

# Sound and Performance in Public Archaeology: Examining the Benefits of Outdoor Learning with Creative Engagement at the Neolithic Site of Tinkinswood Burial Chamber, Vale of Glamorgan.

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This paper explores a community archaeology project which took place at Tinkinswood chambered tomb and its surrounding landscape in the Vale of Glamorgan, Wales. The project formed the school outreach element of the Tinkinswood Community Archaeology Project which included the excavation of three particular areas – two possible fallen burial chambers and the possible quarry for the 40-ton capstone used at Tinkinswood. The schools engaged in the project were the two closest primary schools to the sites: St Nicholas and Peterson-Super-Ely, in the Vale of Glamorgan. The children involved were given the chance to explore different ways of experiencing and interacting with the past through music and drama and by working outside of the school environment at Tinkinswood itself. The collection of interviews gathered reveal how the children perceive the Neolithic past, and especially about the way they felt more free, spontaneous, and natural through expressing ideas about the past at Tinkinswood itself, as opposed to being in the classroom. The results suggest that community archaeology can be used to ask big philosophical questions about mortality and religion, providing a new way to approach sensitive topics, without privileging one worldview over another.

Keywords: Neolithic; Tinkinswood; community archaeology; outreach; outdoor learning

## Introduction

Tinkinswood burial chamber lies just outside Cardiff and is around 6000 years old, dating to the Neolithic period (Darvill 2004; Savory 1950, 1965; Ward 1915, 1916). The site was originally excavated by antiquarians over 100 years ago, but has recently been revisited as part of a Cadw community archaeology excavation, which

encouraged local volunteer participation in all onsite work (Pannett 2012; Reynolds 2012; <http://tin-kinswoodarchaeology.wordpress.com/>). The latest excavations took place over a period of three weeks in October and early November 2011, and set out to investigate three possible sites close to the main chambered tomb, including the possible quarry for the massive Tinkinswood capstone, and two suspected fallen burial chambers. The sites are all located on gently sloping south-facing ground that rises up from the Severn Estuary towards the hills of the south Wales valleys. They are located 6.6km north of the modern coastline in a landscape of rolling pasture and woodlands. Scattered mudstone slabs dating to the Triassic period cover the surrounding landscape (Brooks, Miliorizos, and Hillier 1994), over a layer of Carboniferous limestone. This article will provide a summary of the new excavations and will then focus on the school outreach project which took place at the site of the Tinkinswood chambered tomb.

## A Brief Archaeological Introduction to Tinkinswood

Tinkinswood is one of the earliest Neolithic monuments in Wales, and one of the best preserved in Europe (Barrett 1988; Savory 1950). It is known as a Cotswold-Severn style tomb, since similar tombs are found around the river Severn (Burrow 2006; Ward 1915). The site is an impressive example of a single-cell tomb, used to house the remains of the dead. It was originally excavated by John Ward, who was the Keeper for Archaeology at the fledgling National Museum of Wales in 1914. Ward found the site in a state of disrepair as many of the stones used to construct the cairn had been stolen, along with the large slab which originally completed the stone chamber on the southern side. The report shows how Ward had discovered a large crack running through the western end of the large 40-ton cap-stone, commenting that the slab looked to be in imminent threat of collapse (Ward 1915). A brick pillar was inserted and the crack fixed before the excavations commenced.

Ward's excavations revealed that the monument was built entirely from locally sourced mudstone, limestone, and conglomerate, with the core of the long mound laid directly on the old ground surface. The monument appeared to have been divided into a series of bays or strips, with linear setting of uprights running across the width of the cairn.



Figure 1. Map showing location of Tinkinswood in the Vale of Glamorgan, Wales.  
(Drawn by Ffion Reynolds.)

These could have been structural to keep the cairn in shape (see Whittle and Benson 2006). Even so, in the case of Tinkinswood they do not appear substantial enough for this purpose. Alternatively, it has been argued that this practice reflects a division of labor, with families taking charge of filling their own compartment, making the building at Tinkinswood a communal activity. Another feature within the cairn is the evidence for a substantial slab-lined cist on the north side, which is still kept open to view. Ward had originally found the cist open, and suggests in his original report that it was a secondary burial, as a number of disarticulated human remains were found in and around the cist, along with a few fragmented animal bones, of pig, oxen, and sheep. These were the only human remains found during the original excavation in addition to those in and near the chamber. An alternative explanation is that the slab-lined cist was an area for excarnation before the final interring of the clean bones into the chamber itself.

The stone cairn at Tinkinswood was surrounded by a drystone revetment wall made from locally sourced quarried slabs of limestone built on the old ground surface. At the eastern end of the monument Ward excavated a deep forecourt, defined by “horns” running from either side of the chamber. Excavation of the forecourt area revealed that at least some of it had originally been paved, with a section of roughly laid slabs identified immediately outside the entrance passage. A small assemblage of human bone and around 100 sherds of coarse, round-based pottery were recovered from the forecourt. These finds are thought to be contemporary with the use of the monument, and the pottery is interpreted as having been deliberately smashed immediately outside the chamber entrance. The forecourt area could have provided a designated area for ceremony. This may indeed be the case as it is here that the original excavation revealed smashed pottery, some of which looked as though it had already been broken and fixed (Ward 1915). Burrow (2006) has argued that the forecourt areas at chambered tombs was an area in which ceremonies were performed, perhaps connected with the remembering of the dead (Cummings and Whittle 2004; Fowler 2003; Smith

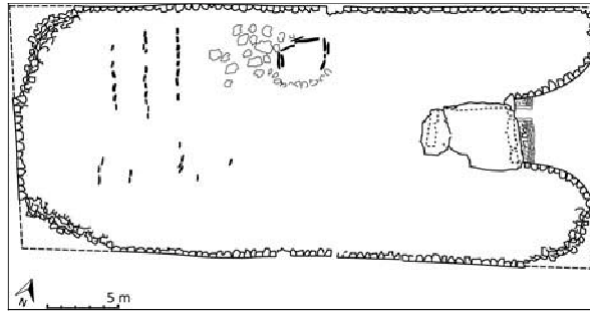


Figure 2. Plan of the excavation at Tinkinswood. It shows the drystone revetment wall; the stone cist on the northern side of the cairn; the upright drystone strips in the cairn; the impressive single cell chamber and capstone. (Drawn by Ffion Reynolds.)

and Brickley 2009; Thomas 1999). The forecourt is now displayed after Ward's reconstruction, with the rebuilt façade walls defined with the herringbone pattern.

The impressive single-cell chamber at Tinkinswood was located at the eastern end of the monument, originally entered through a short passage from the forecourt. The entrance was positioned at the northern join of the forecourt horn and led through a section of the cairn material. A limestone slab was excavated, lying on the floor in the passage, interpreted as the door slab, used to close the entrance between uses, and then as the blocking stone when the chamber was finally closed. The remains of 50 people were found inside the chamber: 16 men, 21 women, and eight children; sherds of course round-based pottery; sherds of beaker pottery, and an assemblage of animal bones. The latest program of dating conducted by Cardiff University focused on the human bone from Tinkinswood, which revealed that deposition was occurring around 3700 cal. BC, relatively early in the sequence of chambered tomb construction and use in south-west Wales (Cummings and Whittle 2004; Whittle and Wysocki 1998). Ward's discoveries both within the chamber and below the monument suggest that it was in use for a prolonged period of time, from the early Neolithic, as evidenced by the leaf-shaped arrowhead found on the old ground surface and the dates from the bones, to around 2500 BC as indicated by the recovery of beaker pottery from the chamber. The characteristic architecture of Tinkinswood suggests that people would have repeatedly visited the site. The bones of the buried people were not just kept in the tombs, but probably brought out into the light of day and perhaps used in ceremonies (see Barrett 1988). This might explain why skeletons were incomplete. In this sense, chambered tombs like Tinkinswood may have been the setting for rituals and performances involving the living as well as the dead (Whittle 1996, 247; Beckett and Robb 2006; Fowler 2003, 2010).

Other features in the landscape relate to the use of the Tinkinswood area. In 1939, two possible additional tomb sites close to the chambered tomb were identified, scheduled under the Ancients Monuments Act, and considered probable Neolithic sites until the new excavations took place. These included various piles of mudstone, similar to the material used for



Figure 3. The forecourt area and drystone revetment wall at Tinkinswood. Note the new reconstruction in herringbone pattern. (Cadw Crown Copyright.)

the large capstone, arranged in a way that suggested human activity and looked very much like collapsed burial chambers. Similarly, the area of woodland containing a mudstone outcrop, located 100m to the east of the Neolithic monument, has been identified as the possible source for the Tinkinswood capstone and is also a Scheduled Ancient Monument.

#### The Fallen Burial Chambers and the Quarry Site of Tinkinswood

As part of the new excavations, it was established that one of the possible fallen burial chambers was in fact nineteenth-century field clearance, with large mudstone slabs piled on top of a post-medieval field boundary. Excavation of the second possible fallen burial chamber revealed the disturbed and modest remains of a small Bronze Age burial mound. This comprised a stone-capped earthen mound that covered two possible burial pits. The mound had subsequently become the focus for secondary burial in the Roman period due to the discovery of a Roman coin dating to between AD 330 and 333 (Pannett 2012). During the nineteenth century it too had been used for dumping stones cleared from the fields, which probably led to the truncation of the northern side of the monument. The possible quarry produced no evidence to indicate that it had been exploited for stone during the Neolithic period. While the excavations proved that none of the sites were contemporary with the Neolithic burial chamber, the discovery of the Bronze Age barrow burial mound and the recovery of artifacts dated to the Mesolithic, Neolithic, Bronze Age, and Roman periods demonstrates that the Tinkinswood landscape has provided a focus for human activity for at least 6000 years.

#### The School Outreach Program

We now turn to explore the school outreach program of the Tinkinswood Community Archaeology Project. The core of the project results consist of the

children's experiences and reveal how they perceive the Neolithic past through actively engaging with the archaeology, artifacts, and the Neolithic monument itself. These children were from two local schools in the Vale of Glamorgan: St Nicholas Primary School and Peterson-Super-Ely Primary School. The project worked with two classes, with 30 and 31 children respectively taking part. The children were Year 5, which makes them Key Stage 2 pupils in terms of the National Curriculum in Wales, aged between 10 and 12 years old. The catchment areas for St Nicholas took in children from Communities First areas such as the Ely region of Cardiff. Only two pupils had ever visited Tinkinswood with their parents, and none had visited the nearby St Lythans burial chamber. As part of the project, pupils went behind the scenes at the National Museum in Cardiff, to explore the original archive and view human remains excavated by John Ward. The project brief was for the children to gather as much information as possible from the museum and site visits, pottery making workshops and music-making sessions at school and out at the site, in an effort to reconstruct their very own Neolithic ritual, and perform this live at Tinkinswood with an audience comprised of teachers, parents, and local community members.

The main tool used to inspire and recreate the Neolithic ritual with the school children was the use of music and sound. Many living cultures utilize sound as a primary way of performing associated ritual; however, it is only recently that pre-historians have seriously considered its importance (Bradley 2009; Gibson 1966; Schafer 1977; Pocock 1989, 1993; Rodaway 1994; Watson 2001). Two classes of monument which have received some attention are caves and passage tombs containing art and imagery (Scarre 1989; Watson 2001). Portable sound making objects have also been excavated and documented (Lund 1981; Megaw 1968, 1984; Purser 1997). The use of such instruments as bone flutes, rattles, and drums has been well documented through ethnographic, comparative, and illustrative research, and through research relating to their importance in semi-Nomadic and pastoral societies (Bloch 1974). Research has now been ongoing in the field of archaeological acoustics of megalithic monuments for some time (Devereux and Jahn 1996; Watson and Keating 1999, 2000). Watson (2001, 178) suggests that the use of sound in the interiors of prehistoric monuments may have been conducive to the creation of powerful acoustic experiences, especially for passage tombs in particular (see also Cook, Pajot, and Leuchter 2008). He explores the use of drumming and chanting which is used to facilitate shamanic journeying for the Tungus shamans of Siberia, aiding transformation between human:animal realms (Price 2001; Watson 2001). Drumming in particular is used as an aid for entering a shamanic altered state of consciousness (ASC) and used to communicate with the spirits of the dead (Reynolds 2013; Williams 2013). The use of drumming to change consciousness depends on the frequency of the beat, and when it matches a theta brain wave of four to eight cycles per second, an ASC can be achieved.

As part of the project, the authors set out to use a range of possible instruments used as part of transformative rituals around the world today, made from materials which would have been available to the Neolithic tomb

builders at Tinkinswood. It is difficult to say how instruments such as bone whistles and round drums may have been constructed in Wales as very few examples survive the ground conditions in archaeological contexts. The only plausible example from Wales is from the Neolithic chambered tomb at Penywyrlod, dating to c. 4000 BC. During the excavation a number of human remains were found along with a bone flute and some worked flint and stone (Britnell and Savory 1984; see also Megaw 1960). Another example is arguably the three bone pipe flutes found within a cist burial in Southern Ireland (Marshall 2010). No drums have been discovered in Wales, but this may be due to the organic nature of the materials used – namely animal skins and wood; materials which are very rare in the archaeological record for this period, but arguably a part of the soundscapes of Neolithic people. The instruments used for the project were bone flutes made from the leg bone of a sheep and round drums made by stretching cow rawhide around a wooden base. We also used animal skins as part of costumes for the performance, including red deer skins, goat skins, and cow skins. The performances at Tinkinswood burial chamber attempted to use sound to recreate a Neolithic ritual or ceremony. The forecourt area was used as the focus point, following evidence for its repeated use and the evidence for deliberately smashed pottery near the chamber's entrance (Ward 1915; Pannett 2012). The project set out to achieve a number of objectives that may have been harder to accomplish in a normal class-room setting. These included: experiencing the site with new eyes and ears, expanding the being of the viewer, allowing the music to enhance the imagination, and ultimately for the performance to be transformative. The aim in making the experience transformative could also be described as an attempt to deliberately change the learner's consciousness. This is not a radically new idea as nearly 80 years ago Dewey (1934, 10) claimed that music could help children to break through conventionalized and routine consciousness.

### Using Music to Change Mental State

The idea that people can experience different types of consciousness is of course well documented. Ever since psychology was in its infancy, towards the end of the nineteenth century and at the beginning of the twentieth century, psychologists have suggested humans are capable of multiple states of consciousness. James (1902, 228) suggested that "our normal waking consciousness, rational consciousness as we call it, is but one special type of consciousness, whilst all about it, parted from the flimsiest of screens, there lies potential forms of consciousness entirely different". Of course, this viewpoint only shines a light on the western scientific tradition and its efforts to research phenomena that other more ancient human cultures have seemingly not only been aware of, but have explored and used for thousands of years. Archaeologists and anthropologists alike have argued that the human impulse to create art has been around since Palaeolithic times and that this drive has inextricably been linked with ASCs (Aldhouse-Green and Aldhouse-Green 2005; Clarke and Clarke 2011;



Dutton 2009; Reynolds 2013; Williams 2010). It also seems that across all cultures and time periods music has played an essential role in deliberately changing consciousness. Aldridge and Facher (2009, 82) go as far as saying that making music is an active way of changing consciousness that is embodied, which is why dance has been such a powerful medium for cultural and personal expression.

There is also, of course, evidence suggesting that in their heyday, Neolithic tombs like Tinkinswood were used as acoustical chambers, deliberately designed to function as venues for musical performance (Devereux 2001; Till 2009; Watson and Keating 1999; Lewis-Williams and Pearce 2005). Devereux (2001, 89) argues that it is significant that the tombs “should repeatedly be found to be so ideally suitable for the human voice”. Could it be that the children were mirroring their ancestors by performing musical rituals at Tinkinswood, allowing them to change their consciousness? Could it be also that the project’s worth in terms of community and public archaeology is matched by its educational value? For instance, Csikszentmihalya’s (1990, 2002) theory of “Flow” has been championed by music education researchers such as Finney and Laurence (2013). When describing being in “Flow”, Csikszentmihalya outlines the importance of the loss of self-consciousness and the transformation of time. It would seem reasonable to suggest that these were two qualities that may have been experienced by Neolithic people during musical rituals at the burial chambers and other stone structures. As we come to examine the children’s responses to their own musical performances we shall see how they too seem to have experienced these conditions and that this helped their music-making and the overall experience in terms of its public engagement and educational value.

## Project Outline

The project covered a period of three days per school, with children from two different primary schools in south-east Wales visiting the same local Neolithic burial site and then creating and performing a Neolithic-style ceremony at the site. The performance involved music-making, dancing, listening, and the ceremonial breaking of pottery that had been created earlier by the pupils involved, replicating the archaeological evidence. This case study attempts to answer the following questions: How does making music at a Neolithic burial site affect the children’s music-making? How does making music at such a site compare to making music in school? Can creating a Neolithic-style ceremony help children to better imagine and understand the lives of their ancestors?

This research is perhaps a fitting approach to such Neolithic monuments because it is highly probable that one of their original purposes was to provide a venue where music would be used (Lewis-Williams and Pearce 2005; Watson 2001).

## Samples of the Children’s Responses during the Interviews

A selection of the children from both schools were interviewed in groups of no more than four. A total of 14 children were interviewed. The children were asked to show the interviewer their most memorable part of the performance on a large screen showing a film recording of their performance. They were then asked to explain why their chosen part was the most memorable part. This was followed by a series of open-ended questions related to their explanation.

Four main themes in the children's answers appear to have emerged. These are used below as headings.

### ***Being Outdoors at a Neolithic Site and Being without Boundaries***

*I think the atmosphere that made it different. The atmosphere of the thing, like you're doing a Neolithic thing, but you felt it as well. I felt like I was in Neolithic times so that created an atmosphere for me.*

- (a) It was easier to do like the music there (at the site) than here (in school) because if you messed up in school it wouldn't matter, but if you messed up there and everyone's watching it could put you off, but luckily it didn't and the music was really good. I think everyone enjoyed it.
- (b) When you were making music in school, it felt like you were just having a normal music lesson, but when you were there you felt like you were in it, so instead of just playing a beat you felt more [like you should] play it properly [because] even though it was mostly a lesson on how it's done you actually felt it wasn't, I think that affected our playing quite a lot
- (c) Obviously, in school were just like playing a beat like that, and then there we were actually like feeling it [because] in school you were just dah, dah, dah, dah like that and then in the actual performance it was better because everybody like really made an effort in it.
- (d) It feels different because that's actually where it was and when you're doing it in school it's not [the same], because our school is not in Neolithic times. Basically [the site has] the stones and we haven't got that.
- (e) It feels different because that's actually where it was and when you're doing it in school it's not [the same], because our school is not in Neolithic times. Basically [the site has] the stones and we haven't got that in our school so it wouldn't be anything like it.
- (f) I think the difference is basically feeling it. I don't think you could feel it in school because you weren't in a good place. In school you're in a nice place, but just feeling music is different and there you could feel the music.
- (g) Your surroundings made you think you're really there, like you're a real Neolithic.
- (h) I liked it because it like made it realistic but because everything was there it made you feel like you were Neolithic and the good thing was you could just dance and do

whatever, but you actually feel like you're there because it's a chamber like what they would have used.

- (i) It was really really fun because it didn't matter what other people thought of you because every-one else was doing it and it was like raaa! stuff like that and you had to pretend to be an animal so it felt really like really cool.
- (j) I like the bit here when it goes faster, it's getting faster and then it goes really fast. Like this bit it's getting faster and you can tell it's getting faster, and that really raises the tension it makes it sound more realistic, because the music's wild and stuff you can be wild you can like, it makes you want to feel like that, feel like the music plays or something.
- (k) When you listen to music you feel like dancing and it's a bit like that when all the music's going wild you want to act like wild and just bizarre, like that kind of feeling really.
- (l) It's as if the music is controlling you and it's telling you the dance you need to do. If you did street dance it tells you to do street dance. If it was more that kind of music.
- (m) The music really suits it, because the music is kind of wild and a bit weird and stuff it just really suits it because Neolithic times they wouldn't be like us they wouldn't have "normal" dances like we have they'd be kind of mad and once they turn into animals and stuff they can be free and mad and like if you're a wild animal they just want to go and just be wild.

The way that this apparent freedom influenced their performance shall be returned to when we come to examine the answers that reference the effect it had on their music making.

### *Empathy and Imagination*

In all of the interviews the children highlighted how performing the music and the ceremony at the site helped them to imagine what it must have felt like during Neolithic times.

- (a) I think the music was really good because it was like so Neolithic and so different from ours and it just sounded like you wanted to dance and do what they did basically.
- (b) Your surroundings made you think you're really there, like you're a real Neolithic person.
- (c) I liked it because it like made it realistic but because everything was there it made you feel like you were Neolithic and the good thing was you could just dance and do whatever, but you actually felt like you're there because it's a chamber like what they had.
- (d) It doesn't look like it's been rehearsed it looks like it's just from the heart of them, like their souls are animals and they're just going on along with them and acting oddly and the music is just coming from what they think, what we think.

In this response (above), made while viewing the recorded film of the performance, the interviewee explains how the performers do not look like they are pretending or trying to imitate Neolithic people in a staged performance. It is suggested that this is because "it's just from the heart of them". The importance of how it made them "feel" is also constantly referred to.

- (e) In this thing you don't really feel stupid because you don't really feel what you're doing, you just naturally do it, but then you're like oh my goodness I can't believe I just did that!
- (f) I felt like it was real, it felt like it was the kind of music they probably would have made in those days. It shows that we take from them. We sometimes play our music now like that. It shows all those years ago that's where we spent most of our time.
- (g) I think basically the difference was feeling it. I don't think you could feel it in school because you weren't in a good place. In school you're in a nice place, but just feeling music is different and there you could feel the music.
- (h) When we were making music in school, it felt like we were just having a normal music lesson, but when we were there, you felt like you were in it so instead of just playing a beat you felt more, like that, you play it properly because even though it was mostly a lesson on how it's done you actually felt it wasn't, I think that affected our playing quite a lot.

### *The Acoustics of the Location*

Some of the answers refer to the acoustics of the location also being significant. The different feeling seems to be experienced not only metaphysically, but also physically.

- (a) It was really like we were sending a message to the gods, because the music was going out every- where, it echoed.
- (b) You could feel like the rhythm with the drum when you're banging. Like when you face the drum down the music would like bounce off the wall. You could feel it. I thought it was really good there because when we were there the music sounded better because it bounced off the walls. When those big drums, the music, the sounds coming down outwards and towards the wall, it echoed. So even if you were up there [points to children sitting on wall on film] it would echo.
- (c) It wasn't the same because there it was all walls so you can feel the vibration and when you hit the drum you could feel the beat bouncing off the walls. When we done it in school it just sounded like a normal drum.

### *Improvisation and Being “In the Moment”*

Finally, a theme that consistently appears from the interviews is how the semi-improvisational nature of the performance was a positive experience for the pupils. The children seemed to have felt a heightened sense of being “in the moment”, and also that the license to improvise had a positive influence on their music and dance.

- (a) You just felt it was more free maybe because in school if you were playing with a group and you got a note wrong, you don't feel like you made a really big mistake you just felt like you'd gone with it and that what happens. You were a lot more relaxed when we were at the chamber when it was actually going on.
- (b) Sometimes when you're like in your group, in a band in school and you play a wrong note it affects it all, but because this is like more of a Neolithic song, obviously they played it wrong as well. A little bit wrong really because it sounded really good.
- (c) I think it's different because if you were in a theatre and you got something wrong it would be really disappointing and maybe the audience would know, know that it is wrong. Where this time the audience couldn't tell and they still enjoyed it so rather than feeling “oh I'm going to get something wrong and I'm really nervous”, you didn't feel so nervous you felt more relaxed because you knew if something went wrong it would look really natural.
- (d) I think it taught us to be a bit more free when you're dancing, not just like copy everyone else and if they freeze you've got to freeze because it lets you tell yourself what you want to do.
- (e) Basically you can do different because one music is like basic and it's just the same, but this

you can do different beats like boom boom boom boom boom like that and it just likes sounds better because you can do what you really want to do, because these normal songs now the tune and the rhythm is the same and stuff so with that you can just do what you want and anything with it and make up your own kind of music yourself.

- (f) The music really suits it, because the music is kind of wild and a bit weird and stuff it just really suits it because Neolithic times they wouldn't be like us they wouldn't have normal dances like we have they'd be kind of mad and once they turn into animals and stuff they can be free and mad and like if you're a wild animal they just want to go and just be wild.



Figure 4. Children from St Nicholas primary school performing their interpretation of a Neolithic ritual at Tinkinswood. (Photo: Ffion Reynolds.)

#### Comments on the Results

##### *Being Outdoors at a Neolithic Site and Being Without Boundaries*

This first heading under which the quotes were categorized clearly conforms with the philosophy of outdoor learning promoted by Waite (2011) and Sefton- Green (2006) who both advocate experiential, situated learning. The experience was not only hands-on (Waite 2011), but also the location of the site was the proper context for learning about how Neolithic people may have performed their ceremonies.

However, this situated understanding is not the end point of the educational benefits of the experience – the participants' sense of freedom is also echoed in the views of Waite (2001) and Sefton- Green (2006). As Waite (2011, 14) argues, "the value of working outside the classroom is in providing pupils with experiences that are different from those inside it ... we want them to learn to behave in ways that are different to class- room behavior". Clearly our participants felt that being at the Neolithic site allowed them to behave in a different way than they normally would in school.

One informant suggested that when we were making music in school, it felt like we were just having a normal music lesson, but when you there you felt like you were in it so instead of just playing a beat you felt more, like that, you play it properly because even though it was mostly a lesson on how it's done you actually felt it wasn't, I think

that affected our playing quite a lot.

Another informant suggests that it's just it's not normal basically, it's not like our normal thing we do, but it's just really nice to do something we don't really do every day, and it just makes it really interesting because while we're doing this we're actually really learning as well on what kind of stuff they had, which is great.

It is evident that the children felt that the freedom to behave differently improved their performance and the overall educational experience:

it doesn't really feel like we're learning when we're doing it in a fun way because usually when you think of learning you're sitting in a classroom just watching the teacher but then this time you did more interactive stuff, we were doing dancing and stuff really so it was a much better way of learning than just sitting on chairs and watching the teacher and listening to them.

### *Empathy and Imagination*

In the second category we see how many of the responses connect with the idea that their music-making allowed them to feel differently and imagine possibilities about the Neolithic past. One participant comments:

I liked it because it made it realistic but because everything was there it made you feel like you were Neolithic and the good thing was you could just dance and do whatever, but you actually feel like you're there because it's a chamber like what they would have.

This resonates clearly with the assertions of those music educationalists such as Swanwick (1988a, 1988b), Paynter and Aston (1970), Green (2005), Wright (2010), Finney and Laurence (2013) who claim that the act of making music can positively impact on and express a child's feelings.

The responses also ring true with their belief that making music can enhance other areas of learning. These quotes from the participants also reaffirm the assertions of archaeologists such as Devereux (2001) and Watson (2001) who claim that sound can bring "the world to life" and have "an intense emotive power" (p. 180).



### *The Acoustics of the Location*

The third category refers to the fact that the children consistently raise the significance of the acoustical environment caused by the Neolithic monument. The forecourt became a natural amplifier to the sounds created. It seems that the power of their music-making is literally and figuratively amplified by the acoustics of the site. When asked to explain the significance of the acoustical environment the children repeatedly highlight the way that literally feeling the vibration of their music adds to the authenticity of their experience and helps them to imagine being present during Neolithic times. One participant commented: "it sounded more Neolithic than inside or up on stage out there. It was really like we were sending a message to the gods, because the music was going out everywhere, it echoed."

This desire for authenticity echoes once again the views of children interviewed by Waite (2011, 17) who felt that "hands-on firsthand experience makes the learning more real and believable". This perceived authenticity also seems to have impacted on their enjoyment. The fact that the experience was enjoyable is important, not least because research has shown that enjoyment is connected with motivation (Hufton, Elliott, and Illushin 2002; Waite and Davis, 2006). It is also claimed that this positive feeling or atmosphere improved the quality of their music: "It sounded really cool because I've never really been good at music, it ends up like breaking, with the guitar ending up coming out of tune or something. So that was a good drum. It was better like that."

### *Improvisation and Being 'In the Moment'*

The final category is also closely associated with feeling and enjoyment. The respondents highlight how the improvisational nature of the music helps their performance and overall experience. One participant comments:

I think you put more effort in because you're just having such a fun time you just can't stop and if you do something wrong it's like whatever, you know, everyone still enjoys it and it makes it really interesting and stuff and different compared to the theatres we have.

This would seem to support research undertaken by Koutsoupidou and Hargreaves (2009), which suggests improvisation improves children's creativity in music composition. Research by Wright (2010) and Kanellopoulos (2010) also showed that when improvising students' and teacher's perceptions of themselves as musicians changed. In other words, the students felt more confident about their music-making and felt like artists or musicians even if they had relatively little previous formal musical training. This notion of improved confidence is repeated by many of the respondents in this project. An important reason for this improved confidence stemming from the improvisational nature of the music seems to be because the music does not have to be in any well-known style:

[I]t just likes sounds better because you can do what you really want to do, because these normal songs now the tune and the rhythm is the same and stuff so with that

you can just do what you want and anything with it and make up your own kind of music yourself.

Throughout the quotes there appears to reverberate a recurring theme. That is, that the experience itself was where the real value was to be had. The activities were autotelic. Enjoyment was experienced through the act of making music itself. This is in keeping with Elliott's (1995, 124) praxial theory of music education that musical experiences are not rightly conceived of as aesthetic experiences, they are more valuable in practical terms. Music-makers and listeners achieve self-growth, self-knowledge, and enjoyment in the constructive actions of making musical sounds and listening. The participants' descriptions of their experiences also resonate with Csikszentmihalyi's (2002) theory of flow. They appear to have been completely immersed in their performance. As one of the participants describes:

We were in the music, it's what I like about the music that we had here was the fact it went with it, and yeah it expresses your feelings and it doesn't sound like that was made up it sounds like everybody was hanging on to the rhythm that was good for that kind of day, for that kind of ceremony they were just doing their own rhythm and it was like they had actually gone into their music as if they just got it off by heart from the feelings that they had.

In examining the children's responses more closely, they all appear to show that the experience itself seems to have involved a repeating cycle. This cycle consists of factors that constantly feed each other. These include:

- (1) The site (the location and how the participants feel about it) transforms the participants' music-making. The participants' music-making transforms the way the participants feel.
- (2) The effect of the music (the way the participants feel) transforms the way the participants feel about the site.
- (3) The site transforms the participants' music-making.

## Discussion and Conclusions

As archaeologists, we are often working with a silent, distant past. Our knowledge of that distant past rarely includes an understanding or awareness of its soundscape. Using, handling objects, costumes, art, music, and archaeology we can in a certain sense "reconstruct" that past, bringing it alive in visual format. Museums and archaeologists have recently begun to focus greater attention on auditory considerations. Acoustic archaeology and auditory archaeology are growing in popularity and significance. Innovations in technology have meant that organized sound now exists within the walls of our museums in various situations. Advances in neuroscience and academic research support the belief that multi-sensory experiences improve learning. The value of creativity and problem-solving is at the forefront of educational theory throughout the

world. Emotional intelligence, collaboration, project development, original and lateral thinking, multiple learning styles, and flexibility are the buzzwords of today's impact requirements. Contemporary evidence from the fields of neuroscience, psychology, and education has highlighted the power of music on human development. Evidence such as this has provoked changes to the National Curriculum in Wales so that experiential learning, emotional intelligence, multiple learning styles, thinking skills, and outdoor learning have now come to the fore. Educational projects that involve music-making at prehistoric sites situate themselves at the nexus between current anthropological research in the field and current research in music education, and creative development with children.

The use of performance and sound to reconstruct the Neolithic use of Tinkinswood was extremely revealing. The forecourt area of the chamber resulted in echoing sounds and was a natural amplifier for the drumming and chanting involved in the performances. The children expressed that they had felt a transformative element to their performance – and the results suggest that using sound to inspire creative responses in children is a powerful one. While it isn't possible to say that the performed music is the same as the music in the distant past, what we can say is that these sites are once more resonating with the sound of music, and that the local children and the wider community are aware of their contribution to the ongoing history of these places. By taking children out of normal formal learning environments and providing direct access to a remote past can also help them discover their own place in the present. It can open up questions about religion and philosophy, without privileging one religion or outlook over another, ultimately helping to shape the ways that these children view the past and their relation to it in the future.

This kind of research holds the potential to point the way forward for further work at Neolithic and, indeed, prehistoric sites.

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