

Horror Studies

Volume 1 Number 1

© 2010 Intellect Ltd Article. English language. doi: 10.1386/host.1.1.89/1

LINDA MARIA KOLDAU

Aarhus University

Of Submarines and Sharks: Musical Settings of a Silent Menace

ABSTRACT

This essay analyses the substance of the submarine myth and its relation to the shark myth, as it has been propagated in film since Steven Spielberg's Jaws (1975). The essential elements of the submarine myth are defined, with stealth being at the center of the submarine existence. As with sharks in the natural ocean surrounding, submarine warfare exploits the basic human fear of the silent monster coming from the depth, unheard and unseen. In fictional film, this highly emotional essence of both the submarine and the shark myth is exploited especially in the design of the soundtrack. The essay exposes techniques of sound design and musical composition in various films that serve to impart the feeling of a silent, deadly menace.

KEYWORDS

film music
soundtrack
compositional
techniques
suspense
submarines
U-Boat
sharks
sound effects

On 23 May 1939, a US submarine sank off the New Hampshire coast in 243 feet of water. Thirty-three men sat trapped on the sea floor; their submarine was half-flooded. Due to a spectacular rescue action and due to the new McCann Rescue Chamber, the 33 men survived. Their damaged submarine was called *Squalus*.

On 10 April 1963, a nuclear submarine of the US Navy sank while on deep-dive trials south-east of Cape Cod, Massachusetts. The 129 men aboard were drowned and crushed to death at the same time at a depth of 8,400 feet. The submarine's name was *Thresher*.

1. In fact, it is almost certain that the shark's jaws were painted onto the bow of the BIBER only after the war. There is another mini-submarine of the same class in the Auto & Technik Museum, Speyer, bearing a similar 'Maling'. While it is unlikely that a 'shark' BIBER boat was ever in service during World War II, there is evidence that some of the one-man submersibles of the MOLCH class, which were tested during the war in 1944/1945, were decorated in this manner. I am grateful to Klaus Mattes for these details (cf. Mattes 1995). To complete the enumeration of links between submarines and sharks, it should be mentioned that one class of German mini-submarines developed in World War II was called *HAI* ('Shark'); however, it failed to meet the necessary qualities for a maritime war weapon and it never went into service. Furthermore, the German submarines and their crews were frequently likened to sharks, as is, among other instances, obvious in the title of Timothy Patrick Mulligan's excellent study (Mulligan 1999).
2. Cf. Hadley 2001.
3. A book on the submarine 'myth' in film and the media is in print (to be published by Steiner Verlag, Stuttgart, in spring 2010).
4. This is due to the fact that they are generally allocated to different genres: submarine films are mostly regarded as a sub-genre of the war film; shark films usually (unless documentaries) belong to the genre of the horror film. As will be shown, though, the genre question is more complex in the case of submarine films.

In 1956, the newly founded 'Bundesmarine' (Navy of the Federal Republic of Germany) retrieved a sunken World War II submarine (type XXIII) from the floor of the Kattegat and put it back into service as a training submarine on 15 August, 1957. On 14 September 1966, this submarine sank in a storm on the Doggerbank in the North Sea. Of the twenty crew members, only one survived. As a boat in service of the young Federal German navy, the boat had been christened *U-Hai*.

Three submarines, almost 140 dead men (and all died in times of peace), and the rest of the crew traumatized for the rest of their lives. Except for their ill fate, these submarines – of extremely different technical design – were united by one remarkable characteristic: they were all named after sharks. 'Hai' is the general German word for shark. 'Squalus' is the name of a genus within the family of the squalidae/dogfish sharks. The thresher sharks (alopiidae) are distinguished by their extraordinarily large caudal fin, with which they 'thresh' at schools of fish they prey upon. In fact, this conspicuous sea animal is also seen on the insignia of the lost submarine *Thresher*. It was certainly not the names of the submarines that caused their ill fate – there are numerous other boats, American, Russian, German, English, and of other nations, that have sunk in the depths of the world's oceans. However, the naming of submarines after sharks is not a coincidence – there is ample evidence that submarines have frequently been associated with the carnivorous animals from the depths. Germany's youngest submarine (212A class), U-34 includes a hammerhead shark in its insignia. A large number of German submarines in World War II had various images of sharks as their emblem on the conning tower; even the ill-fated *U-Hai* continued this tradition (Figure 1). And a number of them were specially decorated: the bow of the German 'secret weapon' would occasionally have a shark's jaws as special ornament, indicating the murderous stealth and danger of this weapon. This likening is especially obvious in the 'Maling' (drawing) on the BIBER mini-submarine still preserved in the Royal Navy Submarine Museum in Gosport: with its straight deck and its conspicuous jaws, the submarine strikingly resembles the famous great white in the movie *Jaws* – or rather, the infamous mechanical model that caused so many problems to the film crew (Figure 2).¹

The reader may by now – and with good reason – wonder what submarines and sharks have to do in a horror periodical. In the past 150 years, submarines have assumed a considerable significance in the public awareness. Due to the dissemination of their aura as secret and deadly weapon, they have been turned into a myth (the term here is used in the modern sense established by Roland Barthes): a master story strongly linked in the first instance to propaganda, later to the media's need to arouse interest for commercial or ideological reasons.² It is the medium of film that has contributed decisively to the proliferation of the 'submarine myth' – most notably, the famous *Das Boot* (Wolfgang Petersen, 1981), but also the Hollywood productions of the 1950s and the 1980s onwards.³ The quoted evidence from the history of submarines shows that the myth of the submarines (or U-boats, as the German World War I and II submarines were called) is intricately linked to the myth of the shark: a monster that comes from the depth, unheard and unseen, strikes and retreats with the same stealth and speed. Again, the fear of sharks, a variation of the deeper fear of the uncanny (cf. Sigmund Freud's famous essay of 1919), has been widely spread through one film: the 1975 blockbuster *Jaws* by Steven Spielberg. Generally, submarine and shark films are not associated with each other.⁴ It is less obvious, though, that these entangled myths have got very much to do with sound – and equally with its opposite, silence. Sound, in turn, leads to music: the music of the submarines, the music of the sharks, as



Figure 1: Emblem of U-Hai (sunk in 1966), preserved in the museum of the Marine-Ehrenmal Laboe (photo: Linda Maria Koldau).

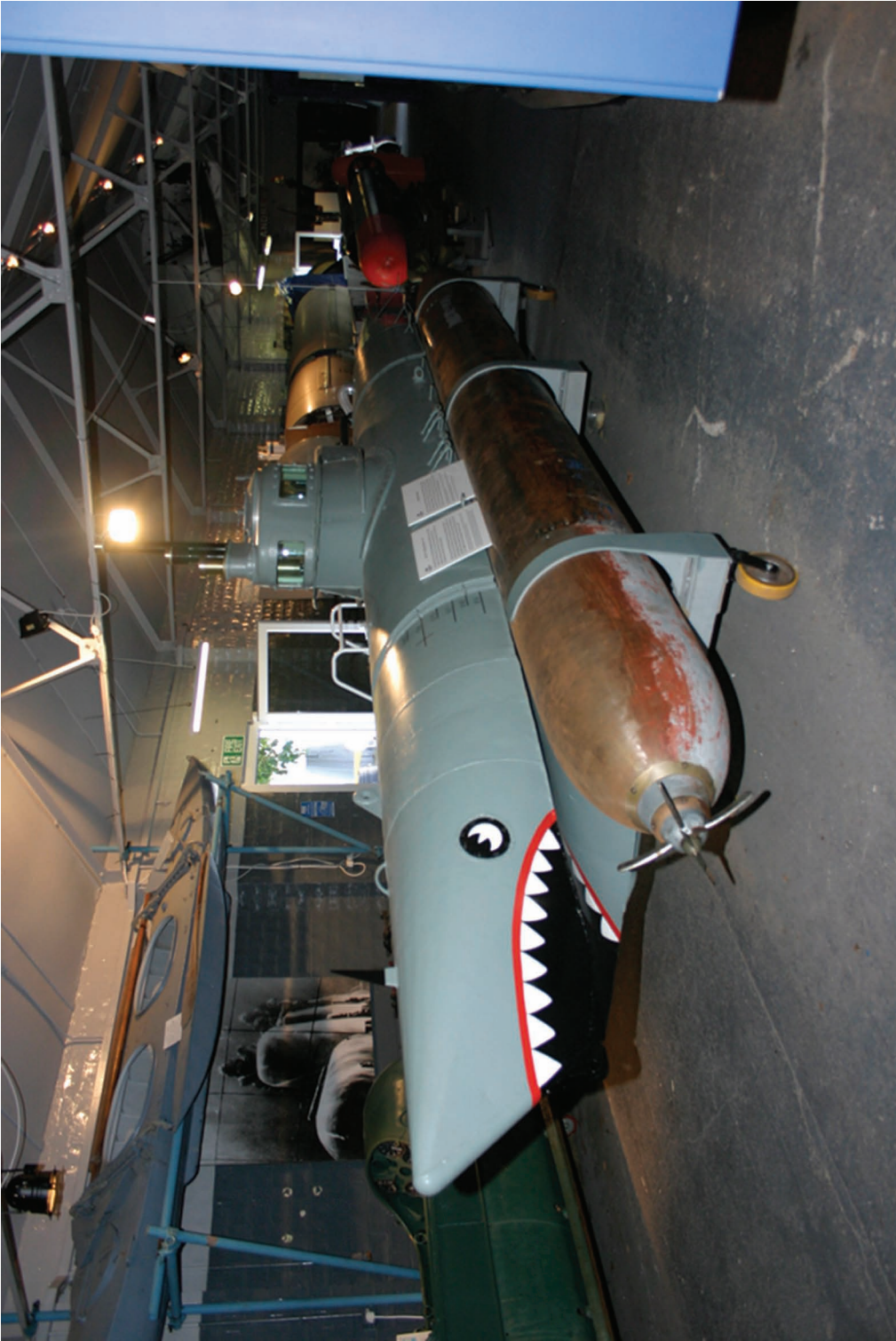


Figure 2: One-man submarine BIBER, exhibited in the Royal Navy Submarine Museum, Gosport (UK) (photo: Klaus Mattes, reprinted with his kind permission).

represented in film, is used to arouse emotions in the audience which bring home the shark or submarine myth to them like an acoustic imprint.

This article aims to introduce a filmic genre which lives on a historical and literary myth – intricately linked to a more archaic myth of mankind, the fear of the unknown, a silent menace – and to show how sound and music are used in films belonging to this genre to affect the audience by these very ‘myths’ and their long-standing connotations of that silent menace, the unseen peril from the depths.

5. The genre question is discussed in detail in Koldau 2010a.

THE SUBMARINE MYTH AND THE SOUNDSCAPE OF SUBMARINE FILMS

A recent publication on the genesis of Petersen’s *Das Boot* includes a filmography of 150 submarine films (Kamps 2006). Although submarine films are generally considered to be a sub-genre of the war film, the broad spectrum in this filmography clearly shows that there is more to this specific group of films.⁵ While the majority of films indeed treat episodes from World War II, World War I, and from the Cold War, there are quite a number of films that can by no means be subsumed under the genre of war film. Thus, there are spy films (*Lieutenant Rose and the Stolen Submarine*, [Percy Stow 1910]; *Lieutenant Pimple and the Stolen Submarine* [Fred Evans, Joe Evans, 1914]; *The Spy in Black* [Michael Powell, 1939]; *Ice Station Zebra* [John Sturges, 1968]; *The Spy Who Loved Me* [Lewis Gilbert, 1977]), action films (*Crash Dive I and II* [Andrew Stevens 1997; Fred Olen Ray, 1999]); *Yuryeoung Phantom: The Submarine* [Byung-chun Min, 1999]; *Submerged* [Anthony Hickox, 2005]), there are rescue dramas (*Gray Lady Down* [David Greene, 1978]), comedies (*Operation Petticoat*, [Blake Edwards, 1959]; *Il Sommergebile Più Pazzo del Mondo/The Craziest Submarine in the World* [Mariano Laurenti, 1982]; *Going Under* [Mark W. Travis, 1990/91]; *Down Periscope* [David S. Ward, 1996]), fantasy films (*20,000 Leagues Under the Sea* [Richard Fleischer, 1954]; *Kaitei Gunkan* [Ishirô Honda, 1963]; *The Fantastic Voyage* [Richard Fleischer, 1966]), human interest dramas (*Hellcats of the Navy* [Nathan Juran, 1957]; *K-19 – The Widowmaker* [Kathryn Bigelow, 2002]), and finally, real thrillers including haunting ghosts (*Below* [David Twohy, 2002]). Of course, the genres of the films named cannot be neatly separated – quite often they overlap, adding the thrill of a haunted submarine to the suspense of the war situation, the dire straits of the Cold War to the claustrophobic submarine surroundings, and of course, of love stories in manifold variations to the tales of male combat and heroism. There is quite a number of semantic traits, though, that is common to them, and these traits are typical of a submarine setting (cf. the detailed discussion in Koldau 2010a). The structural genre definition, in turn, can be reduced to the basic contrast between a friendly, safe “inside” and an inimical “outside” (the enemy, water pressure etc.), thus leading to the fundamental structural pattern of fictional film, the tension between good and bad.

If the submarine both as a palpable object and as a symbol is the common denominator of both semantic and structural traits, it must be asked what there is about the submarine to make it such an effective object of film (and, in due course, of film music and sound). The most important elements that make up the submarine myth, extensively used in literature and film, can be summarized under the following headings:

- The fascination of the third dimension: human endeavour to master the depths of the oceans and to survive in inimical surroundings

6. This capability became shockingly clear to the Americans with the 'Operation Paukenschlag' (Operation Drum-Beat) in January 1942, when German submarines approached the American coast unhindered and wrought havoc among the unprotected commercial ships.
7. 'Der Bericht über den U-Boot-Krieg der Jahre 1943 bis 1945 ist ein Bericht aus dem Reich der Toten. Sie waren jung: 22, 21 Jahre die Kommandanten, die 'Alten', 20, 19 die Wachoffiziere. Ihre Lebenserwartung betrug wenige Monate, statistisch waren sie binnen Jahresfrist alle tot. Wenn die Boote La Rochelle oder Brest, La Pallice oder Bordeaux verließen, verdichteten sich Krieg und Geschichte zum raum- und zeitlosen Kampf ums Überleben, der fast immer verlorenging. Nicht mehr das 'Großdeutsche Reich' kämpfte gegen die 'Seemächte', sondern vierzig bis fünfzig Jugendliche gegen das unerschöpfliche Potential des halben Erdballs.' 'The account of the submarine war 1939–1945 is an account from the realm of the dead. They were young: the commanders, the 'grizzled', 22 or 21 years, the officers 20, 19 years. Their life expectancy was a few months, they were virtually all dead within a year. When the boats left La Rochelle or Brest, La Pallice or Bordeaux, war and history were condensed to a timeless struggle for survival, which was almost always lost. It was not the 'Great German Reich' that fought against the 'naval powers', but forty to fifty youths against the inexhaustible potential of half of the globe' (Saleski 1985: 29).
- The aura of the secret weapon: its capability to approach the enemy unnoticed;⁶ the myth constructed after World War I (and also applied to World War II) that the German submarines would almost have decided the war in favour of Germany
 - The fascination of technology: technical innovation lifting man above his natural possibilities; man as a perfectly functioning implement in a high-tech surrounding
 - Special qualities of the submariners' service: comradeship among men, mutual trust, 'Schicksalsgemeinschaft' (all live, fight, and die together; one for all and all for one)
 - The heroic combat with all kinds of enemies in extremely confined surroundings: fire, water, time running out, nuclear radiation, outward enemies, mutiny/treason
 - The youth of the submariners: David (small, vulnerable, isolated) against Goliath (several allied armies, larger forces, better possibilities of communication)⁷
 - The figure of the Commander: hero and father, head and brain of the entire boat and the crew

Most of these characteristics can be used to build up a specific suspense, thus supporting the covert or open fear of danger that is so central to submarine films: the constant menace of the underwater setting (water pressure, leaks, and in fantasy films also sea monsters attacking submarines); the menace of underwater or surface enemies in a war situation; the potential failure of the technical equipment (which is the central premise for survival in a submarine); the immediate dangers deriving from such a failure (fire, water, radiation); in some settings also treason among the crew members or personal failure of the leading officers.

Of course, the above enumeration cannot be seen as fixed and complete; there are many more motives recurring again and again in submarine literature and film. They are generally more open, though. Thus, the above-mentioned characteristics of the submarine setting are supplemented by other stock motives in naval literature and film: the conflict between the Commander and his Executive Officer;⁸ the threat of global nuclear destruction; the elitist standing of the submariners in society (this was the case in Germany during World War II, owing to the myth about the U-boat heroes of World War I that had systematically been built up and spread in German publicity and film); the relationship between man and sea; the sailors' isolation and their longing for home; the disturbing presence of women on board (a motif used for romantic or comedy effects).⁹

All these motifs add up to the perfect fabric of filmic drama: a company of young and brave men is put into a borderline situation, their eagerness for combat, their comradeship, their heroism are put to the test and seen in contrast to mortal fear, a nerve-racking chase, and cruel death. A considerable number of submarine films even relinquish the subject of love – without losing any of their drama and tension.¹⁰ And the men are isolated, not only removed from their families and loved ones but quite often also from their headquarters: contact broken by way of damaged antennae, malfunction of the radio transmission, breakdown of the sonar system, and other 'coincidences' are a leitmotif in submarine films and serve to focus on the extreme pressure of responsibility weighing down on the young men's shoulders.¹¹

There is one further leitmotif common to all submarine films and it is this leitmotif that poses a problem in the context of the soundscape of submarines: stealth. The *Howaldtwerke Deutsche Werft* – Germany's central shipyard for

building submarines – advertises its latest submersible product, the 214-class submarine, as ‘an air-independent but non-nuclear submarine with exceptional technical and operational capabilities, featuring extraordinarily developed stealth characteristics and an impressive weapon and sensor payload’.¹² Stealth is the primary weapon of a submarine: the element of surprise that turns it into a deadly ‘shark’ or ‘wolf’. This primary feature, though, poses a problem to film directors: how are sound designers to tackle a subject that emits – due to the combined efforts of high-tech development and the navy – less and less noise? The directors of the very first submarine films were privileged in this respect: their films were silent – the only sound accompanying the notorious submersibles was the music of the theatre pianists. Unfortunately, we do not know how *Lieutenant Rose and the Stolen Submarine* (1910) and its 1914 parody *Lieutenant Pimple and the Stolen Submarine* were accompanied – but certainly not by the imitation of propulsion sounds or the famous ‘ping’.

In the course of time, the submarine films became more realistic, at least in their depiction of the submarines, while layers of mystification and propaganda were added to the filmic representation of reality. Thus, the soundscape integrates the flapping of waves against the boat’s hull, the sound effects of detection, the propulsion and detonation of torpedoes, and the incisive ringing of alarms. More intriguing, though, are the sounds of the strange underwater world: they offer the perfect material to be exploited on the soundtrack of a submarine film. The speed of sound in water is 4.4 times greater than in air, and the density ratio of sound is about 820.¹³ Thus, any sound made on the surface or under water is magnified and transported at a far greater speed than sound in air. Due to the varying density, temperature and salinity of ocean water, the transportation and reflection of sound varies strongly underwater; the thermocline – a thin layer in the ocean that separates mixed layers of water above from calm deep water below and that functions as a reflector of sound – as well as numerous other special effects in underwater acoustics make matters even more complicated. These physical preconditions have been used and refined in submarine warfare throughout the twentieth century; among others, the famous ‘ping’ of the sonar depends on them. For a film setting, these circumstances are ideal to create a soundscape that transports something of the strangeness and distortion of sound under water – and thus, sound is one of the strongest elements to enhance the effect of estrangement and hidden danger in submarine films (Koldau 2010b). The fact that underwater sounds in films are often conceived diegetically, but at the same time transgress the borders of the familiar by their (natural) distortion, makes them so unsettling: they blur the line between the diegetic and the non-diegetic, the known world and something beyond (an effect which is often used in horror films).¹⁴

Another element of the soundtrack is also characteristic of the special world of the submarines, albeit less conspicuous: language is turned into technical and martial litany as the commands for submerging, surfacing, and firing are reiterated according to the chain of command. Lothar-Günther Buchheim, the late author of the bestseller *Das Boot*, stresses the musical character of these reiterations several times in his novel, and in his original film script for *Das Boot* he puts special emphasis on the sound effect of these linguistic litanies (Buchheim 1981).¹⁵ Thus, the language in a submarine setting assumes a musical character – or at least that of a distinct and recognizable sound effect. Nobody who has watched *Das Boot* several times will fail to notice the neat acoustic and visual imitation of some of its central scenes in the 2000 production *U-571* (director Jonathan Mostow). And American audiences will not forget

8. The classic example of this is, of course, *The Caine Mutiny* (1954) with the famous conflict between the paranoid Commander (Humphrey Bogart) and his conscientious Executive Officer (Van Johnson). Dissent between the two senior officers of the boat is a recurrent motive in submarine films, most notably exploited in the fictitious drama *Crimson Tide* (1995), focusing on the disagreement over the launching of a nuclear missile against Russian rebels.
9. A separate study on gender construction in submarine films is under way.
10. In fact, Günter Rohrbach, the producer of *Das Boot*, was warned beforehand that a film ‘without women and without love’ was condemned to failure, but the success of the film proved the contrary. Although the director Wolfgang Petersen gave the love story between Fähnrich Ullmann and the French girl Françoise (only hinted at in the novel by Lothar-Günther Buchheim) more room in the film, including extra scenes, this episode is of no importance to the actual plot. Leaving it out would not have damaged the film at all.
11. This isolation is not necessarily due to defects: nuclear submarines patrolling in the Cold War, and after, often had to maintain radio silence in order to avoid detection. Accordingly, many films play on the motif of extremely dangerous situations that eventually force the Commander of a submarine to countermand this order and enter into contact with his headquarters (e.g. *Hostile Waters* [David Drury, 1986]; *The Hunt for Red October* [John McTiernan, 1989]).

12. http://www.tk-marinesystems.de/index_en.php?level=3&CatID=3.431.474&inhalt_id=426&detail=12. Accessed 17 April 2009.
13. Detailed information is offered by Urlick 1983; cf. also Brown and Colling 1995.
14. The stock setting would be the gradual change from some natural sound (e.g. the creaking of a door) into something definitely supernatural. For the broad gamut of possibilities offered and used by sound design, cf. Chion 2002; Chion 1994; Langkjær 1997; Langkjær 2000; Flückiger 2001.
15. This film script was not used by the director Wolfgang Petersen, who eventually wrote the script for *Das Boot* himself.
16. For an extensive discussion of the expressive use of silence (and language) in film cf. Grover-Friedlander 2005.
17. Interestingly, Wolfgang Petersen did not make use of the sound effect Buchheim described as the most frightening in his novel. In the film, only the conspicuous ping of the destroyer's sonar is heard in the film, but not the ASDIC, which is described like the sound 'of a handful of gravel' by Buchheim and other witnesses of the submarine war.

Clark Gable's obsessive 'Dive! Dive!' in *Run Silent, Run Deep* (Robert Wise, 1958), the American standard command for a submarine's diving.

While the submarines do everything to fulfil their number one task of stealth, it is these sounds – the sound effects of the technical surrounding and of the sea (itself a strong amplifier of sound) as well as the phonetic fingerprint of the 'submarine language' – that make up the acoustic world of the 'Silent Service' (as the submarine section in the US Navy is called). And it is analysis of the acoustic surroundings that becomes the essential perceptive sense of the blind giants in the depths: it is the sounds that are the 'eyes' of the submarines. In the 1930s there existed gramophone records with characteristic underwater sounds, including all kinds of warships, by which the sonar men ('Horcher'/listeners) were trained for their German U-boat service (Möller and Brack 2002). Today, a ship can be identified by the sound of its propeller – and not just the class of ship, but the very ship itself. Sound is like a fingerprint, and it is unique to every vessel.

Indeed, sound is a central, maybe the strongest and most flexible characteristic of the submarine myth. Buchheim's meticulous description of life on a German VIIIc-type submarine offers a cosmos of sound: he distinguishes more than 40 sorts of sound that can be categorized into sounds of propulsion, sounds of board life, sounds of storm, sounds of attack and submarine chase – and all those categories evince a broad spectrum of sub-categories. Last, but by no means least there is the 'sound of silence' – the silence of the stealthy hunt, the silence of deadly fear between the destroyer's 'pings', finally the silence of death far below the surface of the sea. It is obvious that this silence is an emotionally highly charged dramatic element in any kind of submarine film.¹⁶

Directors of submarine films have increasingly taken heed of this wealth of sound and silence. Due to digital sound mastering, the soundtracks of more recent films have become extremely complex, combining all sorts of sounds and exploiting their emotional potential. Again it is *Das Boot* that set the submarine standard with its soundscape: the famous 'ping' – a sound effect composer Klaus Doldinger found so fascinating that he explicitly integrated it into his musical score – has become the signum of the submarine film ever since. However, this effect is by no means as original as one might think. Countless earlier films display the ominous 'ping' and also other sounds that are found again in *Das Boot*.¹⁷ In later films, though, acoustic and visual levels merge: on today's sonar systems, sounds are registered electronically, processed digitally and thus transferred to the visual level on the sonar display, accompanied by nerve-racking acoustic blips if an enemy is detected. Many films that feature the nuclear submarines of the Cold War and post-Cold War period make dramatic use of this special acoustic-visual phenomenon – turning the sounds and technicalities of the submarine into an intentional interaction of the filmic levels and our senses.

In contrast to sound and language, the musical element of the soundtrack cannot be identified as a specifically submarine type of composition. Aficionados of submarine films often ask if a specific 'music of the submarines' can be identified. This is not the case, though: music does not have a special 'submarine' code. Instead, the non-diegetic musical score has to interact acoustically with the 'realism' of sound and language, and it has to react to the exigencies of the plot, of its historical setting, of the dominant lines of action and of the emotions exposed in the visuals of the film. Thus, submarine films offer a broad gamut of musical scores, ranging from the stock-in-trade military fanfares and 'Schlager' of German films of the 1930s and 1940s via the blaring brass and luscious violins of Hollywood productions in the 1950s

to the extreme diversity of musical scores from the late 1970s onwards, when synthesizers and electronic sound started to be integrated into film scores. If there is no specific 'submarine music', the question has to be asked in a different way: How does music contribute to the central elements of the submarine myth, how does it bring home to the audience the decisive awareness of a silent menace, of an unseen peril?

There are, of course, countless ways in music – especially if classical, electronic, and digital ways of composition are united – to evoke and intensify the suspense based on the fear of a silent menace. It would not make much sense to enumerate the solutions found in the submarine films accessible to us today – especially, since the question of compositional techniques to create a certain atmosphere overlaps with the large-scale development of film music in the twentieth century, which cannot be ignored when examining the soundtrack of submarine films. In order to avoid too complex a constellation, I shall concentrate on films produced after 1980 to outline a few compositional techniques and to illustrate how the strangeness of the underwater world in combination with the silent menace of an unseen enemy is transformed into music.

The most famous of all submarine music is probably the soundtrack of *Das Boot* by Klaus Doldinger, which received the highest awards of the German music industry in the 1980s and 1990s.¹⁸ As mentioned above, Klaus Doldinger intentionally integrated the fascinating sound of the 'ping' into his musical score, thus linking it inseparably to the soundscape of the submarines. It is this ping that creates a highly emotional effect on the listener: even those who know very little about submarine warfare will know that the unexpected sound of a ping means the worst has happened – the boat has been detected. In fact, an 88 year old submariner, who was in service on the first German submarines after World War I from 1935 onwards, became all excited when I played the soundtrack to him and he heard the 'ping': 'Yes, that's what it sounded like! That's exactly as I heard it off the coast of Helgoland!'¹⁹ The emotional impact of the 'ping' is used extensively in *Das Boot*, when the submarine is hunted by destroyers – the reiteration of this sound effect turns into a nerve-racking torture, for the crew knows that the water bombs will come in due course.

It is this emotional impact of a sound effect, subsequently combined with the musical main theme of *Das Boot*, which is used at the very opening of the film. At first sight, the title sequence appears to be quite conventional, if not technically simple compared to films produced just a few years later. The audience is confronted with a black screen on which, in simple white letters, the situation is soberly sketched: U-boat war in the Atlantic in 1941. However, this frugal visual opening is imbued with an atmosphere of stealthy menace by acoustic means. The black screens with the white writing are acoustically underscored by the sound of underwater propulsion and an occasional ping. As the sequence culminates in Buchheim's telling – albeit slightly incorrect – statement, 'Of the 40,000 German U-boat sailors serving in World War II 30,000 never returned', the ominous sounds reveal their deadly message. It is at this point that the music begins: the propulsion sounds are overlaid by high violin tension, the black turns into a dark, yet transparent, somewhat menacing green: we are in the depths of the ocean. From these depths, low strings begin to unwind and rise. They seem to herald a dark shape that can be faintly discerned far away in the middle of the screen: a long shadow, dark and threatening, drawing nearer and nearer. The strings seem to entangle and stifle the audience as the shadow turns into a black giant from the depth and overrides

18. Deutscher Schallplattenpreis 1982; Gold and Platin in 1992; after a digital reworking of the soundtrack, Gold again in 1996. There are several versions of *Das Boot* available on DVD today. The original movie version of 1981 was re-edited and published as 'The Director's Cut' in 1997; this version features a highly improved soundtrack with a new synchronization, several sound channels and subwoofer. Equally, the TV version of 1985 (almost five hours in length) was improved both in visuals and sound for the DVD edition of 2004.
19. Here, the fallacies of memory, that are a typical impediment in working with oral history, have of course to be taken into account. Yet even if the old submariner's recollection of the actual sound (as he had experienced it in the 1930s) mingled with his experience of having seen the film *Das Boot*, his excitement engendered by hearing the sound of the ping again and in quite another context gives evidence of the strong emotional impact of this sound, whether artificially produced or real, on a person familiar with the submarine world.

the spectator – cold, emotionless, merciless. The music explodes, and the darkness of the uncanny monster turns into the famous letters perforated by bullets: DAS BOOT. By now, the audience knows that it is to enter a horrifying, merciless world: the underwater world of submarine warfare.

Doldinger's music seems to rise naturally from the submarine soundscape: the tension of the strings is added to the noise of the propulsion, the dark, winding main theme becomes the musical counterpart to the thrilling impulse of the ping. This technique of merging submarine sounds with music is continued throughout the soundtrack of *Das Boot* – and thus, the music of this film has become to millions of people *the* music of a submarine scenario, an acoustic emblem of the U-boat warfare in World War II.

A similar technique, less conspicuous, but of astounding emotional effect, is used in *Hostile Waters* (David Drury, music by David Ferguson, 1997), a film that dramatizes a submarine disaster that happened in October 1986 on the Atlantic Ocean. The film conflates two disasters that happened independently on two Soviet nuclear submarines within a few days: while a fire broke out on a Soviet submarine with nuclear missiles near Bermuda, another nuclear submarine with missiles on board collided with the U.S.S. *Augusta*, an American nuclear submarine on patrol in the Atlantic. Like the later *K-19 – The Widowmaker* (2002), *Hostile Waters* focuses on the Russian crew and their heroic fight against the desperate situation on board, depicting the enemy's soldiers as young, playful, and good-humoured, but brave and ready for self-sacrifice. Although there are also a few short scenes on the U.S.S. *Augusta*, the film concentrates entirely on the Soviet submarine and its crew. Again, it is the music and the soundscape of the film that make clear from the very outset that this boat and its men are doomed: almost the entire soundtrack is underpinned by an ominous throbbing sound, sometimes isolated like a 'realistic' sound of submarine technology, sometimes integrated into the musical fabric of the film. At first sight, the film starts like *Das Boot*: a black screen with a text in white letters, informing us that the incident shown in the film took place right before the summit of Ronald Reagan and Mikhail Gorbachev in Reykjavik on 11 October, 1986, and that the submarine collision off the East Coast imperiled not only this political summit, but also the lives of millions of people. The affirmation that the following movie is a 'reconstruction' of the incident at sea, based on interviews and the testimonies of people involved, and that it shows an event which has been denied by the US Navy up to this day, is a stock-in-trade feature of submarine films which, if set in a historical context, aim at the display of utmost 'authenticity'. The claim to bring to light some decisive and dangerous military event hitherto hidden from our knowledge is, by the way, another facet of the submarine myth. The screen and the soundtrack of the opening scenes of *Hostile Waters* almost seem to copy the opening of *Das Boot*. The first screen informs us that the cat-and-mouse game between American and Soviet nuclear submarines was considered a serious and growing threat to the political balance of the 1980s. We then hear an indefinite, low growling sound, reminding us of the propulsion sounds of a submarine. Reverberating, unsettling sound effects give the impression that we are under water, though there is not the characteristic 'ping' to be heard. However, the growling sound quickly develops into musical fabric, and it becomes clear that it is low brass instruments, mixed with synthesizer sounds, we hear. From this fabric, the opening motif of the main theme in d-minor arises (Figure 3).

The motif, exposed by low strings in a ponderous, serious manner and then taken up by a solo trumpet, heralds a tragic story. Taken by itself, the



Figure 3: Opening motif to the main theme of the music to *Hostile Waters*.

weighty minor theme, composed by David Ferguson in the late romantic tradition, might stand for any tragic subject matter. But there is more to it than a minor context and the ponderous melody – the music is unsettlingly enlivened by throbbing pulsations, which seem to exist independently from the theme, disturbing the flowing character of the melodic strains. The soundtrack is thus filled by an inner unrest and it is this unrest that will prevail throughout the entire film. While the film's opening proceeds with the grand, melancholy theme and its unsettling throbbing underground, the visuals propel us into quite another place: we watch a digital rendering of the ocean floor, as it might be visualized on a high-tech submarine of the Cold War, and from the digital underwater canyons, a nuclear submarine soundlessly emerges, again rendered in digital reconstruction. As we are visually 'taken' into the submarine and gradually 'shown' the control room, the silo with the ballistic missiles, and the reactor compartment, an isolated, distinctive 'ping' is heard in each section, with the musical flow going on undisturbed. The premise is set: it is the silo and the reactor where the deadly defects will happen, and it is the control room where the most difficult decisions will have to be taken by the commander (including a short-term dive with open hatches to extinguish the uncontrollable fire in the silo and the sacrifice of a member of the crew to shut the reactor down). By this time, the throb has turned into a regular, dotted double beat integrated into the musical fabric, though nevertheless continuing to enliven it.

After an introduction that bodes no good, the film itself opens with an innocent scene: young Soviet sailors in the mess room making fun of the cook (traditionally a comical figure in submarine and navy films). Only gradually does the spectator realize that there is a very quiet, but constant double throb to the leisurely jesting of the young men. The throbbing becomes more conspicuous when the scene turns to the command centre, where ballistic missiles are being programmed, with various metropolises on the American East Coast as targets. There is no music in these opening scenes, and when the throbbing becomes more clearly heard, it seems at first to be a realistic by-product of the submarine's stealthy course. This impression, however, is incorrect. Although not as quiet as the later *Victor*, *Akula*, and *Sierra* classes, submarines of the *Yankee* and *Delta* class (to which the ill-fated Soviet submarines of October 1986 belonged) would never emit such a distinctive throbbing sound. This sound is clearly non-diegetic – and therefore atmospheric. As we see the familiar map of the United States, the screen suddenly turns dark, strings set in – and we see the ominous shapes of the nuclear missiles with the red Soviet star. The throb appears to have disappeared, but this is not the case: instead, it has become integrated into the music, a stealthy counterpoint to the slow, hesitating sounds of the violins, which themselves utter throbbing, or rather sighing, melodic fragments. Again we see the map, and we hear the officer's voice, punctuated by varying scenes in the boat: 'Washington – programmed' – 'Philadelphia – programmed' – 'New York – programmed'. The scenario is one of impending danger – deadly danger. The music becomes louder and louder with the growing menace, brass instruments entering. And

20. In fact, this melody seems to be closely modelled on Brünhilde's emphatic greeting to Sieglinde, '... den hehrsten Helden der Welt bergst du, o Weib, im schirmenden Schoß!' at the end of Act 3, Scene 1 in Richard Wagner's *The Valkyrie*. It reappears several times until Wotan's great farewell to Brünhilde in the final scene of *The Valkyrie*: 'Wer meines Speeres Spitze fürchtet, durchschreite das Feuer nie!'
21. This hymn was written and set to music in the nineteenth century on the occasion of a sea passage from Britain to America. It has become the official hymn of the British and the American Navies, with many extra verses for the individual units, among them also a verse for submariners (Bless those who serve beneath the deep, / Through lonely hours their vigil keep. / May peace their mission ever be, / Protect each one we ask of Thee. / Bless those at home who wait and pray, / For their return by night and day). Director James Cameron also used it as diegetic music for a protestant service on the *Titanic* in his blockbuster *Titanic* (1997).

again we hear the throb, like the famous 'knocking of doom' that has become the popular, or rather populist interpretation of the opening 'da-da-da-daaa' of Beethoven's Fifth. Here, the throbbing is not dramatic but ubiquitous and therefore relentless. There is an incisive irony when the music sets in, linking the programming of the missiles (experienced by a Western audience as a deadly menace) with the sight of the missiles themselves: in a few minutes, the red star, painted as triumphant token of the Soviet Union on the missiles, will turn into the ill-starred fate of the Soviet crew, since it is the leak in the fuel pipe of this missile, caused by the collision with the U.S.S. *Aurora* (as the U.S.S. *Augusta* was renamed in the film), that will eventually lead to the Soviet submarine's doom.

The throbbing continues throughout the film; there are only few scenes in which it is absent and, tellingly, these are scenes that are outside the Soviet boat. Thus, this throb – merging sound effect and music – is the aural symbol of the doomed boat. It is part of the music (in later scenes, it will return as conspicuous beats or double beats within the musical score), but even more striking, it is an indispensable part of the Soviet submarine's soundscape. To an untrained listener, it may appear like a real, diegetic sound in submarine technology, but in fact it is an emotional cue telling us about the boat's fate from the very start of the film.

Two years before the production of *Hostile Waters*, another submarine film came out, which not only set standards for later submarine productions, but seemed to prophesize the asymmetrical war situation that has decisively changed the tasks of the international navy forces in the past few years. *Crimson Tide* (Tony Scott, music by Hans Zimmer, 1995) establishes the fictitious drama of Russian nationalist rebels taking over various military bases in the former Soviet Union and threatening to fire nuclear missiles onto targets in the US and Japan. The U.S.S. *Alabama* is ordered into the Northern Pacific to prevent this attack by destroying the rebels' base with trident missiles. Due to a defect in radio communication, only fragments of a second 'emergency action message' (EAM) of the national military command centre gets through to the submarine, and a decisive conflict develops between Commander Ramsey (Gene Hackmann) and the young Executive Officer Ron Hunter (Denzel Washington), leading to mutiny on the boat. Again, we have the well-known characteristics of time running out, an underwater submarine chase and duel, tension between the Commander and his Executive Officer, and global responsibility put into the hand of an isolated Commander and his crew.

In terms of the music, the score by Hans Zimmer is the least 'classical' among the films discussed so far: except for its main theme, a grand melody with a clearly Wagnerian pathos,²⁰ and the chorale *Eternal Father, strong to save*,²¹ we have an almost amorphous soundscape. This is filled with uncanny electronic sounds and low drones, with unsettlingly long-drawn brass sounds, and dark throbbing rhythms – an impalpable menace surrounding us without clear direction.

Crimson Tide offers a highly interesting combination of the acoustic merging of commercial and filmic elements. The opening of the film displays an integration of the dramatic soundtrack and commercial targets: as usual, the film opens with the logo of the film company (Hollywood pictures), dramatized by acoustic and visual elements to convince the audience that this company has a sublime product to offer. However, it is not the usual fanfare we hear: the visuals are already underpinned by what turns out to be the soundscape of

Trumpet

Trombone

Figure 4: Opening melodic motif of the score to *Crimson Tide*.

the film. A low, menacing drone sets in while the screen is still dark, and odd reverberating sounds from a netherworld convey the impression of an endless space; indefinite vocalizations are heard, reiterating a minor third, like some archaic invocation. These low sounds are answered by the shocking crack of a thunderbolt, and out of this comes a trumpet solo, hesitatingly answered by a trombone (Figure 4).²²

In the following sequences of the film, music drops in and out – yet despite the pauses, it continues to build up a seamlessly dark and threatening atmosphere. The movie opens with a CNN news report informing the audience (and an imagined ‘diegetic audience’ of the filmic present) about Russian national rebels taking over greater and greater territories of the former Soviet Union. This report is underscored by long-drawn trombone sounds – hovering, luring low sounds that serve to dramatize the already highly dramatic pictures of spreading rebellion and warfare ‘really’ happening in the unstable eastern republics. Completing this opening of impending, deadly danger is the voice report of CNN journalist Richard Valeriani, who speaks in the standard news reporter style, but the phonetics of his report add to the urgency of the visuals.²³ Due to his being on an aircraft carrier with the extreme noise of starting air-fighters in the background, his voice is loud and urgent, obviously excited – and obviously anxious. The audience is immediately drawn into the plot: music, visuals, sound effects, and language make it clear to the spectator that we are on the brink of a global military disaster.

As the trombone notes become more and more urgent, building up to some yet unknown climax, the end of the report overlaps with helicopter noise (another stock sound effect in film that conveys the feeling of urgency), and the trombones, suddenly supported by percussion, come to an end with a last, menacing major second step, avoiding the conclusiveness of a leading tone – a brutal confrontation of something inevitable to come.

After the dramatic contrast of an innocent birthday party for the 4 year old daughter of Ron Hunter (with no musical underscoring), the drone sets in again as Hunter and his friend Peter Ince (as we later learn, Weapon Officer on the same boat) notice a news report about the dangerous situation in the East.²⁴ Ince’s hopeful words – ‘Maybe it’s not as bad as it looks’ – are countered by a chilling sound effect: the penetrating ring of Hunter’s telephone, immediately answered by the urgent beep of Ince’s alarm.²⁵ The image is symbolic: the telephone lies right next to the birthday cake with its burning candles on top – global evil has broken into the innocent birthday party of a little girl and her family.

Finally, at the briefing of the officers, a familiar sound effect returns: the extreme danger, as summarized by Admiral Anderson, is underscored by a

22. The music is written down after listening to the soundtrack; slight discrepancies with the original may have occurred.
23. In fact, the news reporter Richard Valeriani is a real character, adding yet more ‘authenticity’ to this introduction: in real life, the well-known NBC news reporter Richard Valeriani was active in the period 1961–1988, covering, among other ‘big stories’, the entire Falkland War for his channel.
24. Tellingly, the drone becomes clearly perceivable at precisely the same moment as the words ‘nuclear attack on the United States and Japan’ are uttered.
25. The telephone is a typical object for the sound effect of an urgent alarm in films. Cf. Debatin/Wulff 1991.



Figure 5: Rhythm as a means of adding urgency in *Crimson Tide*.

26. Cf. Koldau 2008a.
27. Cf. the statement of Christine Whitaker, producer of the National Geographic TV-Series *Explorer*: 'It does what the best National Geographic stories do [...] It brings you into another place, another culture, and it humanizes the people who inhabit that world. Historically, Russians have been portrayed in the movies as our traditional enemy, but this story gave us the chance to show the heroism of these people in a moment of real crisis' (<http://www.nationalgeographic.com/k19/index.html>. Accessed 17 April 2009).
28. The clicking of this alarm is another sound effect frequently used in this film to indicate the deadly danger of nuclear contamination.

slow, brooding minor motif – and this again is underpinned by a throbbing rhythm (Figure 5).

Again, it is an ominous, continuous throb that adds a distinct sense of urgency to the soundscape of submarine films. Like the strange, long-held tones, the low drones, the chant-like vocalizations and the odd electronic sounds, this throbbing will turn up again and again in the soundtrack of the movie, filling it with a sense of immediate danger and deadly seriousness.

A final example introduces another simple, yet effective musical technique to create the feeling of rising tension and growing danger. *K-19 – The Widowmaker* (Kathryn Bigelow, music by Klaus Badelt, 2002) tells the story of the Russian nuclear submarine K-19, the first Russian submarine to be armed with nuclear missiles. On its maiden voyage in the summer of 1961, this submarine had a deadly reactor defect which cost the lives of more than ten crew members. With the exception of the 'war music' (used for drills and the firing of the test missile), Klaus Badelt's film music concentrates entirely on the tragic doom of the submarine: the score, written in a late romantic style, is a large-scale variation on two intricately linked minor themes, which adapt the respective situation and imbue the entire film with a sense of doom.²⁶ Compared to other submarine films, *K-19 – The Widowmaker* makes little use of characteristic submarine sounds; instead, it concentrates almost entirely on the 'human interest story', which the producers wished to highlight.²⁷ However, in the luscious, almost uninterrupted musical flow, there is a tiny instance that seems to turn into an aural personification of the unseen, deadly radiation that is contaminating the boat. Occasionally, the main musical theme of the film, a strong, heavy minor melody, is made more poignant through a long-held note by a solo trumpet, which builds up a strong tension against the melody. In fact, the juxtaposition of a static sound and movement is a standard technique in general composition, and especially in film music, to create tension. In *K-19 – The Widowmaker* it is applied several times, most noticeably at the point when the radiation level in the boat is slowly, imperceptibly rising. The single note of a solo trumpet is heard for more than one minute – a long span of time in a film – set off against a few, plucked string notes. The following series of scenes, underscored by this static tone, suggests imminent misfortune:

- K-19 lying helpless and small in the open ocean
- The crew's deserted quarters with the radiation alarm blinking regularly²⁸
- Misha, the pet mouse of a crew member, in agony
- Radiation in the various compartments is measured with a Geiger counter
- The cook asks the commander how he is to feed the men, the food on the boat being contaminated

The consistent link in this sequence of shots is the radiation that cannot be seen or felt by the men. Only Misha, the mouse, is already feeling its deadly effect. The visual manifestation of the deadly danger – the blinking of the radiation alarm, the mortal agony of the little rodent, a crew member walking round with the Geiger counter (pursued by the suspicious looks of his comrades) – is complemented by the long note of the solo trumpet: an acoustic sign of rising danger. It is this penetrating, relentless sound that represents the radiation that cannot be perceived by human senses.

THE UNSEEN DANGER – MUSIC, SOUND, AND SILENCE AS REPRESENTATION OF AN UNDERWATER MONSTER

So far, various techniques of representing a silent menace acoustically, the sense of impending danger from the depths, have been examined. The question now is, why bring in sharks? Why the elaborate introduction about the link between sharks and submarines, if they obviously belong to two quite different worlds, man-made warfare versus nature? Of course, there are considerable differences if we compare submarine films and horror films with sharks attacking and devouring people – most of the characteristics shown to be part of the submarine myth do not apply to the shark myth, if we can speak of such a ‘myth’ at all.²⁹ In fact, a worldwide, almost contagious, fear of sharks did not spread until the late twentieth century, when Peter Benchley’s novel *Jaws* came out in 1974 and was turned into the famous blockbuster by Steven Spielberg the following year – only then did the image of the sharp-toothed monster from the ocean’s depth, lurking in search of human prey, become a kind of universal myth which caused people to change their holiday plans from a seashore vacation to hiking in the mountains. A myth that cost many a fish’s life: Lothar-Günther Buchheim, already introduced as author of *Das Boot*, includes a telling scene in his novel *Der Abschied* (2000), featuring a realistic and yet symbolic farewell voyage on the German nuclear tanker *Otto Hahn*: a (harmless) shark is caught by one of the most gentle of the sailors, heaved onto deck and brutally slaughtered by the man, with several sailors and the female stewardesses watching the slaughter in overwhelmed fascination until one of the women finally cuts out the shark’s jaws with her own knife (Buchheim 2000). In fact, Spielberg’s famed movie not only inspired films, computer games, and musical productions – it has also been criticized by conservation groups, who registered that it had become considerably harder to convince the public of the need of protection for sharks after the film had been shown in theatres worldwide from 1975 onwards (Chapple 2009).

Jaws and its three sequels (1978, 1983, 1987; none of them directed by Spielberg) were, of course, not the first films to highlight the fear of sharks – the precursor is probably the shark attack in Walt Disney’s *20,000 Leagues Under the Sea* (Richard Fleischer, 1954).³⁰ Yet it is *Jaws* that linked the unseen and unheard monster inseparably to music – in such a dramatically convincing way that film composer John Williams received the Academy Award for his score.

The overture to *Jaws* is so well known that it does not need any description. However, in the light of the openings of submarine films just discussed, it is remarkable how close this thriller comes to the films belonging to the submarine genre. In his essay on the opening sequence of *Jaws*, Alexandre Tylski has impressively described the make-up and the emotional impact of the first shot seen:

29. Strictly speaking, it is only in the mythology of Hawaii and other Pacific Ocean cultures that sharks figure prominently, being considered gods and guardians of the sea. Here, as mentioned in the introduction, ‘myth’ is used in the modern, generalized sense: as a concept imbued with secondary and symbolic meanings created by the collective memory.
30. An (incomplete) list of shark movies and films with conspicuous shark scenes was offered at <http://en.wikipedia.org/wiki/Shark> (accessed 13 February 2008; not contained in the current version of the website any more), starting with *20,000 Leagues Under the Sea* (Richard Fleischer, 1954) and ending with the documentary *Sharkwater* (Rob Stewart, 2006).

John Williams' Ives-like and incisive score deals with the energy and mythical aspect of this significant introduction. As the movie opens, the Universal logo appears. We hear mysterious and disturbing sounds, underwater sounds, sonar blips perhaps (as is clearly heard later in the film). Nevertheless, the ambiance prepares us to dive. The logo disappears and we remain in the darkness for several seconds (Spielberg is obviously aware of the primal aspect of a darkened theater). After the sonar-like sounds, two notes: F then F sharp, low and performed by a cellist, permeate the theater then suddenly disappear, exactly like a shark slowly circling its prey, vanishing without warning, then attacking abruptly from an unknown quarter. Another silence, following which the producers' names appear on the screen in response to the shark motif. (This association between the shark and the producer is amusing since the film often criticizes the power of money.) The same two notes then return, followed by a short silence and two other notes, doubled, as in a mirror. Another silence. Two more notes, still the same, then six more notes performed crescendo. We feel that something threatening is coming closer and closer but we can see nothing. Williams, by using the crescendo, creates an idea of distance and movement, transforming rhythm into a highly visual element – which has always been one of Williams' most effective skills. The movie makes us dive into a world of sounds before showing us images (though what is heard can conjure up many images to an imaginative mind). In fact, this overture clearly announces how the whole film will be organized: some sounds often lead to the introduction of music and the music often leads to images (the music enables us to see beyond the images). [...] If the sound often comes first in *Jaws*, it is likely due to the invisible presence of the monster which we see only in fragments throughout the movie. Music thus brings an existence to the void (this is true in some movies and also in some lives). This musical overture also reminds us of a ballet overture. The composer tries to capture our attention, giving us the tone of the spectacle before the curtain opens. In any case, the music here ends as the darkness breaks, as we burst forth into the opening shot of the movie.

(Tylski 1999)

It is all there: the logo, the black screen, the writing, all very simple and very sober, a classical film's opening – if it were not for the sound. As in *Das Boot* and *Hostile Waters*, as in *Crimson Tide* with its merging of commercial logo and film sound, the visuals are imbued with a menacing atmosphere due to the sound underlay. The underwater sounds, fittingly described by Tylski as 'disturbing', open the acoustic scene to the presence of the Other – of some unseen horror, drawing closer and closer. In *Das Boot* the black giant visually emerges from the green depths. In *Jaws* nothing is seen, but it is a two-note musical motif, a minor second, that represents some horrible threat coming closer and closer. The audience is even more helpless than in *Das Boot*, for there is nothing but blackness – yet the music, with its rhythmic intensification and rapid multiplication of the two-note motif, tells the spectator clearly that a mortal danger is approaching. Other critics have convincingly identified the famous ostinato theme as a representation of the zealous shark itself:

In fact, the theme represents the internalized zeal of the shark itself – a flow that Williams and Spielberg allow the audience to listen in on.

The theme speeds up as the shark gets excited, and the theme is absent from scenes in which the shark isn't anywhere near, most notably in the false alarm scenes of mistaken identity. The shark's primitive and brutal hunting inclinations make the musically simplistic two-note theme into the embodiment of the shark that Spielberg had struggled to obtain with the actual physical shark that he had built for the film. Even if you see a fin in the water, if Williams' theme isn't heard, then there's no reason to worry or panic.

(Anon. 2003)³¹

As with the 'ping' in *Das Boot*, the spectator instinctively grasps that behind this music there is a deadly menace. It is a little later in the film (starting with the scene in which Chrissie dies swimming at night) that the musical theme is unmistakably linked to the shark by its combination with the monster's (presumed) perspective; this allows the spectator to share the visual perception of the shark itself.³²

Williams's famous *Jaws* theme, based on the accelerated reiteration of a minor second, is of course not a succinct visual rendering of a shark. It could also be applied to other horror films featuring zombies or ghosts – or anything horrible stealthily approaching an innocent prey. It is clear, though, that the music 'depicts' a stealthy approach of something unseen – and therefore offers an acoustic rendering of a central element of the shark and submarine myth. In fact, the rhythmic intensification of this theme – the reiteration and accelerated multiplication of a two-note cell – produces a palpable spatial effect of approach, thus building a bridge between the acoustic and the visual.³³ The vital 'trick' of *Jaws* – as well as the submarine warfare in general – is that the approaching predator is not seen.³⁴ It is music that represents the horror coming from below. To quote Alexandre Tylski once more:

Just as Bernard Herrmann's music in the *Psycho* shower scene was, figuratively speaking, symbolizing what Hitchcock did not show us, that is the knife's contact with the victim's body, Williams' score gives a reality to what Spielberg prevents us from seeing: the shark's jaws.

(Tylski 1999)

Thus, music becomes the stand-in for something that is too dreadful to be seen – and thus, it becomes the perfect tool of a horror film, transferring elements of the familiar visual level to the unseen, aural level. Music is ambiguous, and therefore it has stronger effects on the emotions than visible, palpable objects.³⁵

Yet it is not music alone that represents the shark: the sound of the shark is the sound of silence. If the typical hunting technique of sharks is transferred to sound and music, it results in a suspense-filled interplay of sound and silence. In many cases, sharks give their prey a first bite and retreat, in order to wait until the prey is weakened by loss of blood and cannot defend itself any more. Thus, a 'typical' shark attack will consist of a sudden shock, then sudden silence, tense waiting, and then the second, mortal attack. This pattern is frequently exploited in shark attack scenes in film: the retreat of the shark offers a moment of intensification and growing fear. Transferred to music, it means a sudden (perhaps dissonant) outburst, then silence and growing tension, until the next attack provokes a new acoustic drama. Beyond this specific hunting technique, silence integrated into sound is an essential feature of a 'shark score', because it transfers one of the essential characteristics

31. Cf. a similar judgment of the theme in the review of *Jaws* by Berardinelli 2002.

32. It is this optical trick, the technique of subjective camera applied to a monster, that made the opening of Spielberg's film so famous.

33. A remarkable instance of imitation shows the long-standing viability of this theme as a token for the relentless approach of an underwater monster: the 1999 production *Deep Blue Sea* (Renny Harlin, music by Trevor Rabin) pays homage to *Jaws* in several ways (even using the very same Louisiana registration plate that is extracted from the smaller shark's stomach in Spielberg's blockbuster). The music in *Deep Blue Sea* is radically different from the symphonic score used in *Jaws*, yet it also relies conspicuously on the step of a minor second. However, it is not the music of the film itself that rings a bell: in the USA trailer of the film, the growing dramatization of the gripping plot promised to the audience is suddenly underpinned by an unmistakable imitation of John Williams's *Jaws* theme as used in the opening sequence of Spielberg's film. It is all there: the isolated second, the low strings, the reiteration of the two-note motif, and finally its ruthless acceleration, conveying a sense of deadly danger and determination. The film itself does not use this music at all – such a bland copy of the famous *Jaws* score would probably have caused a scandal (not to mention a law suit for plagiarism). In the trailer, though, the insertion of this music perfectly lives up to a trailer's function: it imparts to the audience that, 24 years after Spielberg's great shark success,

another gripping movie of corresponding quality is to be expected.

And, just as director Renny Harlin inserted the references to *Jaws* with a little tongue-in-cheek effect, the musical reference in the trailer might also have an almost humorous double meaning: it is not only the shark that is relentlessly approaching, but also the first night of the movie itself.

34. Curiously, it was the mechanical flaws of the fake shark used for the shooting that forced Spielberg to conceive most of the scenes with the shark only hinted at. Instead of weakening the dramatic fabric, this compromise increased the suspense of the attack scenes in which the shark is only represented, if at all, by brief visual allusions – and by the horrified reaction of those attacked (cf. Stephenson 1998).
35. For a broad discussion of this quality, especially with regard to film music, see Langkjær 2000 and Robinson 2005.
36. On the visual level, this feature is undermined by the famous shark's fin, if the shark attacks close to the surface (and this is the case in most scenarios containing attacks on swimming humans). As a visual cue for the imminent danger, the shark's fin is so ubiquitously present that it has almost turned into a comical feature (thus, it is used in countless trick films). Spielberg uses the ambiguity of this visual cue in *Jaws* to build up a double tension before the next real attack in the little bay on 4 July (featuring first a fake-fin that is used as a joke by two little boys and causes panic on the beach, which distracts the general attention from the real monster stealthily entering the little bay).

of this predator to the soundtrack: the stealth of the animal, necessary for a successful surprise attack on whatever prey.³⁶

Thereby returning to the initial assertion that submarines and sharks have much in common (the same being valid for the films focusing on these two species of 'monsters from the depth'), one very special instance in which both myths are merged should not pass unnoticed: a satirical instance, which serves even better to highlight the topoi of these two genres. Since satire often works by exaggeration of the norm, it underlines the features that are perceived as 'normal'. Thus, in the case of submarines and sharks, particular features of the visuals and the soundtrack are highlighted that are used as topoi in films on this subject. In 1977, a new James Bond film was released: *The Spy Who Loved Me*, directed by Lewis Gilbert and starring Roger Moore as the British agent James Bond, Barbara Bach as his beautiful Russian opponent Anya Amasova, and Curd Jürgens – the famous German submarine Commander in the submarine film *The Enemy Below* (USA 1957, Dick Powell) – as the misanthropic megalomaniac Karl Stromberg. This movie unites elements of both the shark and submarine myth in film: the story revolves around two nuclear ballistic submarines, one British, one Soviet, which have disappeared with crew and full armament. As James Bond sets out to discover what has happened to these submarines, he comes across Stromberg's underwater empire 'Atlantis', which Stromberg intends to use to destroy the entire world (with the captured submarines' nuclear missiles) in order to build up his own underwater world.³⁷ In the course of events, Bond and Amasova are taken onto an English nuclear submarine, which is then captured by Stromberg's giant super-tanker *Liparus*. The capturing scene is remarkable: the submarine is 'gobbled up' by the giant ship, whose bow opens to take in the apparently tiny submersible (in fact, modern nuclear submarines have a length of up to 560 ft). The music used in this scene is characteristic of the Bond films: not at all refined and over-explicit. As the giant super-tanker is seen approaching the helpless submarine, massive brass is heard, hammering a quasi-ostinato two-note motif, a major second upwards. This is juxtaposed by shrill violin 'sighs' above – minor seconds that are obsessively hammered downwards by the strings. Ostinato motifs and obsessive seconds are both stock signifiers of growing suspense and menace in film music, which relate to century-old hermeneutic traditions in western composition.³⁸

However, director Gilbert did not content himself with elements from the submarine myth to spin his yarn of Bond the superman – he also integrated elements of the shark myth, making *The Spy Who Loved Me* an explicit parody of *Jaws*, which had just conquered the audience in movie theatres all over the world.³⁹ Indeed, the indefatigable and invulnerable killer sent to destroy Bond and Amasova is called Jaws, owing to his steel jaws which – a pinch of Dracula brought into the film – he uses to kill his victims. There are even more palpable allusions to Spielberg's blockbuster, though: one of Stromberg's little pleasures is to dispose of his enemies by dropping them into a shark basin and watch through a window as his maritime pet – a pretty imitation of Spielberg's plaything – devours them, while listening to classical music. The first feeding we see is Stromberg's treacherous secretary, a sensitive young woman who tried to sell Stromberg's plans of his future empire. The parody is achieved on both a visual and an acoustic level with the opening of the shutter on the observation window (decorated with a reproduction of Botticelli's *La primavera*) as Bach's famous *Air on the G String* is played; this transforms the desperate woman's underwater fight against the shark into a macabre

ballet of death. Visually, this parody of bloody underwater battle is intensified through the indecency of the shark, whose pinpointed muzzle displays a conspicuous and quite ungentlemanly interest in the very private parts of the long-legged woman.

The second instance brings together the inhuman character of the servant Jaws with his animal counterpart – and lets man (or rather human monster) triumph over beast: as Jaws is dropped into the shark basin by Bond, he grabs the dangerous fish and sinks his steel teeth into the shark's spine. While the scene in which Bond lifts Jaws using an electromagnet does not have any musical underscoring, hard kettledrum-beats set in as Bond leaves the basin hall and Jaws begins his fight against the fish. Visually, we are again confronted with a parody of *Jaws* as the water turns red when Jaws gives the shark the lethal bite (the reddening of water is used as a cue for the yet unseen monster in the first half of *Jaws*, and it returns as an enormous cloud of blood when the beast is torn to pieces by an explosion at the end of the movie). On part of the soundtrack, the ostinato kettledrum beats are parodically used as a portent of inevitable misfortune. However, they are only triggered off by the combat between Jaws and the shark – in the context of the movie's showdown, they actually refer to the impending destruction of Atlantis, which becomes the target of the nuclear torpedoes fired by the English submarine that was captured by Stromberg's *Liparus* earlier in the film and had freed itself from the super-tanker in a dramatic battle. Thus, the downfall of Stromberg's empire is set off visually by a shark scene and completed by the torpedoes from a nuclear submarine, i.e., with two familiar motives from shark and submarine films. This doom is acoustically sealed by the underlying drum beat, a musical stock device for fateful and fatal situations.

CONCLUSION

Examining a number of submarine films and the famous blockbuster *Jaws*, as well as the submarine and shark parody *The Spy Who Loved Me*, several musical and acoustic techniques have been introduced that serve to evoke and to intensify the impression of a silent menace drawing closer from the depths of the ocean. In the field of sound effects the imitation of propulsion sounds, ocean rush and reverberating underwater sounds, uncannily distorted by the acoustic setting of the ocean, set the scene for drama that will mainly take place underwater. Added to this, there comes the famous 'ping' of the sonar, exposing a submarine to its enemy. To this layer of 'diegetic' sound, music in many guises is added, using certain compositional features to generate impressions of danger and mortal fear. On the one hand, there are basic musical devices like the strong tension built up by static notes or chords (cf. the violin tension in *Das Boot* or the suspense of the long trumpet note in *K-19 – The Widowmaker*). Another 'technical', or rather rhythmical instance are repeated rhythms, which vary from subliminal ostinato throbs to hard and relentless drum beats announcing the inevitable. On the other hand, there is the broad level of melody, motif and theme.

This is an issue that has to be explored further in film music studies; so far, a hermeneutic interpretation of musical microstructures in film has not yet been attempted.⁴⁰ It can be observed in film productions employing compositional features of the western classical music traditions that certain musical topoi are used again and again in specific situations. Thus, the minor

37. The idea of Stromberg's underwater empire is clearly modelled on Captain Nemo's dream of living in an alternative world underneath the surface of the oceans in *20,000 Leagues Under the Sea*. At the same time, the architecture of Atlantis is a variant on the tripods in *War of the Worlds*.
38. Cf. Koldau 2008b.
39. In fact, Spielberg was originally asked to be the director of *The Spy Who Loved Me*, but, still busy with the post-production of *Jaws*, he declined the offer.
40. A first introduction to such an approach to the analysis and interpretation of film music is offered in Koldau 2008b.

41. Tellingly, Fred Karlin and Rayburn Wright in their guide to contemporary film scoring concentrate mainly on small motifs, their structural use and their emotional impact when writing about 'melody' as the first parameter of film composition (cf. Karlin/Wright 2004, pp. 197–222). A new approach to the analysis and interpretation of film music, combining these practical considerations with theoretical views on the effect of sound and film music, will be elaborated in *Studienbuch Filmmusik* by the author (to be published by Böhlau Verlag, Cologne, in 2010/2011).
42. In fact, in the sequels to *Jaws*, there are instances where the roaring of a monster is heard when the shark jumps out of the water – according to the dramatic fabric of these films, it was obviously inconceivable to present a monster whose horrifying appearance is not accompanied by an appropriately monstrous sound.

second is a prominent interval, especially in its downward 'sigh' form; this became associated with a labelled 'sigh motif' in the baroque Figurenlehre and carries a correspondent expressive 'aura' up to its (most famous) brassy version in Richard Wagner's *Der Ring des Nibelungen*, where it is labelled 'Wehe-Motiv' ('woe'-leitmotif). In the films examined, the minor second plays an important role in the main theme of *Hostile Waters* (cf. the music example above, where the marcato on the highest note b flat turns the subsequent downward step to 'a' into a sigh motif) and in the dark, brooding vocalization that underlies the ominous briefing in *Crimson Tide* (cf. the first two bars of the melodic line in the music reproduced above). The motif of the shark's theme in *Jaws* is an inverted sigh, thus displaying determination (if a minor second is directed upwards, it immediately assumes the assertive character of a leading tone approaching the tonic). But also the upward major second step can have its characteristic connotation, as seen (or rather heard) in the harsh, assertive ending of the trombone underscoring in the opening news report in *Crimson Tide*. However, in comparison to the sighing minor second, the connotation of the upward major second relies much more on the musical context, since it can have the connotation of the archaic if used instead of a leading tone (i.e., a whole tone step from the seventh to the keynote instead of the concluding semitone step that has been established as 'classical ending' in western tradition for the past centuries).

It is obvious from these examples that such music can certainly not be described as 'typical submarine' or 'typical shark' music. In fact, if we come to the question of compositional technique, much of film music becomes reduced to microstructures that are varied in innumerable ways and adapted to the respective context, without losing the basic connotation that has been associated with these musical cells for many centuries.⁴¹

Thus, there is no 'music of the submarines'. The 'music' of the submarines is their typical soundscape, consisting of mechanical sound, commands of submarine warfare, and, above all, underwater sounds. Music in submarine films has to react to this soundscape, to integrate or to contrast it, according to the exigencies of the film. The same applies to shark films. However, the task is more difficult, since we have hardly any typical sounds of sharks, so that the responsibility lies mainly with the music.⁴² But music is not all; on the contrary, as explained above, music (and sound) only unfold their true effects if complemented by the other side of a shark's attack – by sudden silence and the horrifying tension building up from it, in expectation of the next attack. Only then do music and silence add up to a convincing acoustic representation of this stealthy predator.

This feature in turn closes the circle and brings us back to submarines, whose entire existence depends on the quality of stealth. To examine the relation between stealth and overt action, between sound and silence in submarine and shark films would require a study of its own. Here, it was attempted to show that sound and music are systematically used in film to impart to the audience the inevitable by-product of stealth in the raids of submarines and sharks: the unmistakable feeling of a silent menace.

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SUGGESTED CITATION

Koldau, L. M. (2010), 'Of Submarines and Sharks: Musical Settings of a Silent Menace', *Horror Studies* 1: 1, pp. 89–110, doi: 10.1386/host.1.1.89/1

CONTRIBUTOR DETAILS

Linda Maria Koldau is Chair of Music and Cultural Studies at Aarhus University (Denmark) and focuses in her research on Monteverdi; music in convents; music and nationalism, the oratorio in the nineteenth century, and film music. Besides numerous scholarly essays she has published the books *Die venezianische Kirchenmusik von Claudio Monteverdi* (2001, 2nd ed. 2005), *Frauen – Musik – Kultur. Ein Handbuch zum deutschen Sprachgebiet der Frühen Neuzeit* (2005); *Die Moldau. Smetanas Zyklus „Mein Vaterland“* (2007), and *U-Boot. Ein Mythos in Film und Medien* (forthcoming). She is currently working on a general textbook on compositional techniques and the emotional effects of film music.

E-mail: muslmk@hum.au.dk
