburger (2003, p. 6) as 'a different spatial setting that contains a finite number of visual and sound objects in the game environment, whether it is present during a whole level in a given game, or part of a set of zones that constitute the level.' Zone corresponds with what game designers often refer to as ambient, environmental or background sound: it is used to provide a background to the game, giving information about the environment the game is situated in and surrounding the user with an ambience. Examples of the Zone domain are the weather sounds of wind and rain in *Worms 3D* (2003), city noise in the *GTA*-series (1997-2009) and the background sounds throughout the different levels of *Half-Life 2* (2004). Zone differs from the Effect domain because it is mostly perceived as one layer of sound instead of separate specific sound sources, even though it might consist of different sounds. For instance, a Zone that corresponds with a level that is located outside, might consist of wind sounds, environmental noise and occasional thunder. In general, these sound sources are not meant to involve a direct interaction with the player (it is not common to shoot at the wind) but they add a feel to the world of the game. Also, in many of today's games, the Effect domain is directly synchronised to player activity and game events in the diegetic part of the game environment, while Zone mostly does not respond directly to the player's actions.

The Zone domain generally corresponds with how environments sound in our real world. When Zone is compared to Effect, it is more often linked to off-screen sources, as one important property is that it is often designed to make the game world 'bigger' than only the screen. Furthermore, it is often used as 'set noise', the minimal feedback of the auditory game world, just to prevent the occurrence of complete silence when no game activity is present (Huiberts & van Tol, 2008).

Although Zones started out as being non-responsive to the player - static background layers<sup>32</sup> - possibly because of the limitations of resources,<sup>33</sup> Zones can also be reactive to the player. When a Zone is constructed of different layers of sound, the balance between these layers can, for example, depend on the location of the avatar or time-related factors. The response is currently often linked to player activity but can also include adaptivity according to the presupposed emotional state of the player, attributing more attention of the player to the meaning of the Zone (Huiberts, van Tol & Went, 2009, p. 3). A key factor for defining a Zone is the intended meaning for the player: communicating an ambient, background layer, which forms an auditory setting for the game world.

## Interface

The non-diegetic side of the IEZA model can also be divided into two domains. The first, *Interface*, consists of sound that belongs to sound sources outside of the fictional game world. The Interface domain is used to express activity in the non-diegetic part of the game environment, player activity as well as game events. In many games, the *Interface* domain contains sounds related to the Head-Up Display, such as the sounds that are used to communicate the status of parameters such as the level of health or the score. Sound from the Interface domain often represents 'more abstract' sources of the activity which are often designed using signs, for example the sounds in *Half-Life 2* (2004) which indicate that certain actions are not possible.<sup>34</sup>

At times, designers choose to match sound belonging to the Interface domain with the concept of the game. In such cases, references to the diegetic concept can be incorporated into the design of the non-diegetic sounds. To give an example, in *Tony Hawk Pro Skater 4* (2002), Interface sound instances of the in-game menu consist of the skidding, grinding and sliding sounds of skateboards. In *Zuma Deluxe* (2003), the sounds belonging to the menu items sound like hitting wood inside an old temple. In some cases, reverberation is used, for

instance because non-reverberating sounds might sound unprocessed. This reverberation often is primarily aesthetic and is not intended to make these sounds appear to originate from the virtual world.

### **Affect**

The second domain of the non-diegetic side of the model, *Affect*, consists of sound that is linked to the non-diegetic part of the game environment and specifically that part that expresses the non-diegetic setting of the game. Examples of Affect are the orchestral music in an adventure game and punk music in *Tony Hawk Pro Skater 4* (2002). Sounds of the Affect domain are not always constructed of music, as many games use horror sound effects or synthesised sounds, which do not originate from the game world.<sup>35</sup> While this domain often features music, music can also be present in the other domains, for instance when a character is playing a piano in the game world.<sup>36</sup> The piano and the game character produce music, which is part of the diegesis.

A large difference between Interface and Affect is that the Interface domain provides information of player activity and events triggered by the game in the non-diegetic side of the game environment, while the Affect domain communicates the setting of the non-diegetic side of the game environment and is used to add or enlarge social, cultural and emotional references. In *Tony Hawk Pro Skater 4* (2002) the punk music refers to a specific sub-culture and is meant to appeal to the target audience of this game.<sup>37</sup> In many first person shooter games, the 'horrific' sound layer communicates the feeling of threat and horror. The Affect domain often features affects of sub-cultures found in modern popular music,<sup>38</sup> but the references to other media are also found in many games, and will be discussed further in Chapter 4.

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