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THE SPOIL PROJECT. ASSESSING THE RATE OF EXCAVATORS' ACCIDENTAL CERAMIC DISCARD AT THE ARCHAEOLOGICAL SITE OF SIPONTO

1. Introduction

Siponto (lat. *Sipontum*) is a coastal archaeological site located in Northern Apulia (Italy) at the foot of the Gargano mountain. The Roman colony was founded in 194 BCE, although the area has been occupied since the Middle Bronze Age (Mazzei 1999; Schiavariello 2019). The city was later abandoned around the 14th c. ca, with the foundation of the nearby city of Manfredonia (Laganara 2011). In September-October 2022 the site was excavated by the Universities of Bari (Dipartimento di Ricerca e Innovazione Umanistica) and Foggia (Dipartimento di Studi Umanistici), with students working simultaneously on four trenches. The excavation campaign at Siponto has educational purposes, with the aim of training university students in archaeological fieldwork methodologies[1]. This paper aims to quantify the rate of accidental discard of archaeological material during the excavation process in two of the four trenches:

– Trench I: an area of 20×20 m, with excavators working in a single room of 7,6×6,5 m. The trench is located in the NE corner of a rectangular block of the former Roman city, where a medieval building (11th c. ca) has been discovered.
– Trench IV: an area of 15×25 m. The trench is located in the southern area of the Roman and medieval city, where a district that includes a probable public building is under investigation.

The first aim of this research was to provide educators with more information about the pottery that might be accidentally most discarded and subsequently improve future tutorials on ceramic classification. The second objective was to track how much information is lost during excavation because of excavator bias. As Graesch (2009) points out, there are still few archaeological reports that consider inter-operator bias in the collection of archaeological data. The assumption is that the sample collected in the field is by default representative of the entire population. More work on the issue of inter-operator bias has been published for archaeological surveys, but rarely precautionary measures are put into practice by team leaders because of time

[1] The archaeological campaign has been directed by professors Roberto Goffredo and Maria Turchiano (University of Foggia - Dipartimento di Studi Umanistici), and Giuliano Volpe (Università di Bari - Dipartimento di Ricerca e Innovazione Umanistica) in accordance with the Ministero della Cultura - Soprintendenza Archeologia Belle Arti e Paesaggio for the provinces of Foggia and Barletta-Andria-Trani and with the Direzione Regionale Musei Puglia - Parco Archeologico di Siponto.

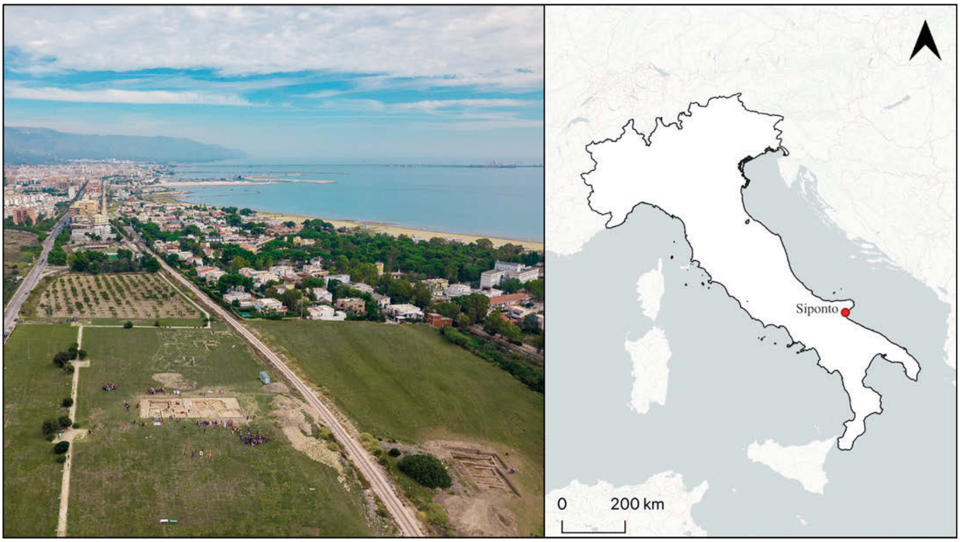

Fig. 1 – In the picture, the archaeological site of Siponto, Italy with Trench I (in the middle) and Trench IV (bottom-right). On the right side, the location of Siponto in Italy (images by the Author).

and resource constraints (Beck, Jones 1989; Hawkins *et al.* 2003). Personal preferences or arbitrary decisions of excavators can result in misleading interpretations and reconstructions of on- and off-site dynamics and temporal trends. Considering the growth of quantitative studies in Italian archaeology, a more rigorous approach is required during the data acquisition phase (Fig. 1).

Studying the discard variability and bias is fundamental, as post-excavation quantification of archaeological materials can be distorted by several factors occurring at the time of the collection. For instance, it can be useful to determine which part of a vessel is mostly discarded as it might be the part most subject to fragmentation or harder to recognise. If an archaeological artefact is highly present in a site, can it be the result of a personal preference or easiness of recognition by the excavator? As Dibble *et al.* (2005, 317) pointed out: «[…] all excavations suffer from bias because it is impossible to collect every object originally present in a site».

Although this is true, it is nonetheless possible to direct the excavators' attention to aspects that might impact their practice of collecting archaeological material in the field. The authors recognised how the early 20th-century excavation at La Ferrassie (France) had negatively impacted their understanding of the Mousterian lithic industry, as the original excavators only retained large, retouched stone artefacts which represented only 2-3% of the original assemblage (Dibble *et al.* 2018).

The choice of a random approach in the collection of samples for this research is due to its preliminary nature, thus studying the behaviour of every operator on the field was not possible. Even if other types of archaeological material are considered, this study mainly focuses on ceramics. Bones, metals, glasses and small finds are reported as a presence/absence variable. The following section will provide an overview of the methodology used in this paper, which discusses the variables and statistical analyses performed on the dataset. The third section will present the results of this study, suggesting how different soils, weather conditions, time and sherds colours influence the accidental discard rate of ceramics (and other archaeological materials) on the spoil heap. The last section discusses these results, including final remarks.

2. Methodology

This experiment was conducted in two trenches at the archaeological site of Siponto, where 32 students at different levels of university education were working in September-October 2022. Most of the students were enrolled in a BA course (57%), others were starting or completing a MA degree (28%) and 14% of the excavators were PhD students. The students were instructed to dump their spoil onto a designated test heap several times a day for 17 working days. The experiment was conducted on two separate trenches, resulting in the creation of two separate test heaps for this purpose. The test heaps were located away from the general spoil heap to prevent any mixture of soil. To further ensure that the soil from the test heap remained separate from previous samplings, the area of the test heap was cleaned daily before excavation began and samples were collected immediately after the soil was discarded. To ensure randomness in the investigation, soil was collected from every context excavated during each day of fieldwork, excluding stratigraphic units that contained large stones (such as collapse layers) that would have been difficult to sieve. The collection of material may be less accurate in these layers and the spoil was deposited separately on the general spoil heap and not sampled.

The samples retrieved from the test heaps ranged in size between 8 kg and 18 kg, with an average of 10.88 kg (SD = 1.82). Each bucket has been weighted using a portable luggage scale. To create a completely normal excavation environment, students were not aware of the experiment, although each student was instructed to save any piece of pottery (and other archaeological material) before dumping the soil. Whenever possible, students who had finished working on their context were placed in other areas of the excavation trench, to minimise the individual impact on the ceramic collection during the phases of shovelling, trowelling, wheelbarrow check, and layer cleaning. In addition, students took turns in carrying out these tasks. After the collection, samples have been air sieved with a mesh of 2 mm (Fig. 2a). At the end of

Fig. 2 – Sieving and recording phase: a) the sieve used for the experiment; b) examples of sherds collected during excavation.

the experiment, 59 samples have been collected, totalling 642 kgs. The total number of sherds collected after sieving was 1086.

3. The variables

The sherds have been counted and classified at the moment of sampling, in a spreadsheet that included several variables listed below.

3.1 *Date and weather conditions*

The variables related to time and weather were included to keep track of how many samples were collected daily and how the time and weather conditions affected sherds recognition:

– date: date of the spoil dump and collection of the sample, in the format day/month/year;
– time: hour in which the sample has been collected. The sampling occurred as close in time as possible to the hour of the dump;
– weather conditions: weather conditions under which the spoil has been dumped on the heap. This field was filled with two values, sunny or cloudy. Rain has not been included as the excavation stopped whenever the rain was too heavy.

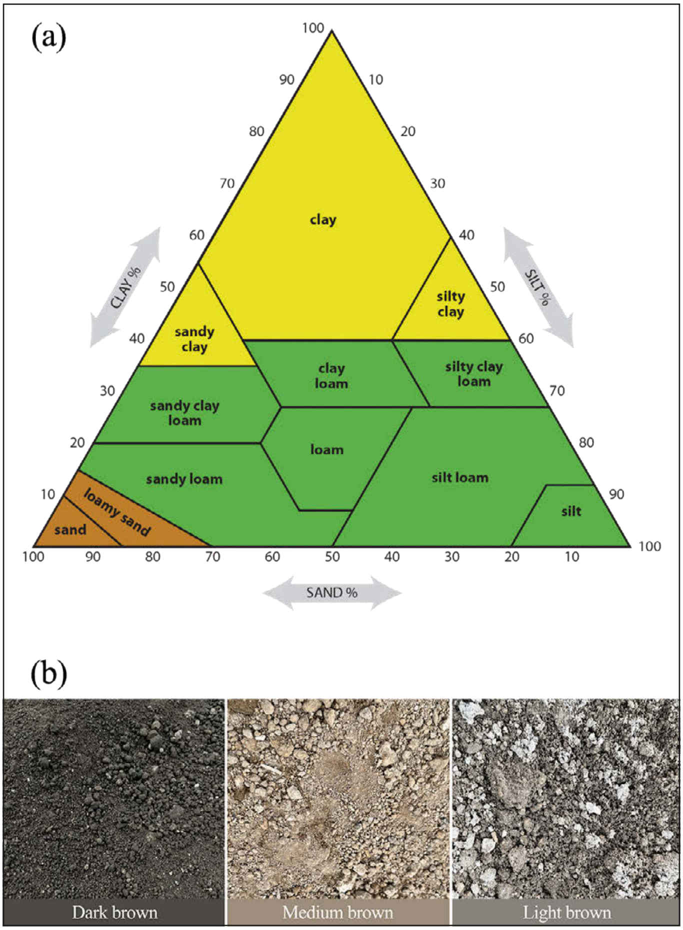

Fig. 3 – Soil types and colours. a) The archaeological soil triangle. [Legend] brown = coarse-textured soils, green = medium textured soils, yellow = fine-textured soils (from Ritchey *et al.* 2015); b) examples of soil colours of the samples collected.

3.2 *Sample attributes*

The sample variables describe the characteristics of the soil collected for each sample:

– sample: unique progressive number identifying the collected sample;
– sample_size: sample size measured in kg;
– sample_composition: composition of the sample collected (Fig. 3a), recognised by touch (Ritchey *et al.* 2015):

– sand: large particle size, with a low water-holding capacity and large porosity. It is light brown;
– silt: sediment material with an intermediate size between sand and clay and a dust-like texture. It has a good water-holding capacity and medium porosity. It is generally greyish in colour;
– clay: very fine particle size, with a high water-holding capacity and very low porosity. It is reddish-brown and can be dark brown when more loamy. Clay is heavy and dense. When wet, it is sticky and plastic. Despite clay was considered as a variable, it has been excluded from this research as the layers excavated did not provide adequate amounts of this soil type;
– loam: soil composed of sand, silt and clay in variable quantities.

– sample_colour: colour of the soil sample collected (Fig. 3b). This field was filled with three values: dark brown, medium brown, light brown;
– humidity: humidity of the soil sample collected (dry or wet).

3.3 *Sherds attributes*

The variables to store information concerning the sherds were:

– sherds_id: the absolute count of identified sherds in each sample;
– 0_2cm, 2_4cm, 4_6cm, 6_8cm, 8_10cm, over_10cm: ranges of sizes of the sherds collected after sieving. The field was filled with the counts of sherds in each range per bucket;
– grey, yellow, orange, red, green, black, multicoloured: ranges of colours of the sherds collected after sieving. The field was filled with the counts of sherds in each range per bucket;
– rim, neck, wall, base, handle: ranges of body parts of the sherds collected after sieving. The field was filled with the counts of sherds in each range per bucket.

3.4 *Presence of other archaeological material*

Extra fields were created to list the presence or absence of other archaeological materials retrieved after sieving the sample. Since the experiment focused on pottery, the fields were filled with presence/absence values – bones_present, metal_present, glass_present, and small_find. Whenever a small find was retrieved (e.g. a coin), it was reported in the notes.

4. Exploratory data analysis

The variables introduced in the previous section were used to explore the dataset and assess which are the factors influencing the accidental discard of pottery on the spoil heap. Additionally, the ratio of lost diagnostic sherds (pieces that enable the identification of certain characteristics of the original vase) to the sample weight was calculated to ensure comparability within each sample. This ratio was used for several of the variable groups mentioned in the previous section.

As measures of central tendency (mean, median) and statistical hypothesis testing are commonly used in archaeology (Drennan 2010), this section will focus on explaining Correspondence analysis and linear regression. All the calculations were performed using the statistical software R.

4.1 *Correspondence analysis*

Correspondence analysis (henceforth CA) is a dimensionality reduction technique that can be applied to contingency tables of categorical variables. CA maximises the degree of correspondence between rows and columns (i.e. observations and variables). The distance matrix used to perform the analysis is obtained from the chi-square distance between the rows and columns profiles. An in-depth methodological breakdown of CA is beyond the scope of this text, and readers can refer to Greenacre (2021). The algorithm tends to place larger abundances towards the centre of the diagonal, and small or zero values away from the diagonal, which is why outliers were removed prior to the analysis. CAs are usually visualised through biplots showing the two axes that explain the most variance in the dataset. Since the horizontal axis explains the most variance, the horizontal distances between points are more important than the vertical ones. As the distances between points are chi-squared distances, for the interpretation of the results row points closer together are more similar, and the same logic applies to column points. However, one should be careful when interpreting distances between row and column points, as they follow precise rules:

– If the angle formed by the lines connecting the row and column labels to the origin is small, the association is strong.
– If the angle is 90°, there is no association.
– If the angle is near 180°, the association is negative.
– Points away from the origin and the edges are the most informative, as they might represent a better ordination.

The R implementation of CA used in this paper is the function CA() included in the package FactoMineR (Lê *et al.* 2008). CA was applied to assess the influence of the colour of the soil on the discard of certain colours of sherds.

4.2 *Linear regression*

Linear regression is a useful approach when studying the relationship between an independent (X) and a dependent variable (Y). It is called linear as it is represented by a line on a scatterplot. The line is straight when $Y = aX$ and the slope is determined by the coefficient a. The easiest case to plot is $a = 1$, so that will be equal to any value of X. If the line does not pass from the origin of the graph, an additional constant, the intercept (b) is added to the equation: $Y = aX + b$. The logic behind linear regression is to predict the behaviour of a variable from known sets of values. The accuracy of the behaviour of the line can also be studied, but a thorough explanation of residuals and best-fit straight lines is beyond the scope of this paper. The reader can refer to texts as Shennan (1997) and Drennan (2010).

For this paper, linear regression was used to assess if time variables had an influence on the accidental discard rate of ceramic. The R function lm() was used both to look at the relationship between the hour of the day and the ratio of discarded pottery and between the date and the discard ratio. For the regressions both diagnostic and non-diagnostic sherds have been considered.

5. Results

This section presents the results of the analysis previously described. Sherds have been discarded mostly in the range of 0-2 cm (70.44%) (Tab. 1a), with a mean rate of diagnostic pieces retrieved from the samples of 30%.

Sherd size	%
0-2 cm	70.44
2-4 cm	20.62
4-6 cm	7.36
6-8 cm	1.38
8-10 cm	0.18

a

Sherd color	Quantity	%
Grey	376	34.5
Yellow	240	22
Orange	337	31
Red	59	5.4
Black	53	4.8
Multicolored	18	1.6

b

Tab. 1a-b – a) Size ranges of discarded sherds; b) colors of discarded sherds.

5.1 *Influence of the colour of the soil on the sherds discarded*

Analysis of the data allowed inferences to be drawn about the colours of the sherds (Tab. 1b) most closely related to each other and of the colours of the sherds most frequently correlated with different soil colours. The CA in Fig. 4 reveals a strong association between multicoloured ceramics and light brown soils. In the layers excavated so far in the trenches under examination, the polychrome vessels are mostly 13th century glazed productions typical of the area including the so-called RMR (ramina, manganese, rosso = copper/manganese/red) and protomaiolica types (Cuomo di Caprio 2007; De Venuto *et al*. 2015; Giorgio 2016; Valenzano 2018). The creamy colour of the fabric of these types may have enhanced the potential for sherds to be lost in light-coloured soils. However, the polychrome pieces retrieved from the samples were scarce (mean = 1.57%), possibly suggesting a good degree

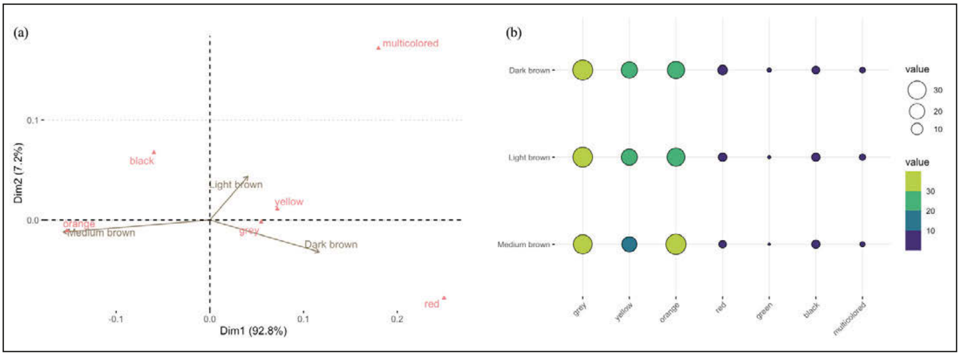

Fig. 4 – Plots showing the influence of the colour of the soil on the colour of the most discarded sherds: a) CA biplot; b) baloonplot showing the association between sherds and soil colours.

of recognition by the students. The graph also shows how red sherds can be hard to recognize when excavating dark brown soils, whereas the association with orange vessels is negative (i.e. these sherds are possibly easier to be recognised when the soil is dark). Grey and yellow sherds have similar discard rates, being the most frequently discarded, and slightly more easily found in light brown soils. Another strong link was found between medium brown soils and orange sherds. Black sherds are not strongly associated with any soil colour. Medium brown and dark brown soils are the most negatively correlated colours, as they are associated with the complete range of sherds colours.

5.2 *Influence of humidity, soil composition and weather conditions on the discard rate*

Weather conditions can impact excavators' ability to visually identify sherds before discharging the soil. The boxplots in Fig. 5 illustrate how in cloudy conditions it is much easier to lose diagnostic fragments when digging in wet soil than in dry soil. Conversely, in sunny conditions, the number of diagnostic sherds lost is higher in dry soils. The only exception was found for sandy soils, under sunny conditions the number of lost fragments is higher in wet soils. In general, the highest number of diagnostic sherds was lost in silty soils (ratio = 0.53), followed by loamy soils (ratio = 0.50) and sandy soils (ratio = 0.43).

In addition to soil colour, the humidity of the soil also affects the visibility of certain colours of sherds. From the barplots in Fig. 6, it is evident how grey, orange and yellow sherds are the most discarded. At Siponto, these colours mostly refer to common-ware pottery. In dry samples, the most discarded sherds are grey (>40%), while in wet samples orange sherds are prevalent (also >40%). This difference can be ascribed to differences in the colour of

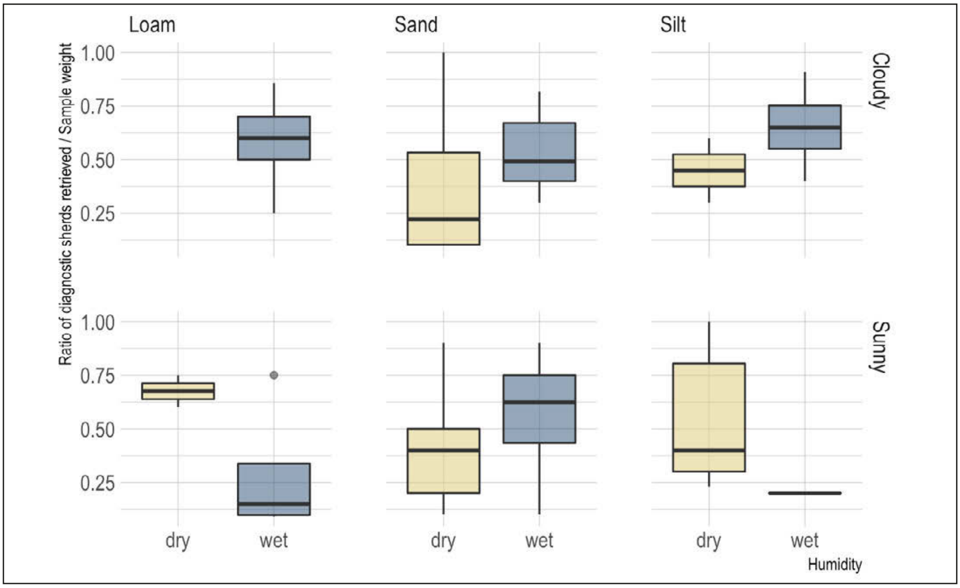

Fig. 5 – The boxplots show the diagnostic discarded sherds from dry and wet soil samples, in cloudy and sunny conditions. The results are plotted for different types of soils, although loamy soils did not provide any dry sample.

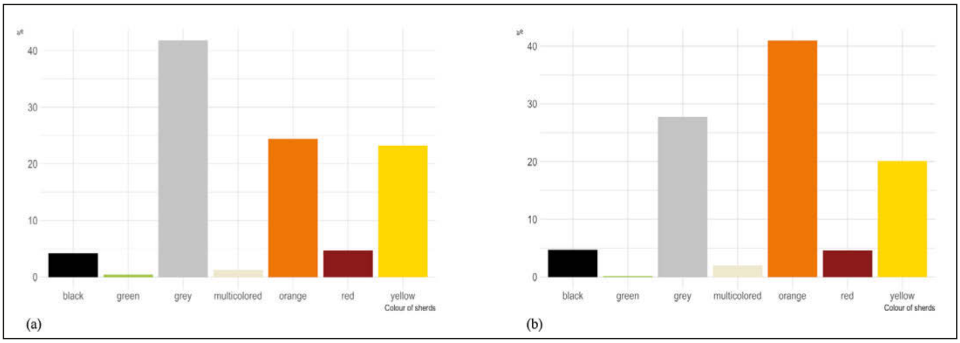

Fig. 6 – Barplots showing the percentage of the colours of the sherds retrieved both in dry and wet samples: a) dry samples; b) wet samples.

wet and dry soils. Fig. 7 shows how wet soils are mostly dark and medium brown, whereas dry soils are mostly light brown.

Sunny or cloudy conditions can also impact the visual recognition of the colour of the sherds. Grey, orange and yellow samples (common-ware pottery) are mostly discarded in both weather conditions, whilst orange sherds on cloudy

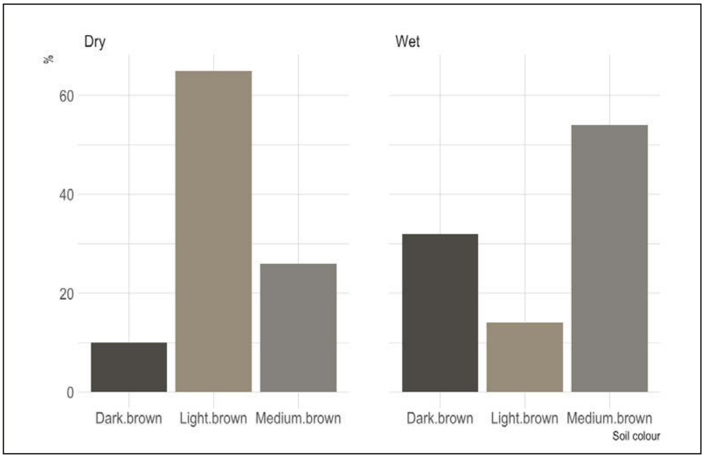

Fig. 7 – Barplots showing the percentage of colour of samples in dry/wet conditions.

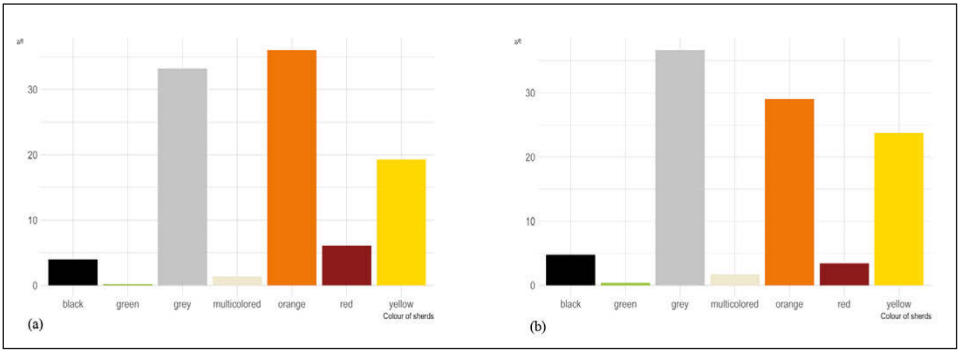

Fig. 8 – Barplots showing the percentage of the colours of the sherds retrieved under cloudy or sunny weather conditions: a) cloudy; b) sunny.

days and grey sherds on sunny days (Fig. 8). Overall, more diagnostic sherds are lost in cloudy conditions (ratio = 0.52) rather than sunny weather (ratio = 0.44).

5.3 *Diagnostic sherds*

The vessel body parts recorded during the sampling are rim, neck, wall, base, and handle. Recording which parts have been identified was important for two reasons. The first was to understand which vessel parts are less likely to be identified by students. Secondly, this data could be compared to the amount of discarded non-diagnostic pieces. Only 30% of the sherds recovered were diagnostic. The remaining 70% of the sherds could not be visually attributed to any part of the vase, and the discard might have been a deliberate choice. The most discarded body part in the dataset is the wall, which reports a median value of 60%. The part that was best recognised by students was the base (median = 17%).

5.4 *Influence of time on the discard rate*

This experiment also considered time as a factor in the discard rate of sherds in the spoil heap. Three were the main questions behind the choice of this variable:

1. Does the day of excavation have an influence on the discard rate?
2. Does the hour of the day have an influence on the number of sherds retrieved from the samples?
3. Do students get better at evaluating diagnostic ceramic sherds?

The reason for the first two questions was to evaluate if tiredness can be a significant factor impacting on the discard of archaeological material, assuming that the total number of samples was comparable. To answer the first question, I first calculated the ratio between the total number of sherds retrieved in a single sample and the weight of the sample, to allow comparability. After, I used the R function lm() to calculate the linear regression between the sherds ratio and the excavation day. The p-value was > 0.05, thus rejecting the hypothesis of students accidentally (or intentionally) discarding more sherds in the last days of excavation. In order to check if the time of the day influenced the discard rate (question 2), the samples were first divided into two categories: morning (8 AM-1 PM) and afternoon (1 PM-5 PM). After subsetting the dataset, the means of the discard ratio (calculated as above) were computed for both categories.

Time	Mean	Normality (Shapiro-Wilk)
Morning	1.66	Normal distribution, $p = 0.30$
Afternoon	1.73	Normal distribution, $p = 0.26$

Tab. 2 – Means of the morning and afternoon ratio of sherds discard in the samples.

The means show a slight increase in the discard rate in the time between the lunch break and the end of the working day. The normality of the distributions of morning and afternoon samples was calculated using the Shapiro-Wilk test (Yazici, Yolacan 2007), with a p-value higher than >0.05. Since the samples had normal distributions and the F-test showed that there is no significant difference between the two variances (p = 0.89), the means of the two categories were compared using the Welch Two Sample t-test (Welch 1947).

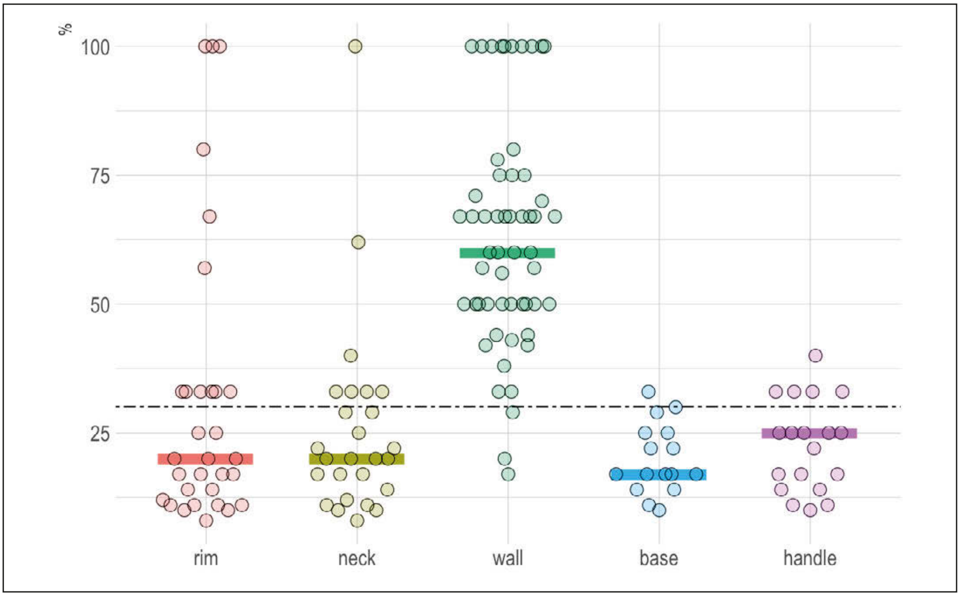

Fig. 9 – The circles in this graph show the abundance (in %) of vessel parts that have been retrieved for each sample. The coloured horizontal line indicates the median value for each group, while the black dashed line shows the mean rate of diagnostic pieces discarded on the test spoil heap.

The test rejected the hypothesis of a significant difference between the two means, hence suggesting that there is no significant daily trend in the discard.

The last question regarding changes in the rate of discarding diagnostic ceramic sherds over time was whether students were discarding fewer of these sherds as the archaeological campaign progressed. In other words, if students improved their ability to visually recognise sherds that could be useful for the subsequent quantification and interpretation of the archaeological layer. The data was divided by week of excavation, but the means (Tab. 3) only weakly support the hypothesis that students improved their ability to recognize diagnostic sherds. The highest rate of discarding was in Week 1, followed by a decrease in Week 2 and then an increase in Week 3. Further statistical analysis is needed, but the increase in Week 3 could be due to fatigue in the final stages of the excavation.

Week of excavation	Mean ratio of diagnostic sherds
Week 1	0.53
Week 2	0.37
Week 3	0.46

Tab. 3 – Mean ratio of discarded diagnostic sherds for each week of excavation.

5.5 *Other archaeological material*

This study also analysed the presence of other types of archaeological material in the test spoil heaps. The results showed that bones, particularly small/bird bones, were present in almost every sample. This is a well-known phenomenon studied by Payne (1972), who showed that sieving can significantly impact the relative proportions of faunal remains, particularly for bird bones and microfauna. Casteel (1972) also demonstrated how different mesh sizes can affect the faunal composition of a site.

Material	Presence
Faunal remains	**53**/59 (89.8%)
Glass	**24**/59 (40.6%)
Metal	**20**/59 (33.8%)
Small finds	**5**/59 (8.5%)

Tab. 4 – Presence or absence of other archaeological materials in the samples.

Metal (mostly nails) and glass were present in almost half of the samples (Tab. 4). Small finds, including three coins, a metal plaque, and a worked bone, were retrieved from 8.50% of the samples. Glass fragments, found in 24 samples (out of 59) were predominantly discovered in light brown dry soils (Fig. 10a), while metal fragments were found in 20 samples, both light brown dry soils and medium brown wet soils (Fig. 10b). Currently, it is not possible to make inferences regarding the soil type, humidity, or weather conditions that have an impact on the discarding of small finds due to the limited data.

6. Discussion and conclusions

This research conducted at the site of Siponto, Italy, aimed to investigate the degree of variability in students' accidental ceramic discarding during the 2022 archaeological campaign. The findings revealed that most of the pottery sherds lost on the spoil heap had a size ranging from 0 to 4 cm and sherds larger than 6 cm (in length) were much less frequent. Although the students were instructed to collect every pottery fragment found during the excavation, it is possible that they actively decided to discard small pieces or pieces that they deemed non-diagnostic. Whether this was a deliberate decision, the margin of error turned out to be rather high, with 30% of the ceramic materials collected from the sampling being diagnostic. This figure has implications for the subsequent quantification of ceramic classes in the laboratory. The destructive nature of the archaeological method means that the information lost can no longer be recovered, especially considering that this was a blind and randomised experiment and it is not possible to rectify the quantifications

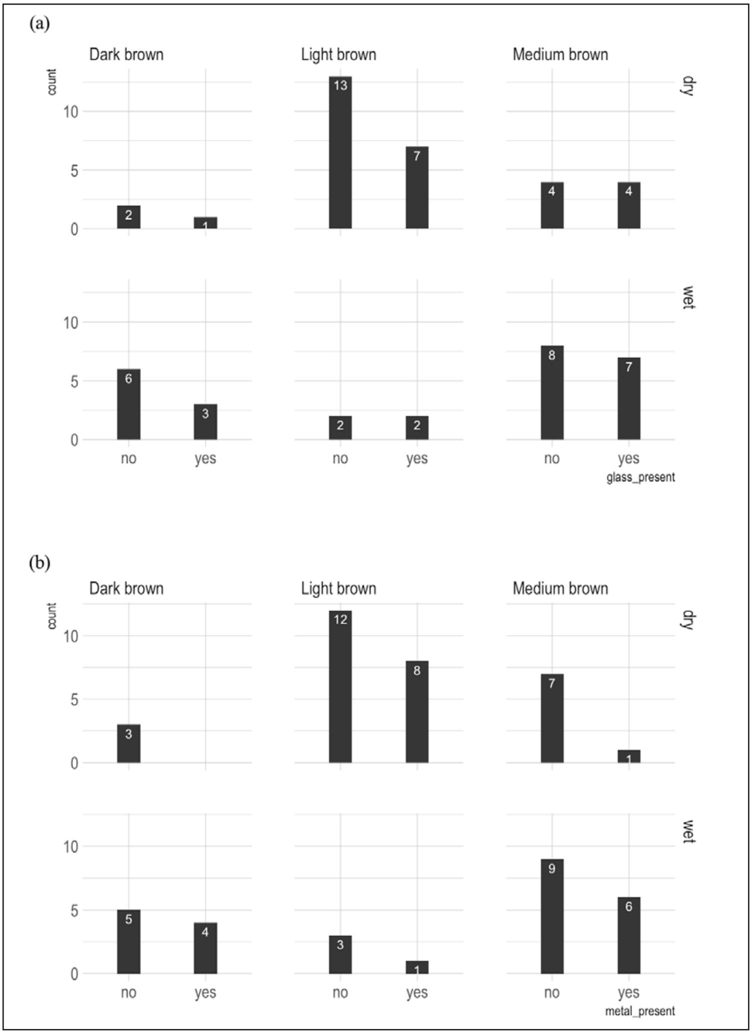

Fig. 10 – Presence of glass and metal in the samples against soil type and colour: a) glass; b) metal.

of the layers excavated. On the positive side, the second implication of this information is that it provides direction for repeating this experiment in the future, making it important to focus on improving students' training prior to future excavations. Subsequently, the degree of improvement can be analysed.

After studying the amount of information lost in the spoil heap, the study also aimed to identify the variables that may have contributed to accidental discarding. A colour-matching CA of the soil and sherds provided a better understanding of what material may be lost under certain conditions. For instance, red sherds were mostly lost in dark brown soils. Measures of central tendency were used to evaluate which soil types, colours and weather conditions influence the loss of ceramic fragments. For example, on cloudy days it is easier to lose fragments in any kind of damp soil, and orange fragments are the most easily discarded. The diagnostic parts of the vessels recovered from the samples were also quantified, with the walls being the most commonly lost.

Finally, the research focused on time variables to determine whether they were important factors in the discard rate. It was of interest whether tiredness (physical or mental) influenced the students' behaviour during the excavation and whether the students improved their skills throughout the excavation. Linear regression and statistical hypothesis verification tests failed in this assessment, suggesting that time was not an important factor in the accidental discard. However, the average percentage of discarded diagnostic fragments seems to decrease slightly after the first week. This was a preliminary survey which would have required more time or people to record more variables for each sample, thus it was only possible to report whenever other archaeological materials (bones, metals, glasses and small finds) were also detected in the samples. The high presence of faunal remains in 89.8% of the samples may reflect conscious or unconscious student selection practices on the field.

Although the sieve mesh (2 mm) used in this study is still large for the discovery of certain classes of bones (e.g. fish bones), the introduction of the practice of dry sieving for a few samples in each stratigraphic unit would not take too much time away from the excavation and would provide important information for the study of microfauna, still largely under-studied in many Italian archaeological contexts.

These insights will be useful for the quantification of the fauna present at Siponto. In the future, these types of archaeological materials will also be quantified and cross-tabulated with the other variables used in this study. It will also be important to move from a randomised approach to a spatial one to study in which contexts we are mostly losing information. The dimensions of the stratigraphic units and the individual excavating actions will also be used as factors. This will allow to test whether there is a positive correlation between the number of collected sherds in the unit and the number of discarded ones. Further methods to quantify observer bias (Fish 1978) also need to be discussed and introduced in future campaigns. As Ian Hodder (1999, 83) noted: «interpretation occurs at the trowel's edge». It is worth asking ourselves how much our interpretation of the layers we are excavating influences our practices on the field, are we as careful and attentive when we work on collapses, wastepits or cleaning mosaics?

The study was useful for educators in identifying the types of pottery that students have difficulty recognizing, and in arranging more specific training to address these issues in future lab sessions. University excavations have educational purposes for many students each year. Checking and refining the students' learning progression is an integral aspect of the educational process, and the aim of the future excavation campaign is to minimize the amount of diagnostic pieces that are accidentally discarded and to direct the students' focus towards factors that may impact their recognition of archaeological material.

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ABSTRACT

This article aims to quantify the rate of accidental ceramic discard on the archaeological site of Siponto (Italy), where in 2022 the University of Bari and the University of Foggia conducted fieldwork and training for students at different education levels (BA to PhD). The goal was to identify and quantify factors leading to the accidental discard of ceramic sherds by excavators on the spoil heap. As a pilot project, a few variables have been considered to count the minimum number of individuals found after sieving soil composition and colour, weather conditions, time variables, sherds size, colour, and vessel part. Other categorical or presence/absence variables have also been considered. This enlightening investigation shows the bias in post-excavation quantification of ceramic finds. Results indicate that 30% of the fragments of pottery retrieved from the spoil heaps, used in this experiment, were diagnostic. The study also helps the educators on-site to identify the types of vessels that might be less clear for the students.