

An Introductory Study of the Maltese Soundscape

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Abstract

This is an introductory study of the Maltese Soundscape and is part of an even bigger project. It introduces a soundscape dived with traditional sounds which still echo in the present and mutate and conflict with the modern sounds that are becoming part of the Maltese Sound field. This paper shows the study that has taken place, the results that have been obtained so far and the patterns in the soundscape that are beginning to form. From this initial analysis a number of possible solutions to noise problems have been presented. Further in depth investigations will be carried out and reported.

Keywords: Malta, soundscape, planning, urban, pilot, investigation, results, sound, noise, possibilities

1. Introduction

Looking down at Malta from the bastion walls of the so called 'Silent City' of Mdina the first thing that anyone will notice is that there is one big building sprawl along the east coast of the island. Stretching all the way from the furthest point in the North all across the coast to the very tips of the South of the island visually it looks like one big city fused together. Seeing all this from the heights of these bastions it is hard to imagine that within that urban sprawl exist so many towns and villages, which were once separated from one another. Many of these towns have very distinct characteristics, and it is common for a Maltese person to be proud that they come from their town of birth. Within some of these towns one can still see a strong tie with the past, and at the same time one can also observe the way that towns are shifting towards becoming more modern. This study of the Maltese soundscape is a pilot study to an ongoing bigger project. This paper introduces this work and reports the initial findings in relation to people's perception of their soundscape and how this reflects upon the overall Maltese Sound Field.

The Maltese islands, collectively known as 'Malta', are located in the central Mediterranean region. The Islands are 80km south of Sicily and over 300km north of Libya and almost 300km East from Tunisia. According to the 2011 population census the population of Malta is approximately 418,000 and is the smallest population in the EU. In terms of population density it is the most densely populated country in Europe with approximately 1300 people per square kilometre (Population & Housing Census 2011). The islands of Malta and Gozo are considered, by the European Urban Audit, to be two cities or Larger Urban Zone's (LUZ) which are 'Valletta' which refers to the Island of Malta and 'Gozo' which refers to the island of Gozo (ESPON, Urban Audit, LUZ Specifications, P.54, 2004).

If we go back to the earliest traces of historical sound in Malta then we would have to go back to Neolithic times. There are a number of temples that were built during this period and which are among the oldest built structures in the world. One of these structures is an underground temple now known as the Hypogeum of Hal Saflieni. It is believed that this temple has an ancient acoustic marvel known as the chamber of the oracle. This is a dome like structure carved in limestone which amplifies sound quite radically and can be compared to the acoustic equivalents of Gothic Cathedrals (Blessner & Salter, 2007). Sound is ancient in Malta and the echoes of this underground temple can still be experienced up until this day.

The idea of worship always remained strong on these islands and the echoes and reverberations of praise are replicated in the numerous churches that populate the country.

The traditions of praise extend out onto the village or town feast where the veneration of the town's patron saint is celebrated on a yearly basis. The brass bands march through the streets surrounding the church. Fireworks and the intricate engineering of Catherine Wheels add to the sounds of celebration and shout out praise across the Maltese Skies heralding this important event to the rest of the island. The church bells are the daily keepers of time that linearly follow the passage of the days and nights and mark the times of worship at the different times of the day. The traditional sounds do not all revolve around the religious for we also find that in the older villages certain old practices are still alive with regards to sound signatures that are a demarcation of the past. The narrow, winding streets of the old towns once again sustain an element of echo and reverberation due to their narrowness and the high walls that trap the sounds and give them an ethereal tone due to their long decay times. All signals are amplified and transmitted just like the oracles chamber in the Hypogeum. It preserves the march of time and the signature of all the cultures that have lived on Malta and left their mark. Their physical legacy is evident. Their sonic legacy is invisible yet it is etched in the walls of the caves, the narrow streets, the underground labyrinths of the Catacombs where St Paul spent his time during his stay on Malta. The vector of sound continues through the echo and the original sound source slaps back reshaped or refigured as a spatial object (Labelle, 2010).

The emphasis on the past is essential when describing the Maltese soundscape because this is a country which is strong in its traditions and these traditions do have a strong impact on the way that the place sounds. One clear example of this is reflected in the Maltese language. This is a language that has survived foreign occupation for hundreds of years. Even though Maltese is said to have originated from Arabic, it is also believed that Maltese people spoke Punic during the times when the island was a Phoenician trading port. The similarities between Punic and Arabic meant that it was almost natural for the people of the island to take on this Arabic dialect as their language. Still the exact origins of the Maltese language are unclear and scholars still debate whether Maltese comes from Punic or from Arabic (<http://www.thinksite.eu>). Over the years the language took on many Romantic words from Italian which was the official language for a long time and it also took a lot of words from English and it still is integrating many English words into the language up until this day. English is the second language spoken on the island and is also an official language of Malta along with Maltese. Italian is also spoken by at least 40% of the population (Population and Housing Census, 2011). Maltese is now recognised as an official language of the European Union (<http://www.kunsilltalmalti.gov.mt/legislation>).

There are even parts of Malta where Maltese people do not speak Maltese but speak English instead. This is done intentionally in order to distinguish one's class as being superior to the common, Maltese speaking class. This occurrence is more likely to be found around the North Harbour area and in certain towns in the Central parts of Malta. There are also the different dialects of Maltese that are spoken in different towns. These dialects are more likely to be heard in the older towns. A person from Gozo speaks a different dialect to the person in Siggiewi. For a country of such a small size it is surprising to see how different dialects exist with such little distances between different towns. The dialects exist because in the past the different towns were separated from each other and people worked the land. Malta was mainly an agricultural society (Malta Structure Plan, 1990).

The invention of the motor car brought about many changes to the building and development of the island but it also brought about many changes to people's movement, their levels of interaction and in turn this affected the soundscape. Over time the towns of Malta all started to blend into one big town and the physical boundaries between different places no longer existed except of course in the case of the fortified cities of Valletta, the three cities, Mdina and La Citadella in Gozo. Even though the physical boundaries disappeared but the distinctions between certain towns is still evident in the way that certain old traditions are still prominent in these places whereas in others they no longer exist.

When sitting in a typical town or village square it is easy to listen to all the different characteristics that have become commonplace in the 21st century Maltese soundscape. The town square or 'Piazza' has always been the central place of activity and if a person had to describe the sounds that they could hear while occupying one of the benches situated somewhere along the square then a mixed palate of sounds could be described indicating a mixture of eras. Traditional sounds compete against modern ones, and together they can either please the ears of the listener or irritate. Eliciting these impressions provides a clear indication and definition of the sound of Malta and how its people perceive it. A listener may easily notice the church bells, the conversations of old men occupying benches who discuss and argue for hours, the sounds of music from bars with loud music, the African languages in their plenty in the refugee congregations that now populate many a Maltese town square. The noise of traffic that moans across the space and some cars add further pollution with their booming sound systems whacking out the four on the floor of a 909 kick drum. In summer the Cicada's sing when it is hot and in winter it is the howling wind and the rustling of leaves. The blaring television coming from an open window once a common characteristic but dying out since air conditioning calls for windows to be closed even in summer time.

These are just a few of the examples of the sounds of a typical square but different towns in Malta have different characteristics.

It is also important to note that Malta is a touristic place which attracts about 1 million tourists each year. In 2012 approximately 1,400,000 tourists visited the island when calculated using tourist departures as a form of measurement (MTA Statistical Report, 2013). This shows that Malta's sound field changes on a season basis and that this change is determined by the tourist activity going on the island. Tourism is mainly centred around the central harbour of Valletta, Sliema, Gzira and St Julians and in the north in St Pauls Bay and Mellieha. Places like Mdina and Rabat are visited by many tourists both during the day and at night. The Designation of 'Silent City' attributed to Mdina is questionable when its streets are populated by hundreds of parading tourists on a daily level.

Sound is an ever elusive phenomenon ever changing and yet it occupies space and takes up moments of time. It gives us location, a space for interaction. It gives us a sense of place and a sense of community. It creates a space that belongs to everyone and yet it also imparts a feeling of intimacy (Labelle, 2010). The ever changing soundscape is forever under construction and can be seen as having more to do with civilisation than with nature (Thompson, 2002). The new sounds of the Maltese sound field still share the echoes of the past but are prominent in their own right and influence in their own way. People perceive the soundscape. They audibly interact with their ethno environment in an auditory space. This is sonic construct where dynamic mediation takes place (Chattopadhyay, 2012). They hear and what they hear determines their outlook of their world. What people hear influences their actions (Muller, 2012). Even the native language of a people determines their outlook on the world and determines their perception of space and time (Boroditsky, 2011). That is why in order to study the soundscape one must investigate what it is that people hear. In the case of noise pollution, noise abatement is not the only solution. It would be best to take the positive approach to the nature of the sounds that we perceive and to see whether or not these sounds should be preserved or encouraged (Schafer, 1994). The investigation of sound rests on the perception of what people are hearing.

In order to measure the Maltese soundscape an investigative approach was taken that would look at the memory of sounds that could be recalled, sounds that were still existent and sounds that were new in the persons environment. Classification of these sounds was also important in order to determine how people relate to the sounds of the past and current environment. Hellstrom (2002) describes Amphoux's approach to sonic investigation which also looks at the personal perception of the sonic identity in relation to sonic memory, sonic perception and sonic interpretation.

The sonic memory was needed in order to form a picture of the soundscape of the past. Memory was also required in order to recall the sounds that are being heard now in the present. The meaning of these sounds to the person was essential because it is through that meaning that the participant would be able to classify these sounds. The investigation had to include past and present elements because the Maltese soundscape is made up of both and in order to achieve a good representation of both ages it would also be important to find people who had always lived in their current towns. A participant from Valletta would definitely be needed in this analysis. We refer to Valletta here as the actual fortified city and not as the island of Malta as designated by the ESPON Urban Audit mentioned above. Valletta is the capital city of Malta and the comparison with other towns in the urban sprawl would show significant differences. One may also note from Map 1 that the other towns investigated in this survey are situated around the Valletta centre.

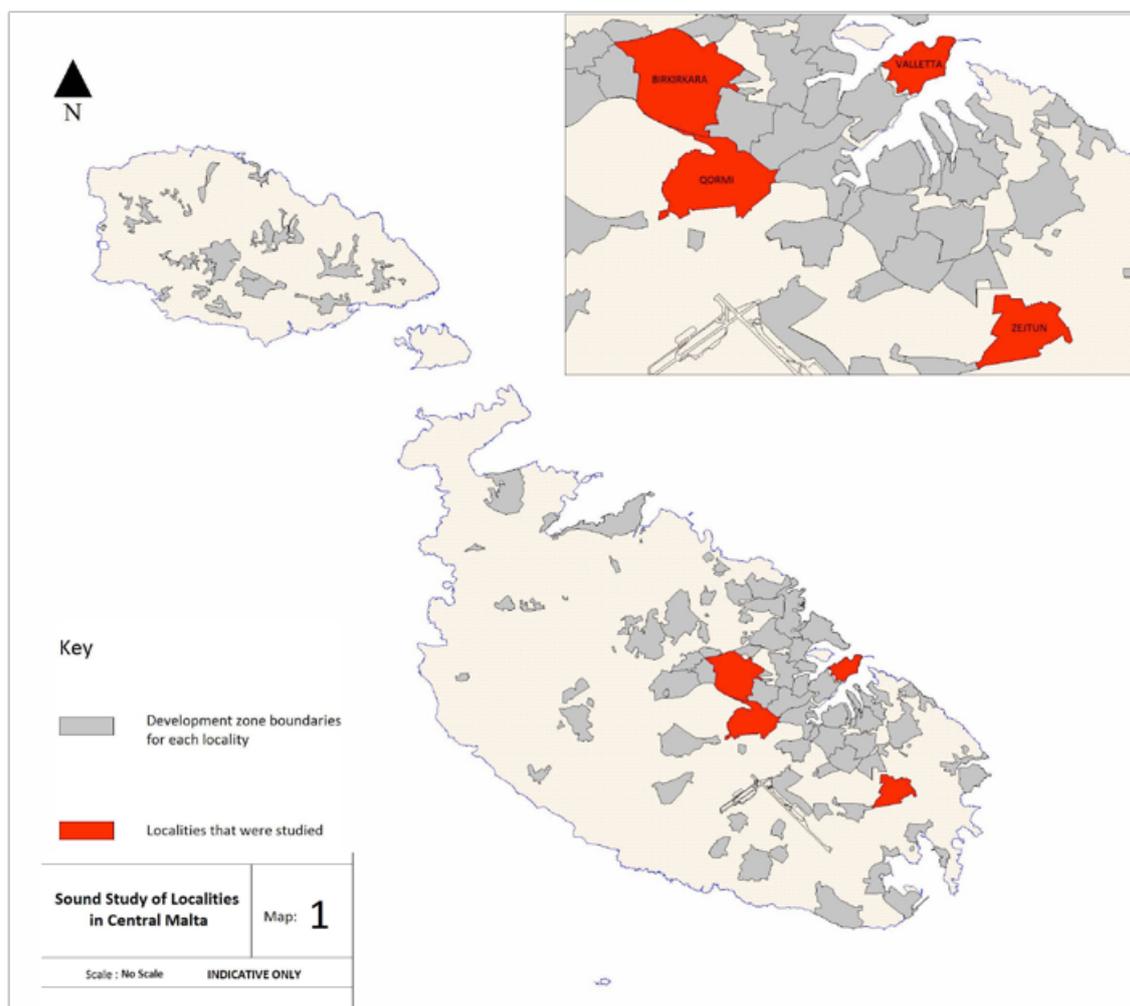


Figure 1. Map 1.

From Map 1 when looking at the island of Gozo (the smaller island) we see a difference in landscape. The urban sprawl of Malta is not replicated on this smaller island. There are still evident boundaries between most of the towns. Gozo is often referred to as 'the island where time stood still'. This analogy comes from the fact that Gozo has been referred to as Homers island of Calypso where Ulysses stayed for forty years with the nymph Calypso. The reference of Gozo being the island where time stood still also refers to the fact that Gozo is much more traditional than Malta which would also mean that its soundscape will probably sound older than Malta's. Again, Gozo is a tourist attraction and again we find a seasonal change in the soundscape. There is also local tourism when at certain times of the year thousands of Maltese people go up to Gozo for a 'weekend break' and the mass Maltese invasion of Gozo leaves a definite mark on the Gozitan soundscape. Gozo has a population of around 27,000 people (Population & Housing Census, 2011). It is a much quieter and less active island than Malta in the quieter times of the year when tourism is low. Investigations into Gozo's soundscape will be carried out for the larger study of the Maltese Soundscape which this paper is related to.

2. Method

This is a pilot study to a more extensive study that is currently taking place, only four participants and four localities in Malta have been covered for this paper. In order to gather information with regards to the Maltese Soundscape a number of people were interviewed. Four participants, all from different localities in Malta, took part in these interviews. Towns were chosen according to the availability of people who could be interviewed. All the participants were chosen on the criteria of having grown up and are still living in their respective towns. Participant's ages ranged from 39 to 54 years of age. The analysis investigated what changes in sound had occurred during this time and what sounds still existed up until this day.

The interview was split into three parts:

- Part one was related to memories of sounds from the past. Participants were asked about memories of sounds from their childhood; the relationship in terms of memories of sounds from their local town square; they were then asked to talk about

whether there were any sonic changes that they noticed while they were growing up and that they could recall.

- Part two was about sounds that are heard in the present, were there still sounds from their childhood which currently makes up part of the locality's soundscape? What were the new sounds that they heard in their towns? And finally they were asked which sounds they would preserve, revive, eliminate or reduce in their current town's soundscape.

In parts one and two participants were asked to write down their replies to the various questions that they were asked.

In part three the interviewer asked the participants to categorise each and every sound that they had mentioned in the two previous sections. Table 1 shows how the classifications were made. Repertory Grid Technique was used for the analysis of the findings. This technique introduced by Fransella and Banister (1997) has been used in a number of sound studies. RGT is often broken down into stages of element elicitation, construct elicitation, rating and analysis. For this study the sounds i.e. the elements, have been described by the participants. The constructs used were based on classifications used by Turner and McGregor, 2012.

Elements were rated using the constructs typically on a 3, 5 or 7 point scale (Fransella & Banister, 2004). In this study the elements were rated using a three point scale with the two opposing factors being 1 and 3 for example high pitch and low pitch and the centre scale of 2 represented the mid range or neutrality in the context of the two opposing definitions.

- The interviews took place at café's, people's homes and even in their offices at their working places. Each interview roughly took between 45 to 50 minutes in duration. Participant's identities were anonymised and ethical consent was requested since they were recounting personal information.

Table 1. Categorising Sound for Analysis

1	2	3
Speech	Neither Speech nor Sound Effect	Sound Effect
Gas	Neither Gas no Solid	Solid
Impulsive	Neither Impulsive nor Continuous	Continuous
Short	Neither Short nor Long	Long
High Pitch	Neither High Pitch nor Low Pitch	Low Pitch
Loud	Neither Loud nor Soft	Soft
Informative	Neither informative nor Uninformative	Uninformative
Pleasing	Neither Pleasing nor Displeasing	Displeasing
Clear	Neither Clear nor Unclear	Unclear

The four participants will be referred to as PT1-4. Each of them is from four different localities (see table 2).

Table 2. Participants & Localities

Participant	Locality
PT1	Valletta
PT2	Qormi
PT3	Birkirkara
PT4	Zejtun

3. Results

3.2. General observations

For the purpose of this paper the two sounds mentioned by all four participants are highlighted in the tables and figures below:

Traffic

Table 3. Traffic.

	Speech / sound effect	Gas / solid	Impulsive / continuous	Short / long	High / low	Loud / soft	Informative / uninformative	Pleasant / displeasing	Clear / unclear
Valletta	3	1	1	3	3	1	2	3	1
Qormi	3	1	3	3	1	2	3	3	3
Birkirkara	3	3	2	3	2	1	1	3	1
Zejtun	3	1	3	3	2	2	3	3	1

The results from the table are represented in figure 1 below:

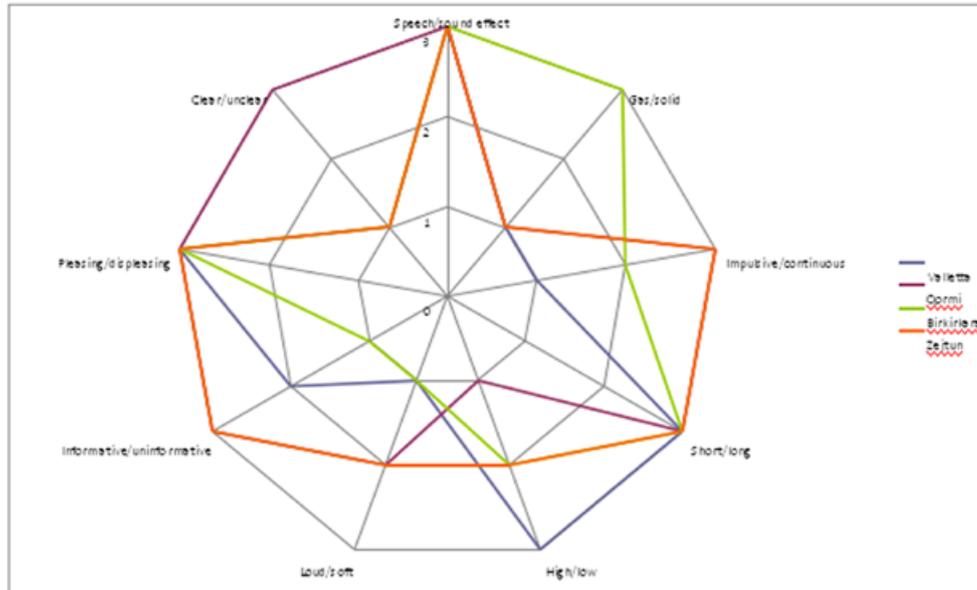


Figure 1. Traffic.

People Talking on the Streets

Table 4. People Talking on the Streets.

	Speech / sound effect	Gas / solid	Impulsive / continuous	Short / long	High / low	Loud / soft	Informative / uninformative	Pleasing / displeasing	Clear / unclear
Valletta	1	3	3	3	2	2	1	1	1
Qormi	1	1	2	1	2	1	3	2	3
Birkirkara	1	1	1	2	2	2	1	2	3
Zejtun	1	2	2	1	2	2	2	3	3

The Results from the table are represented graphically below:

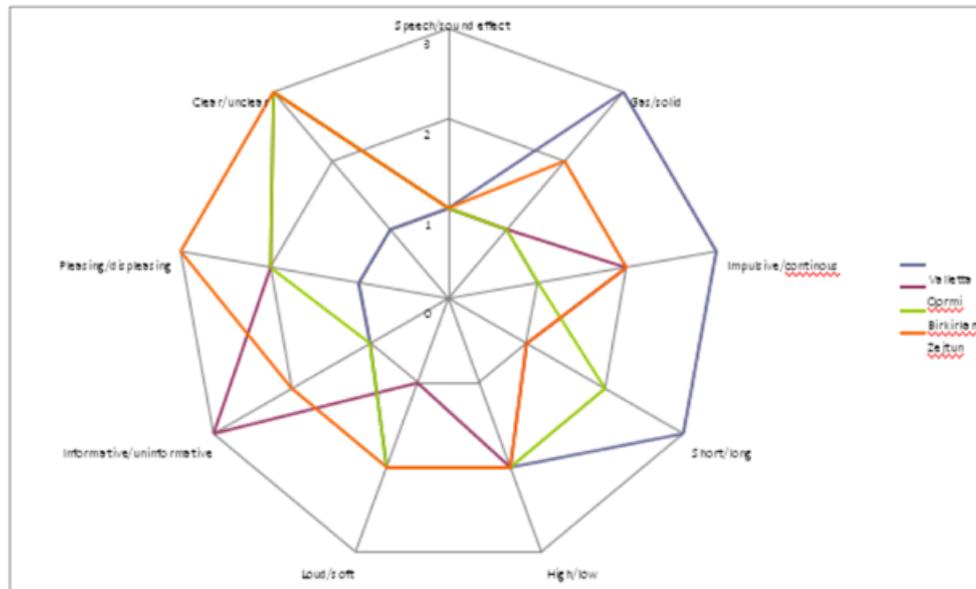


Figure 2 People Talking on the Streets.

The modes for this section were calculated by taking the most frequent classifications of the sounds described by the participants with regards to the sound categories used for the interview.

Three participants categorised most of their sounds as sound effects and gaseous whereas PT2 related most of the sounds as having a speech-like characteristic and PT1 described the Valletta soundscape to be solid in texture.

Sound in Valletta and Qormi were described as being more continuous and in Birkirkara and Zejtun they were seen to be more impulsive. PT3 and 4 seem to perceive sound in instances rather than listening to a continuous soundscape.

In terms of pitch three participants generally categorised sound in their localities as being high pitched whereas PT3 heard them as being more mid range in characteristic. PT3 also attributed the local sounds to be of mid loudness being neither loud nor soft and the other three participants found their sounds to be loud. PT 1 and 3 found their general soundscape to be informative as opposed to PT 2 and 4 who relate to their soundscape as being uninformative. PT1 finds the overall soundscape in Valletta as being pleasing; PT2 and 3 have a neutral attitude with regards to their respective soundscapes and PT4 reflects a more displeasing attitude towards Zejtun's soundscape.

Valletta is a touristic city and a centre for commerce and thousands of people visit the place on a daily basis therefore certain levels of sound are normal for the inhabitant of this place which PT1 describes positively. The other three participants come from much less

active localities that are not touristic. The Fleur de Lys part of Birkirkara is just a residential suburb of a bigger and active town centre. So social activity is much less in this part of the town and this is reflected in PT3's neutral attitude towards the local soundscape. This is once again highlighted when we see how three of the participants related to their soundscape as being clear with the exception of PT 3 who found it to be unclear which makes the soundscape more of a background detail. The residential characteristic of Fleur de Lys means that most activity takes place at home since there are no social attractions or activities in the area.

Table 5. Participant's relation to the sound categories.

	Speech / sound effect	Gas / solid	Impulsive / continuous	Short / long	High / low	Loud / soft	Informative / uninformative	Pleasant / displeasing	Clear / unclear
Valletta	3	3	3	3	1	1	1	1	1
Qormi	1	1	3	3	1	1	3	2	1
Birkirkara	3	1	1	2	2	2	1	2	3
Zejtun	3	1	1	1	1	1	3	3	1

The above table is representing graphically in Figure 3:

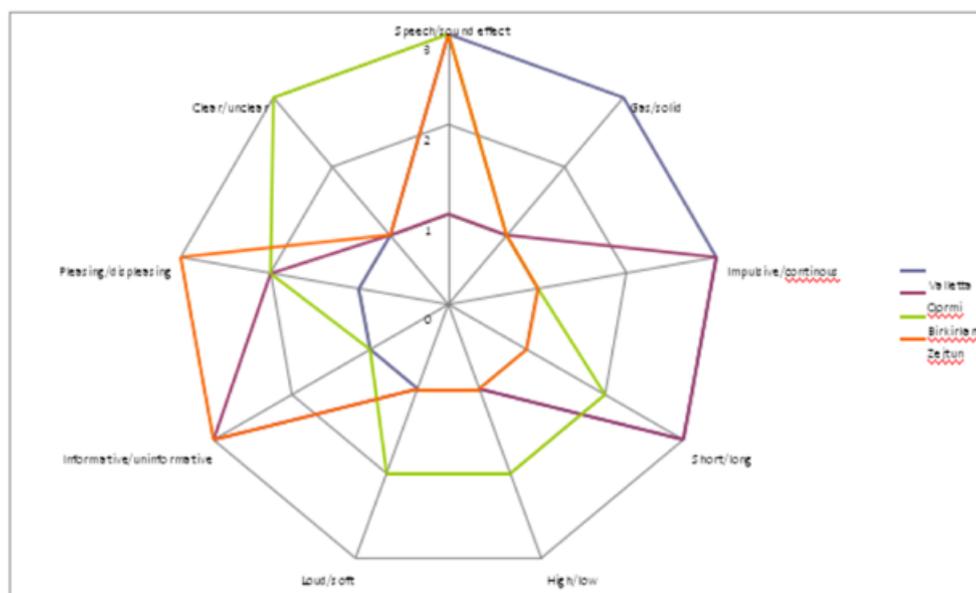


Figure 3. Participant's relation to the sound categories.

3.3. Valletta

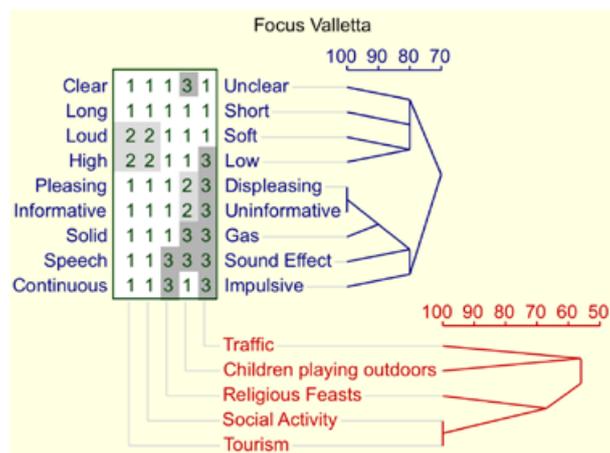
PT1 described how Valletta was a city where people spent a lot of time outdoors and how the city was alive and throbbing with social activity in the past. This all started to change when technology such as television became more widespread and people started to stay in a lot more. Later, the internet and the introduction of air conditioning easily enticed people to stay in doors. PT1, said that whenever there are social activities taking place the majority of attendees are foreigners. PT1 mentioned how Cruise liner tourism has increased over the years and on many days during the week the city is populated by thousands of tourists that come off their cruise ships in order to tour the city. PT1 describes that it is interesting to hear all the different languages from tourists and from the many foreigners that are moving to Valletta.

The commercial, central part of Valletta had become pedestrianised through a gradual process which reduced traffic in these parts of the city. A lot of the traffic in Valletta is related to commercial vehicles and vans working on diesel engines causing low frequencies that go right through windows and walls without difficulty.

The city hosts a number of churches belonging to different patron saints so religious feasts in Valletta are plentiful and well attended. Each feast has its brass band, its array of fireworks and the noise of people who follow the march and who later fill the numerous eating and drinking places in order to socialise. PT1 described how feasts have remained popular and that the attendance has hardly changed since 35 years ago.

PT1 commented that the sounds of the past cannot be relived in this day and age. The dynamic of the city has changed and life and peoples expectations have also changed drastically. With it the traditional sounds that have survived will continue to do so since these sounds belong to Maltese identity but the new sounds will obviously leave their influence.

Table 6. Valletta.



From table 6 we can see that PT1 does not make a distinction between Tourism and Social Activity. These two characteristics are given equal importance and attention. In fact PT1's recount of the Valletta soundscape puts more emphasis and highlighted more positivity on the sounds related to social activity. Even Religious feasts are closely tied to the social activity and tourism where all three elements range at around 65 to 70%. PT1 does not distinguish between Pleasing, displeasing, informative and uninformative sounds. If the sounds are pleasing they are also informative, if the sounds are neither informative nor uninformative then they are neither pleasing nor displeasing.

3.4. Qormi

Qormi is an old locality built by the knights of St John and is situated in central Malta. It is rich in traditional sounds. Like Valletta the people's outdoor activities, especially children playing outside have decreased heavily over the years. PT2 describes playing with about 50 other children on a daily basis on a summer evening. Traffic was a lot less of a hindrance at the time so it was safe for children to play outside. PT2 described how nowadays children are no longer seen playing on the streets. Another factor which has contributed to the demise of this activity is the fact that all the surrounding areas have been built up. 35 years ago the area surrounding PT2's habitat was undeveloped so many of the children could play in the big fields that separated Qormi from the neighbouring town of Zebbug. Nowadays that divide between the two places has disappeared and along with it traffic has increased substantially and children's outdoor play activity has completely disappeared from the towns streets. Again, as in the case of Valletta, PT2 described how modern technology has also contributed towards children staying in nowadays.

PT2 describes how street vendors used to visit the town in order to sell all sorts of goods and that each vendor had his own call or shout and that each one of them could be recognised due to this distinct articulation. This activity has decreased over the years and in certain cases the vendors no longer use their signature calls but have converted to using more modern techniques and have installed loudspeakers on their car roofs and come blazing down the street heralding their arrival and the goods that they are selling. PT2 described the traditional vendor's calls as being of a pleasant nature and stated how these sounds should be revived.

Qormi is close to the national horse racing grounds and due to this the city has a popular tradition related to horse racing and horse ownership. Qormi is one of the few towns were many people still trek down the main roads of the town with their horse and cart. The fre-

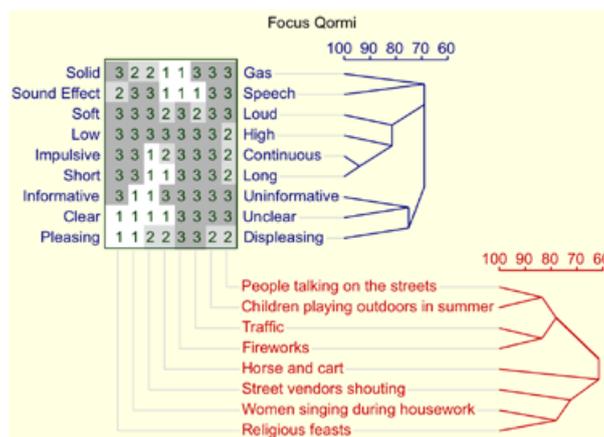
quency of this activity has reduced due to the increase in traffic but PT2 described how this activity is mostly popular on a Sunday morning.

In the past when the women of Qormi carried out their cleaning and housework chores they often sang. PT2 described how it was very common to hear women singing in the alley ways and that they would join in with each others song and how they used to respond each other with verses. The style of singing was described as being the folkloristic style of music known as ‘Ghana’ (Pronounced as ‘Ana’) where the verses are made up spontaneously. This practise has completely died out.

The religious feasts of Qormi are very well attended. PT2 describes the feasts as remaining popular. Fireworks are a major component in the celebrations. PT2 described this as being displeasing and that something should be done with regards to the noise and the exaggerated loudness of such an activity.

The final sound characteristic described by PT2 was related to people talking on the streets. The participants described how the people of Qormi are very loud when they talk and that it was common to hear people from outside and one could follow the conversation from inside ones house. The loudness of the conversation would lead many an outsider to believe that the two people were arguing but in most cases the people hosting the conversation would be pleasantly conversing with each other.

Table 7. Qormi.



According to table 7 PT2 shows a level of displeasure towards artificial sounds such as traffic and fireworks. In the case of the more social activities like PT2 has a neutral attitude towards these sounds as to whether they are pleasing or not. In fact most of the sounds

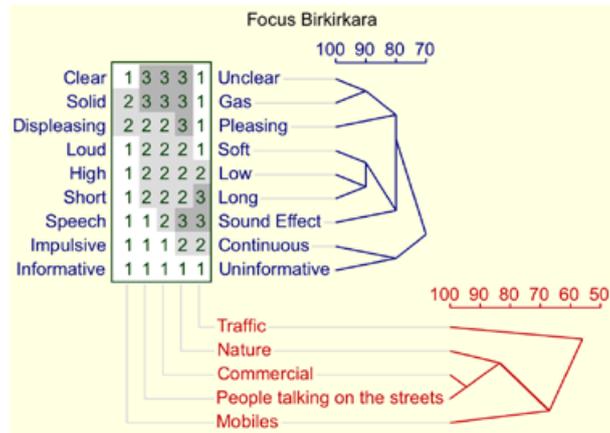
described by PT2 are also seen as uninformative. It is only in the case Street Vendors calling and the no longer heard sound of women singing during housework that PT2 finds or found these sounds to be informative and liquid in nature. It is the more traditional sounds that PT2 finds.

3.5. Birkirkara

Birkirkara has the largest population in Malta at approximately 21,800 people (Population Census 2011). It also has many small towns that are actually a part of it. PT3 comes from one of these smaller towns within Birkirkara known as 'Fleur de Lys'. It has its own Parish church but does not have a town square or a main hub of activity since these are to be found in the main centre of Birkirkara. Fleur de Lys is mainly a residential area and was mostly developed in the late eighties and early nineties. Therefore PT3 describes how prominent nature sounds were in the area 35 years ago. There were very few people living there so there weren't many children playing outside. The noise of traffic was also quite insignificant at the time. The town square was far from PT3's residence so the usual activities described in the other Maltese towns of Qormi and Zejtun did not go on in Fleur de Lys. In the late eighties the area became built up bit by bit and with it increased traffic, social and commercial activity. Still, as an area Fleur de Lys is relatively quiet up until this day. Even though there is a girl's catholic school hosting both junior and secondary students in the area and generates particular noise at particular times of the day, this noise is periodic and mainly concentrated in the early morning and the mid afternoon when the students arrive and leave school. An interesting observation highlighted by PT3 was attributed to the sound of mobile phones and how the environment is populated by the different ring tones of different phone models and how these sounds have become so common place in our present day soundscape. With regards to the religious feast of Fleur de Lys, PT3 described it as being a small parish with a small and low attended feast. The brass band still plays and the odd firework is still lit up and fired into the sky but it is not a proper fireworks display.

PT3 did insist that the lack of nature sounds in the area was displeasing and that something had to be done in order to revive these sounds. It would be difficult since the area has been completely built up and there are no longer any fields or places to plant trees or other vegetation. These sounds were described by PT3 as being pleasing in nature and that they helped a person to relax and to break away from the usual hurly burly of every day life.

Table 8. Birkirkara.



According to table 8, PT3 finds all the sounds to be informative. It is interesting to see that with most sounds PT3 is indifferent as to whether the sounds are actually pleasing or not. This could reflect that PT3 relates to urban sounds in a more factual way. It is then interesting to notice that 90% of the sounds described by PT3 are then perceived as being Unclear. Sounds are mostly perceived impulsively by the participant. It is only in the case of nature that we find pleasing reaction from PT3. With regards to the loudness, pitch or length of the sounds PT3 classifies most of the sounds (between 90 and 95%) in the middle range; it is only in the case of traffic that there are differences in the length and loudness of the sound when compared to the other three categories.

3.6. Zejtun

Zejtun is another old town built in the times of the Knights of St John. It is situated in the Southern parts of the island of Malta and is also an industrial town since the large industrial park of 'Bulebel' is situated just outside the town's limits.

Zejtun's soundscape shares many similarities with the Qormi Soundscape and again we find the calls of the street vendors being a prominent sound characteristic belonging to Zejtun. The outside sound of people talking loudly on the streets is also a shared sound between Qormi and Zejtun and PT4 also describes how loud their conversations are. Again we find a strong traditional following of the local religious feast, well attended and housing the usual activities that have been described with respect to the other towns but PT4 mentions one difference. In the past people used to light up hand held fireworks which used to make a very loud whistling sound, in fact the name in Maltese for these particular fireworks was

'Sufarell' which comes from the word 'sufara' which means 'Whistle'. These fireworks were dangerous and health and safety legislation phased them out and they are no longer used around the whole of Malta and Gozo.

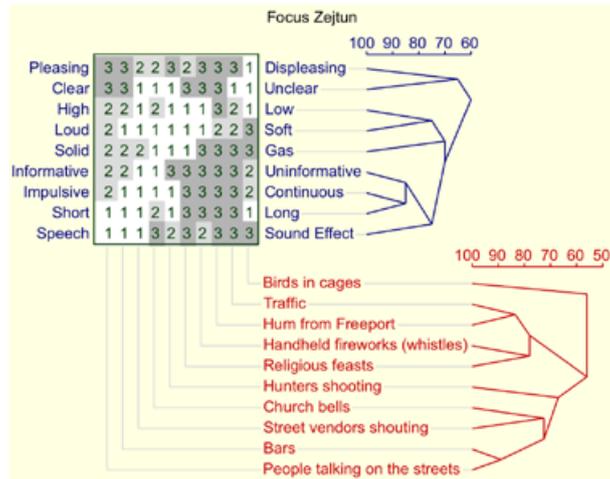
Living next to a church PT4 described the sounds of church bells and how these were heard at different times of the day and how the tunes changed according to the use of the bell. It is interesting how there was a time when the bell was damaged and it took a long time for the bell to be repaired and PT4 describes how one would still hear the church bells even though they were not ringing. A similar case is mentioned in Kanda in Japan by K.Torigoe (P.54, 2002) where she describes that people still heard the town bell after 22 years that it stopped ringing.

Living close to the town square PT4 described the numerous bars and how the sound of these places buzzes around the town square. Again, the level of dialogue is loud and could be quite a disturbance for people living around the area. One interesting characteristic is that some men who frequent these bars take birds in little cages with them and one can hear birds singing amidst the noise of the bar activity. People attending these bars spend most of their time outside due to the 'no indoor smoking' laws. Malta's climate is often pleasant and it is more of a pleasure to stay outside than spend time inside the bar.

Zejtun is also surrounded by country side so it is very common to hear the shots of hunters shooting at birds at various times of the year.

A unique sound described by PT4 in relation to the soundscape of Zejtun comes from the humming of the Freeport which is across from the town of Zejtun in the town of Birzebugia. PT4 describes how at a younger age this sound could not be heard at the participants, parents place but since moving to another home which is in line with the Freeport that is when the hum was noticed.

Table 9. Zejtun.



4. Discussion

The characteristics of the typical Maltese towns still possess many of the traditional components of their soundscapes. Technological advancements have changed attitudes over time. There is a level of social interaction which is still stronger in the older towns. These narrow streets gave these towns a sense of place (Malta Structure Plan P. 33, 1990).

Both PT2 and 4 spoke about the local dialect that is spoken in their respective towns. PT4 spoke about the fact that with members of family the local dialect is used between them but with Maltese people who lived outside of Zejtun the participant spoke standard Maltese. PT2 affirmed to hearing the local dialect being spoken outside in the street and how most locals used this dialect in their daily speech.

The change in the soundscape of these towns is related to the building and development of the surrounding countryside that was built up to such an extent that these towns now touch their neighbouring towns. Zejtun does still have a particular green belt around it. The outskirts of these towns are now enveloped within major roads with large volumes of traffic. The towns are now connected to the rest of the country and are part of the conveyor belt of modern day activity. It was similar practise in the EU to reduce traffic in city centres around

Europe but this has only transferred the problem to the outskirts (Raimbault & Dubois, 2005).

In newer areas like Fleur de Lys in Birkirkara we do not find the traditional aspects of the previously described sounds of the old localities. This is a more sterile environment in terms of traditional sound culture. These are the areas that were built in the post war period where practicality mattered, especially when the population was growing substantially. The focus was no longer the church, it had now become industry. The intriguing and the mysterious winding roads of the old village cores were not practical now that the motor car was becoming a more prominent factor in society (Malta Structure Plan P.33, 1990).

Social activities, places of gathering and the sense of community was not planned and again we see the intervention of the motor vehicle no longer restraining ones social activities to the town centre. The sound of time (Schafer PP. 56 & 56, 1994) with regards to the collective clock of the town centre is missing. This also breaks the ties with the past and breaks the clockwork of the society dancing around the rhythmical pulses of the town clock and the indicating church bells.

The sounds described by PT3 were unclear which means that the perception of the outdoor soundscape was only perceived from indoors. It is a muffled soundscape. The outside world is kept "outside". The inside world becomes a haven, a point where the life of an individual or family proceeds from and returns to on a daily basis. It is the centre piece, the fulcrum of their existence (Labelle PP.49 & 50, 2010). The unclear soundscape is still a detail for PT3 pertains to the information that the soundscape relates. The soundscape is a practical detail, a measurement of the outside world and its broader dimensions.

Valletta is different to the other towns that have been studied. Traditionally Valletta is considered to be focal point of activity on the island (Malta Structure Plan, P.62, 1990). During the day it buzzes with the sound of people on the streets. Valletta is a World Heritage City (Grand Harbour Local Plan, P.3, 2002). It is a living museum since a lot of the old buildings still adorn the cities visage and it is also a functioning place as it still carries out its role as the administrative fulcrum.

It has always been a European City housing the many different nations of the Knights of the order of St John in their different Auberge's. Like the home of the person who lives in the suburb whose home is centre point, Valletta reflects the same dimensions to the people of Malta. It is the place where Maltese come together in national events, concerts and activities related to Maltese identity.

Ironically, this busy and bustling city becomes quiet at night. It is only over the past few years that night time activity is starting to pick up and is being encouraged. This is such a change compared to the past where Valletta was even alive at night. During the Second

World War Valletta was badly bombarded and many people left the city. Its population continued to decrease after the war, by 1967 the population of Valletta went down by more than a third (Malta Structure Plan, P.46, 1990). In 2011 the population of the city is now approximately 5,700 whereas in 1901 the population was around 22, 800 (National Statistics Office Malta, 2011). This decrease in population has also brought about the decrease in social activity at night because few people are living in the city.

There is also the problem that the residents of Valletta have now become accustomed to having a quiet city at night and are resisting the new music and social activities that are being hosted in the city at night. PT1 spoke about the number of events that have been stopped by the police because of local residents complaining about the noise. PT1 specified how local people didn't complain about the noise of brass bands parading in the streets whenever there was one feast or another in the different parts of the city. They never complained about the exaggerated noise of fireworks. They hardly ever complained when Valletta city football club celebrated a football win and stayed up until 3am singing and dancing in the streets. Yet whenever there is a Jazz or a Rock band playing or some other form of live performance then the residents are up in arms. This reflects the fact that the residents are very much tied to their traditional sounds or their cultural identity sounds in the case of the football club. Any sounds which do not belong within the soundscape of Valletta are considered to be noise!

The local council, according to PT1, is looking into forming some kind of sound policy for the city that will allow and tolerate musical activities in certain parts of the place until certain times of the night without being hindered by police stopping the activity. The revival of the city at night has been a case of concern for many years and now that something is being done in order to arrange this situation there is much resistance and hostility towards such changes.

Another problem with Valletta is that the city lacks open spaces (Grand Harbour Local Plan, 2002) and they are not potentially utilised. The idea of having a central town square in Valletta does not apply. St. George's Square might be considered to be a main square. This square was renovated some years ago and was no longer used as a car park. A musical fountain was installed in this square and now people can enjoy the benefits of a wide open space.

Malta has the highest per capita car ownership levels in the EU. It amounts to 3 or more cars per household, equivalent to 19.4% (Transport Malta, 2013). Initiatives such as 'Cityhush' (<http://www.cityhush.org>) which is all about creating areas which only allow vehicles of low noise emissions to enter these designated areas. 'Hosannah' (<http://www.greener-cities.eu>) is a holistic and sustainable abatement of noise optimizing both natural and artificial

means. Its main aim is to reduce road and rail traffic noise in the outdoor environment. There is no railway system in Malta. These are just two current research programs in relation to traffic noise control that are being carried out by the EU and taken from the EEA technical report No4/2014 on the good practice guide on quiet areas.

Malta is currently trying to arrange its public transport services. Hybrid buses would be worth considering. When running on electric engine these buses would be quieter. Apart from changing the buses it would be worth considering a change in the design of bus stop shelters. Instead of glass, Perspex can be used. It is often used in recording studios in order to create a barrier around drum kits. The positioning of how people are sat down in a shelter can also act as an absorption technique.

The planting of certain trees, the use of certain plants and even the use of barriers can actually be introduced in order to reduce noise from these main roads. Effective sound barriers have to be made out of non porous material and having a minimum density of about 20Kg/m² (4 lb/ ft²). Materials used would include pre-cast concrete, steel, composition boards and wood (Paige, n.d.).

Products like 'Acoustifence' (http://www.acoustiblok.com/acoustical_fence.php) actually vibrate at frequencies ranging from 50Hz and below which turns the sound energy into mechanical movement and internal friction energy. Mounds of land can be created in order to absorb traffic noise and at the same time have a pleasing appearance.

In the narrower streets of Maltese localities other techniques of sound deflection can be put into effect. The angle of shop shutters can be slightly diagonal in order to push sound upwards away from the street. This can also be done with windows, balconies and shutters. Irregular surfaces can be integrated into design and aesthetically pleasing diffuser's can be made and placed on walls.

In the case of traffic noise in wider areas like town squares or public open spaces water fountains are effective for reducing traffic sound and the sound of water is a positive quality. Gentle water sounds of low frequency content and low flow rates that sound like natural streams are the most preferred (Galbrun & Ali, 2012). Fountains can also be aesthetic pleasing. Local councils might even want to consider reducing the speed limit in town squares and in roads leading to it. This will not only reduce sound levels of traffic but will also be a safety measure that will protect the people using the town square. Street furniture, plants and outdoor barriers can be used in order to absorb or diffuse sound.

Tree planting and the introduction of various plants could also encourage birds to flock in the town centres creating a particular sound field of bird song. It would be especially encouraging to use bird boxes in order to attract local bird life. Birds such as the 'Blue Rock

Thrush', known in Maltese as 'Il – Merill' which is the national bird of Malta is a cavity nester and so bird boxes are more practical at attracting such birds. There is an extensive list of birds that have been recorded in Malta, where about 392 species of birds have been recorded (<http://www.birdinginmalta.com/birdspecies.htm>).

The installation of certain sculptures (not sound sculptures) can also be used in order to absorb or diffuse sound.

The town square can be tuned in a particular way in order to give it a particular sound signature and it is with these above mentioned techniques that this can be achieved. There is also the option of using soundscape recordings in order to create a particular ambience or sense of place. In a study conducted by Turner & McGregor et al, (2003) it was proven how a sense of place can be favourably replicated when they reconstructed the sound of a computer centre elsewhere and obtained positive results. It would be interesting to create intimate sub spaces within the public space (Hellstrom et al. 2008), to create a particular ambience which immerses people into a soundscape consisting of sounds of nature for example. This would be more enhanced if visual cues, related to the soundscape, are introduced within the space since visual stimulus makes auditory perception more credible (Marry, 2011).

Local Culture Authorities and local councils could help fund Sound Sculptures. Sound Sculptures and overall enhancement of worn down areas could be utilised in alley ways too. In the Tongsul Alley in Odong-dong in Masan Hapoo district, Changwon City Korea has been turned into a 'Sound Alley'. Walls were painted, paving was replaced, lighting was enhanced and sensors were installed so that when people enter the alley they trigger off popular Korean songs (The Changwon Times, December 2013). These initiatives act as a platform for artists.

In Urban areas the sound of Air Conditioning units has become common place in Malta and this noise can easily be reduced by putting diffusers on them.

The tuning of a place is also something that needs to be taken into consideration by Urban Planners and architects, especially when planning whole areas for development. In order to do this Urban Planners have to add another dimension to the measurement of sound which is currently only being investigated by looking at maximum weighted noise levels. The Urban Planner has to take a more holistic approach and has to study the human experience and perception of noise (Raimbault & Dubious, 2005). The semantic meaning of sounds plays an important role in soundscape studies. The Urban Planner must also consider that there are no practical solutions which comply with the varied preference towards noise for all residents (De Ruiter P.32, 2005), sound tolerance is subjective. The difference between sound and noise is emotional (Davies et al. 2012). The practise of planning and design is

only emphasising the visual aspect and is not taking the other senses into consideration especially with regards to sound (Hedfors, 2003). Cogger & Marshall (2013), Hall et al. (2011) and Raimbault & Dubois (2005) all criticize the approach taken by Urban Planners to only tackle the noise problem by applying noise abatement and by only measuring noise using the A weighted Sound Pressure Level. This approach is too narrow. The semantic properties of sound and how they are perceived by people is an essential ingredient in designing an area with ecological sound tuning that will improve the quality of life of the people using that area for whatever purposes. Education is essential and does not only appeal to Urban Planners and architects. The general public has to be taught about the way they listen to their environment. That is why certain awareness campaigns have to be established. Sound walks around towns, the country side and other places of interest are an effective way of making people more aware of their sonic environment. Sonic Art, Sound Sculptures and workshops about different sonic environments all help in making people more aware of the sound field that they experience around them.

It would also be significant if traditional Maltese sounds are actually sponsored and preserved. Sponsorships would also be beneficial when it comes to fixing old church bells for example. Sponsorship also helps in the case of re-enactment of historical periods of Maltese history, for example, on a daily basis the re-enactment of the firing of the cannons at mid-day in the Grand Harbour from the 'Upper Barrakka' gardens in Valletta, which was a ritual performed during the times of British colonial rule in Malta has now become commonplace.

5. Conclusion

From this pilot study a picture of the Maltese Soundscape is already starting to form. Information obtained from the four participants, from the four different localities on Malta, sound characteristics pertaining to the traditional and the modern are becoming more evident and certain patterns are starting to show. It will be interesting to see how the results from further studies on the Maltese Soundscape will evolve in the future.

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