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The writing culture of ancient Dadān: A description and quantitative analysis of linguistic variation

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Chapter 1 - Introduction

Figure 1 AH 197 a dedicatory inscription in relief

AH 197 (lines 5-7) *ḥggw/h-nq/w* ***ḥġnyw****/b-bt-hm/l- ----//tn/l-ḫrg/w-*ʾ***ẓlw****/b-h-mṣd/ẓll/h-[nq]//l-ḏġbt*
'they performed the pilgrimage and dedicated (lit. made increase wealth) at their temple for….. *tn* for *ḫrg* and they performed the *ẓll* of the [*nq*] for *ḏġbt*'

This is a typical example of a Dadanitic inscription. It was found in the area of the ancient oasis of Dadān, modern-day al-ʿUlā, in northwest Arabia (see Figure 2). It is a dedicatory inscription commemorating the performance of several rituals for the main deity of the oasis *ḏġbt*. It is written in the Dadanitic script and executed in relief. One of its most striking features is its peculiar linguistic form: the inscription contains two causative verbs, each exhibiting a different morphological form (indicated in bold face in the transcription).

The linguistic variation attested in the Dadanitic inscriptions was already noted in the earliest publications of texts (e.g. D. H. Müller 1889, 13–14; Grimme 1937, 300), but it has never received any attention for its own sake and so far no comprehensive explanation for it has been formulated. This work aims to remedy this situation by offering a description of the language and variation attested in the inscriptions and performing a quantitative analysis of the variation. Several descriptions of the grammar of the inscriptions have been published, usually accompanying an edition of inscriptions. The most recent descriptions are those of Sima (1999) and Farès-Drappeau (2005). Sima's (1999) description of Dadanitic is very thorough, but only focuses on the formal inscriptions from the al-ʿUḍayb area and does not deal with inscriptions from other areas and graffiti (see § 1.4 The oasis of Dadān for an overview of all sites). Farès-Drappeau's (2005) work contains a grammatical sketch based on the whole corpus, but she takes a very Classical Arabic oriented approach in her description.[1] This work aims to approach the language of the inscriptions on their own

[1] But see Al-Jallad (2018, 21-23), where he shows that Dadanitic is probably a sister language of Arabic rather than a direct descendant of Proto-Arabic (see § 1.6.3 Language).

terms (see § 1.2 A holistic approach to the epigraphic object and § 1.7.5 Methodological concerns - Analyzing the language of a scribal school) and give due consideration to the lingsuitic variation attested in the corpus.

A better understanding of the linguistic variation in the Dadanitic inscriptions and the possible underlying causes will improve our understanding of the linguistic situation at the oasis when inscriptions were composed. In addition to this, it will shed light on the oasis' scribal culture and the perennial question of literacy. While Macdonald has extensively discussed the interaction between writing material and variation in letter shapes (Macdonald 2015, 2010), this will be the first study to systematically consider the interaction between writing practices and linguistic form.

1.1 Outline of the present work

This work is divided into two parts. Part one contains a description and grammatical analysis of the corpus. It helps to contextualize the variation discussed in part two, by giving an overview of the common and less common forms of the grammar, but also of the formulaic parts and writing styles. Part two deals exclusively with the variation attested in the corpus, building on the description in part one. It offers a quantitative analysis of the variation in the corpus in an attempt to move beyond impressionistic accounts of its distribution and possible causes. Given the completely different methodological approach of part two compared to part one, it will have its own methodological introduction. The methodological introduction to part two will elaborately discuss the statistics used to determine the interaction between different variables and how each variable was chosen.

Part one consists of six chapters. This introduction includes an overview of the corpus and history of the oasis, and a methodological discussion on the use of epigraphic material to answer questions about its language and variation in it. Chapter two discusses the script and different styles of inscribing used to carve the inscriptions. Chapter three contains an overview of the different genres that can be distinguished and the compositional formulae associated with them. Chapters four through six offer a description of the grammar of the Dadanitic inscriptions. Chapter four deals with the orthography and phonology of the inscriptions, chapter five contains a description of its verbal morphology and chapter six deals with nominal and pronominal morphology.

Chapter seven forms the second part of this work. It will include the analysis of the variation in the corpus relying on a statistical analysis of co-occurrence of varying features in the inscriptions. The aim of this analysis is to reveal patterns of co-occurrence between different varying features, which could offer insight into the reasons behind variation. For this method, the number of co-occurrences of two features within one inscription are added up and compared to the number of co-occurrences that would be expected to occur if there was no relation between the two features (i.e. if their distribution across the corpus was completely random and independent of each other). The assumption that there is no relationship between compared groups is called the null hypothesis. The further the results of both calculations are apart, the less likely the null hypothesis is true. If the chance of the given outcome occurring by chance is smaller than 5%, the result is found to be *significant*, meaning it is unlikely to have happened by chance if the null hypothesis were true and there was no relationship between the two features. Chapter seven will start off with an elaborate explanation of the statistical method used for the analysis, followed by a description of the variables included in the analysis. The body of the chapter will present the quantitative data, followed by a discussion in which the numbers will be interpreted. The chapter ends with a short conclusion summarizing the results.

1.2 A holistic approach to the epigraphic object

In his (1998) article Macdonald, following Février (1989), emphasized the importance of studying the language and content of epigraphic material in the context of its physical form, location and cultural/historical setting. All these elements contain information on the meaning and significance of a particular text and need to be taken into account in order to even begin to understand the already fragmentary epigraphic record. While the principle concern of this work is the language of the Dadanitic inscriptions and the linguistic variation found within them, this cannot be studied without taking into account the character of the Dadanitic texts. Therefore, the study of the language of the Dadanitic texts begins with the object itself. The features that make a text identifiable as Dadanitic are: its script and to some extent its language, its location, and the particular genres and formulae associated with the Dadanitic writing culture. This chapter will use the three basic features script, genre and language to describe the Dadanitic corpus including the variation it comprises (see § 1.6 Key elements of a Dadanitic inscription). The specific elements of the corpus will be discussed in their wider cultural context in order to take the possible influence of literacy and scribal schools on the linguistic variation in the corpus into consideration. Finally the methodological challenges associated with analyzing this particular body of texts will be discussed (see § 1.7.5 Methodological concerns - Analyzing the language of a scribal school). Such a holistic approach to the epigraphic object is the only way to move beyond simply describing its separate elements and to work towards an explanation for the seeming inconsistencies found in the inscriptions. Previous studies of the language of the inscriptions (e.g. Sima 1999; Farès-Drappeau 2005) have not been able to offer a comprehensive explanation for the variation attested in the inscriptions partly because they did not look beyond the transcribed text of the inscriptions. Now that it has become clear that the explanation is not a purely linguistic one it is understandable that the linguistic dimension alone does not contain the answers to the question of variation. Another element that is often overlooked when studying epigraphy is that official inscriptions, that are not graffiti, do not represent natural speech but a written code.[2] The formalization of language for such purposes will have a standardizing effect that creates some distance between spoken and written registers. Before discussing the specific features of the inscriptions and the literary environment in which they were produced in more detail, a brief overview of the corpus and the history of the oasis will be given.

1.3 The corpus

Most of the Dadanitic inscriptions are found in and around the ancient oasis of Dadān.[3] The Dadanitic script is classified as Ancient North Arabian (ANA), a blanket term to refer to the non-ASA South Semitic scripts attested from the northern borders of Yemen to the southern Levant. ANA consists of various linguistic varieties tied together by their script, which is related to the South Semitic alphabet. It has been hypothesized that the ANA scripts form one group, descending parallel to Ancient South Arabian from a putative proto-South Semitic script. However, a paleographic connection between all of the ANA scripts has yet to be demonstrated (Al-Jallad 2015: 10).

[2] This has of course long been recognized for ancient languages such as Akkadian written in cuneiform script, or even in alphabetic writing traditions such as Nabataean where the difference between the written Aramaic and the substrate of Arabic, of which traces can be found in the written language, is more immediately apparent. However, in Ancient South Arabian and Ancient north Arabian epigraphy this plays a much less prominent role in the approach to their language, probably partly due to the large amount of graffiti found in scripts that fall under these umbrella terms.

[3] A few Dadanitic inscriptions have been found in the vicinity of the nearby oasis of Taymāʾ (Hayajneh 2016). Several inscriptions in the Aramaic script mentioning the king of Liḥyān have also been found at Taymāʾ (JSNab 334; 335; 337).

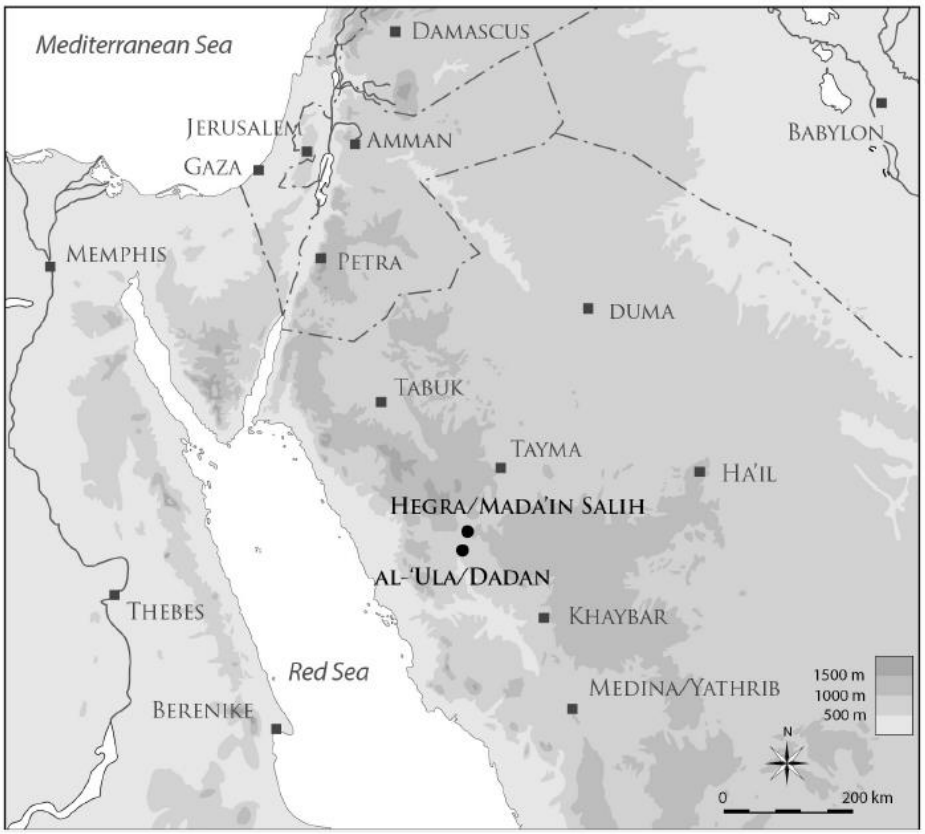

Figure 2 Map showing the location of Dadān, courtesy of Rohmer and Charloux (2015)

The first western traveler said to haved visited al-ʿUlā and Madāʾin Ṣāliḥ, Nabataean al-Ḥigr, some 20 km northeast of the oasis of al-ʿUlā, was C.M. Doughty. He published an account of his travels in 1888, which includes a description of both places and sketches of their surroundings. He also copied some of the inscriptions, which he thought to be Sabaic, or "Himyaric" (Doughty 1888, 160). His copies were published in the volume *Documents épigraphiques recueillis dans le nord de l'Arabie* (Doughty 1884). Based on these texts Halévy offered a first attempt at their decipherment (Halévy 1884). The first decipherment of the script benefited greatly from the resemblance it had to the already deciphered Sabaic script (D. H. Müller 1889, 15–21). The first edition of Dadanitic inscriptions was Müller's (1889) work on the inscriptions brought back from the region of al-ʿUlā by Euting. Müller termed the inscriptions 'Lihjanisch' (D. H. Müller 1889, 4) after the attestation of several kings that are called *mlk lḥyn* 'king of Liḥyān' in the corpus (D. H. Müller 1889, 5). His work includes a script table with his reading of the attested glyphs (D. H. Müller 1889, pl. X). Despite these efforts, the reading of several letter shapes was amended in later works (Grimme 1926, 1932; Winnett 1937). The large number of additional Dadanitic inscriptions that had become available after the publication of the inscriptions collected by Jaussen and Savignac (1909) were of great importance to their further decipherment. Later major contributions to the corpus were made by Stiehl (1971) and Abū ʾl-Ḥasan (1997, 2002).[4]

[4] For a more elaborate overview of the decipherment of the Dadanitic script see Farès-Drappeau (2005, 31–33) and (2005, 36–41) for a discussion of the history of scholarship on Dadanitic. For an overview of contributions to the study of Dadanitic following Caskel's (1954) edition see Sima (1999, 3–4). All the inscriptions including available photographs and bibliography are available on the OCIANA database http://krcfm.orient.ox.ac.uk/fmi/webd/ociana .

1.3.1 Terminology

Grimme was the first to propose dividing the Dadanitic corpus into a Dadānite and Liḥyānite script type (Grimme 1932, 754), using the term Dadānite to refer to inscriptions Jaussen and Savignac had initially termed 'old Thamudic' (for more on the paleographic distinction between Dadānite and Liḥyānite see § 1.6.1.1 Paleography below). These labels referred to the two consecutive kingdoms that are mentioned in the inscriptions: the kingdom of Dadān and the kingdom of Liḥyān. The use of the name 'Dadanitic', adopted in this work, to refer to the complete corpus by its geographical location is relatively recent. It was first coined by Macdonald (2000, 33), to replace former 'Dadānite' and 'Liḥyānite'. He argues that, since we cannot make a clear distinction between two different types of script (see in more detail below § 1.6.1.1 Paleography), dividing the corpus into two would not accurately reflect its variation. Moreover, even if a distinction could be made, we cannot directly attribute the change in script to a change in political power. Thus connecting any phase of the script to a particular regime risks blurring our understanding of the history of the oasis (Macdonald 2000, 33).

1.3.2 The OCIANA database

At present the Dadanitic corpus consists of 1969 inscriptions, which are all brought together in the searchable online OCIANA database.[5] The database was developed at the Khalili research center at the University of Oxford, under supervision of Michael Macdonald and Jeremy Johns.[6] It includes all currently published and even some unpublished Dadanitic inscriptions. Each inscription has its own record containing all available images, a transcription and translation when possible and a complete bibliography. The images provided on the OCIANA website have formed the basis of my analysis of the manners of inscribing (see Chapter 2 - Script and manners of inscribing). The reading of all inscriptions relevant to the analysis of the grammar or orthography was cross checked with the available photographs. Whenever the proposed reading or interpretation of an inscription relevant for my analysis does not follow the one given in OCIANA this will be mentioned in the discussion. In the glossary all readings that deviate from the interpretation in OCIANA are marked with a single asterisk when they are mine, otherwise they are followed by the reference to the publication in which they were proposed (see Appendix - Glossary).

1.4 The oasis of Dadān

Dadān was situated on a strategic place on the incense trade route between the south of the Peninsula, Egypt, and the Levant to the north (Macdonald 1997, 335–36). The presence of a major Minaean settlement at the site underscores its international importance. See § 1.5.3 Minaic presence at Dadān for a more elaborate discussion of the interaction between the Dadanitic population and the Minaeans and the implications for the dating of the inscriptions.

Besides being an important trading hub, agriculture also played an important role in the economy of the oasis. Different crops, such as dates growing on palm trees (*nḫl* (e.g. Al-ʿUḏayb 071)), grain (*ṯbrt* (U 112; U 069)), and different seasonal crops (*dṯʾ* (AH 107); *ḫrf* (U 059)) are commonly mentioned in the dedicatory inscriptions from the oasis. The agricultural fields were likely fed though a subterranean canal system that was found at the oasis (Nasif 1988). It has been assumed that the construction method used to build it was introduced into Arabia around the 5th century BCE (Sima, 2005: 50 cf. n. 9), but al-Tikriti (2002) has argued convincingly that the subterranean canal system

[5] 22-4-2018 http://krcfm.orient.ox.ac.uk/fmi/webd#ociana (now available at http://krcfm.orient.ox.ac.uk/fmi/webd/ociana).
[6] For more information about the project and staff see http://krc2.orient.ox.ac.uk/ociana/index.php

likely originated in South East Arabia "several centuries before its introduction into Iran" (al-Tikriti 2002, 137).

1.4.1 Main sites

While most of the Dadanitic inscriptions are found in and around the oasis, the area can be divided into several different sites (see Figure 3). Most of the monumental inscriptions are found close to the site of the ancient settlement, known as al-Ḫuraybah, but also a few kilometres further to the north at a site called Qubūr al-Jundī (in the valley connecting the ancient village to the site of Madāʾin Ṣāliḥ and at Jabal Iṯlib, see Figure 7 for an overview of the distribution of the inscriptions across the main sites). Jabal Iṯlib is connected to the ancient town of al-Ḥigr (modern Madāʾin Ṣāliḥ), known as "the 'southern capital' of the Nabataean kingdom" (Rohmer and Charloux 2015, 303). It seems that Jabal Iṯlib was mainly used as a look out spot, and most inscriptions found in this location are graffiti mentioning the guarding activities of the individuals posted there (see § 1.5 A brief history of Dadān for more on the relationship between the Nabataeans and Dadān). Among the monumental inscriptions, especially the location of the *ẓll* inscriptions stands out, commemorating the performance of an enigmatic ritual called the *ẓll* for the main local deity *ḏġbt*. These inscriptions are only attested at two sites near the ancient settlement: at al-ʿUḏayb or Jabal ʿIkmah (Stiehl 1971; Sima 1999) and at Umm Daraj (Nasif 1988; Abū l-Ḥasan 2002, 25–162). Their concentration at these two specific sites probably marks them as cultic sites. At Umm Daraj, this is supported by the finding of cultic items such as incense burners and statues (Abū l-Ḥasan 2005, 29). Dadanitic graffiti are found beyond these environs, some even close to Taymāʾ (see Hayajneh 2016) another oasis town about 150 km to the North East from al-ʿUlā as the crow flies (see Figure 2).[7]

1.5 A brief history of Dadān

The dating of the Dadanitic inscriptions is problematic. They are generally assumed to have been produced between the 6th and 1st centuries BCE. However, the inscriptions themselves do not refer to any datable historical events. Therefore, dating the inscriptions has relied mostly on epigraphic material and outside references to Dadān. Below, an overview and discussion of the main arguments concerning the dating of the inscriptions will be presented. It will become clear that none of the traditional methods of dating the corpus has yielded reliable results. In a recent article discussing the new archaeological data from the ongoing excavations at Madāʾin Ṣāliḥ and the site of ancient Dadān, Rohmer and Charloux have shown the importance of this new source of data for our understanding of the history of the area (Rohmer and Charloux 2015).[8]

1.5.1 The Dadānite and Liḥyānite kingdoms

It is generally assumed that the Liḥyānite kingdom followed the Dadānite kingdom and that the end of the Liḥyānite kingdom coincides with the end of the production of Dadanitic inscriptions (e.g. Winnett and Reed, 1970: 116; Farès-Drappeau, 2005: 117–122). This is based on the mentioning of both kings of Dadān and kings of Liḥyān in the inscriptions. A change in the ruling elite seems to be supported by the names of the kings found in the inscriptions. We only have three names connected to the title *mlk ddn* (*kbrʾl* (JSLih 138); *mtʿʾl* as a patronymic (JSLih 138) and *ʿṣy* (Al-Saʿīd 2011.1; 2011.2)), and five names connected to the (at least) eight individual Liḥyānite kings (*hnʾs*[1] (e.g. AH 202; AH 222);

[7] To get to Taymāʾ one would have to go around the mountain range to the north of al-ʿUlā, however, making the actual journey closer to 200/250km.

[8] Their article includes a thorough discussion of the main epigraphic and historical sources used to date the Dadanitic corpus so far.

s^2hr (AH 053); *tlmy* (e.g. AH 226); *lḏn* (e.g. JSLih 082); gs^2m (Rabeler 001)).[9] The royal house of Liḥyān seems to have employed a restricted set of regnal names that was not used by the kings of Dadān nor by the general public.[10]

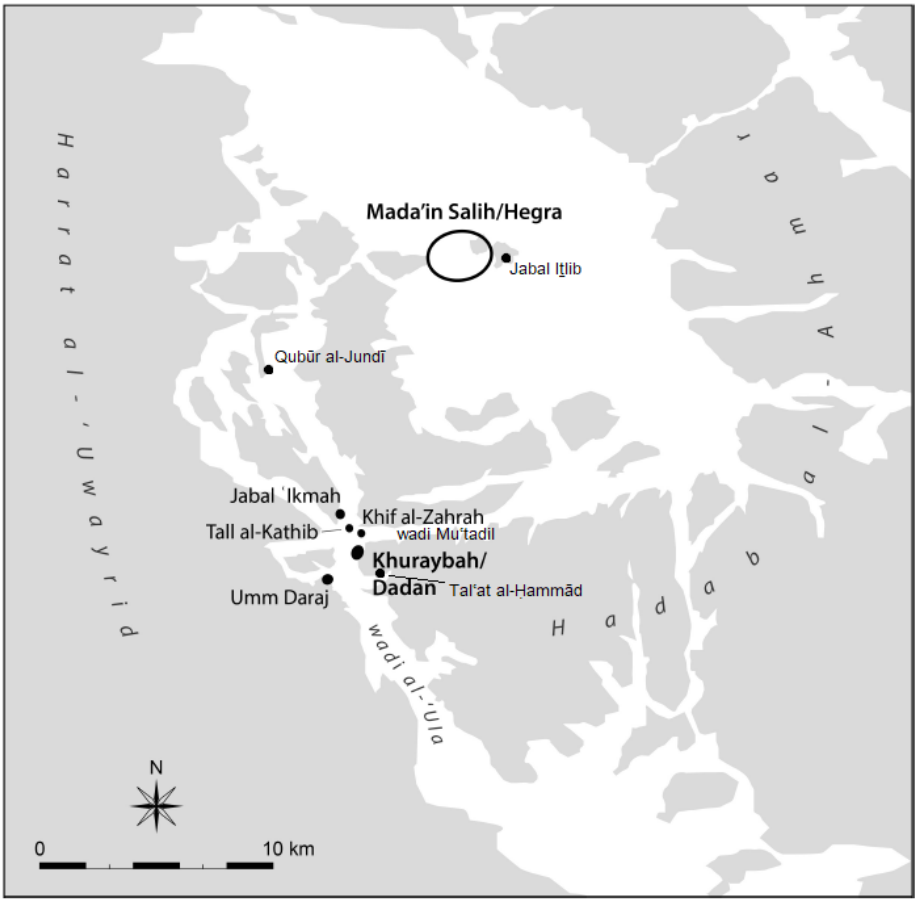

Figure 3 Map showing the main archaeological sites of Dadān, courtesy of Rohmer and Charoloux (2015), map is adapted to show additional sites (qubūr al-jundi, Jabal Iṯlib, talʿat al-Ḥammād and wadi muʿtadil). The grey areas represent sandstone massifs. Jabal ʿIkmah corresponds to the area called al-ʿUḏayb in Stiehl (1971) and Sima (1999).

1.5.1.1 Regnal years and the chronology of the inscriptions

Several scholars have tried to use the royal lineage and the inscriptions dated to regnal years as a way to gain insight into the length of the period in which the inscriptions were produced (Farès-Drappeau 2005, 123; Rohmer and Charloux 2015, 299). Rohmer and Charloux conclude that there were at least 12 different kings and come to a sum of 199 regnal years. They combine this with the fact that in the royal chronicle of Nabonidus, who resided in Taymāʾ from 552–543 BCE (Beaulieu 1989, 150), reference is made to a 'king of Dadān', suggesting that the kingdom of Liḥyān did not exist yet at that time. Based on this, they establish 552 BCE as a *terminus post quem* for the beginning of the

[9] For an overview of the kings' names and a suggested lineage see Farès-Drappeau (2005, 126). For a brief discussion of the Aramaic inscriptions mentioning a 'king of Liḥyān'see § 1.5.4.4 Aramaic inscriptions.

[10] The names *hnʾsl* and *tlmy* are never mentioned outside the context of dating formulae or royal lineage in the Dadanitic corpus; *s²hr* is mentioned once in a context that may not be a royal lineage, but it appears in broken context at the end of a dedicatory inscription; someone named *lḏn bn gs²m* occurs once in what seems to be a graffito (AH 309). The use of the names of kings of Dadan also seems to have been fairly restricted. *kbrʾl* only occurs once as a royal name; *mtʿʾl* and *ʿṣy* occur once together in a broken monumental inscription (AH 214); *ʾṣy* further occurs in another fragmentary inscription in relief (JSLih 323). *mtʿʾl* seems to have been more widespread and occurs in several other inscriptions in which it does not seem to be connected to a royal lineage (JSLih 186; JSLih 187; Nasif 1988: 98, pl. CL; Nasif 1988: 91, pl. CXXX/d).

Liḥyānite kingdom, and conclude that it must have existed until at least 353 BCE (Rohmer and Charloux 2015, 299–300).

Farès-Drappeau tries to take the information provided by the royal lineages even further and provides a line of succession of the different kings (Farès-Drappeau 2005, 126). If it is indeed possible to establish such a family tree, this would provide us with a relative dating of at least these inscriptions, which could be a valuable tool in understanding internal linguistic and paleographic developments of the corpus. Unfortunately the genealogies provided in the inscriptions are never longer than two names (name of the king and his father), and occasionally do not even mention the name of the father (e.g. AH 063; Rabeler 001; AH 222). Due to the short genealogies and the repetition of names across generations, there are a great many different options when constructing a family tree. Especially if we allow for the possibility that not every new king represents a new generation and consecutive kings may have been brothers.

The following reconstruction (Figure 4) rests on a number of assumptions. First of all it assumes that our list of kings is complete and that there are no gaps in our attestation of rulers; this is of course by no means a certainty. Also, it assumes that the inscriptions were made aiming at the biggest possible clarity in identifying the kings, which implies that every mention of the same name with the same patronym refers to the same person. This is of course not a certainty with genealogies going back no further than one generation. Moreover, optimal clarity was not something the authors of the inscriptions were overly concerned with, as we can see from the five inscriptions that mention only the name of a king without his patronymic (AH 064 and AH 063 *tlmy*; Rabeler 001 *gs²m*; AH 202 and AH 222 *hnʾs¹*). Assuming that every king with the same name and patronymic is the same person has as an advantage that it reduces the possible amount of outcomes. In addition to that, this method yields the most conservative time depth. Such a short chronology is not necessarily closer to the true royal lineage of the Liḥyānite kings of course; it may just as likely have been longer. However, using the inscriptions to determine the minimum amount of time the Liḥyānite kings ruled the oasis, as Rohmer and Charloux (2015, 299–300) did, is the only conclusion they provide reliable evidence for.

This can be supplemented by looking at the reported years of reign in the inscriptions. Most kings are mentioned in dating formulae. These count the years of the reign of the king. It seems safe to say that if *tlmy* son of *hnʾs¹* reigned for at least 42 years (al-Ḫuraybah 10), that he was not succeeded by his brother *lḏn* son of *hnʾs¹* who reigned for at least 35 years (JSLih 082) and therefore they likely belong to different generations and their father is not the same *hnʾs¹*. This most constrictive method with the addition of accounting for number of regnal years yields the genealogy as presented in Farès-Drappeau's work, represented in Figure 4 (2005, 126).[11]

Without changing any of these underlying assumptions it is also possible, however, that *s²hr* was the brother of *lḏn* (JSLih 082) (see Figure 5). If this is correct, then we seem to enter a period of messy succession in which the sons of each brother reigned for short periods of time (only year one of *tlmy* son of *lḏn* is attested (Müller, D.H. 1889, 63–64 no. 8); only year 7 of his brother *gs²m* is attested (JSLih 085); and of their nephew *hnʾs¹* son of *s²hr* no specific regnal year is mentioned (JSLih 053)). Since this is a difference of three generations already for *s²hr* son of *hnʾs¹* this has serious implications for the relative chronology of the inscriptions.

[11] Note that Farès-Drappeau does not make these choices underlying her reconstruction of the royal genealogy explicit, she does not discuss any alternative reconstructions either (Farès-Drappeau 2005, 122–26).

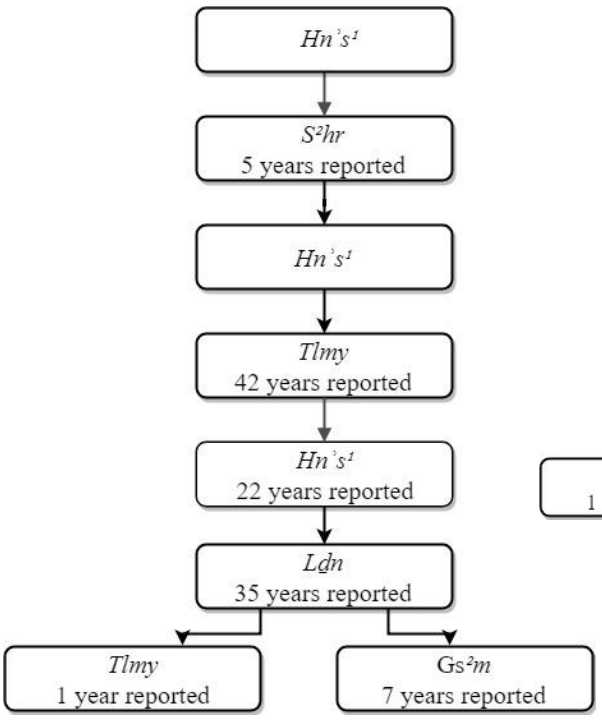

Figure 4 Possible royal lineage, as presented in Farès-Drappeau 2005. Figure made in draw.io

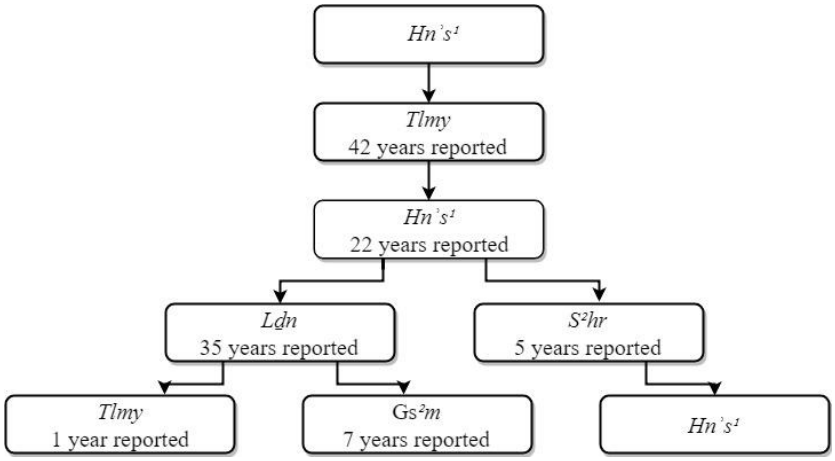

Figure 5 Possible royal lineage, with maximum restrictions. Figure made in draw.io

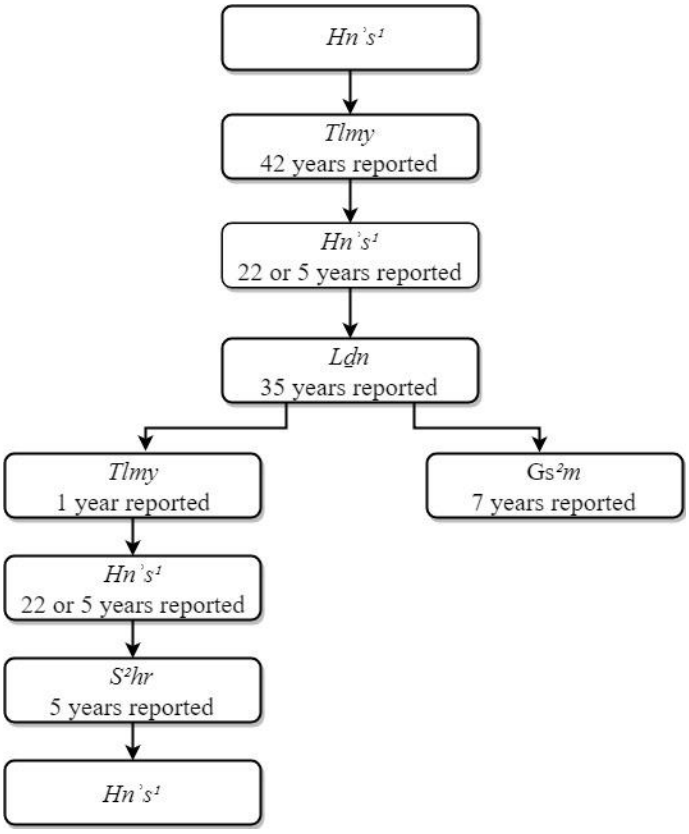

Figure 6 Possible royal lineage, without 1 name = 1 person restriction. Figure made in draw.io

The problems of chronology become even more serious when we consider the possibility that not every inscription mentioning the same name with patronymic refers to the same person. This means, for example, that one of the inscriptions mentioning *hnʾs*[1] son of *tlmy* (AH 244 and JSLih 075) could be moved three generations down and be interpreted as the son of *tlmy* son of *lḏn* (Müller, D.H. 1889, 63–64 no. 8). This movement would also open up the possibility that the line of *hnʾs*[1] son of *s*[2]*hr* (JSLih 053) son of *hnʾs*[1] (AH 013) could be moved from all the way at the beginning of the line to the bottom, following *hnʾs*[1] son of *tlmy* (AH 244 or JSLih 075) son of *lḏn* (Müller, D.H. 1889, 63–64 no. 8), likely a difference of several hundred years (see Figure 6). This is of course just one of the many possibilities when we abandon the idea that the same name always refers to the same person even when they occur in different inscriptions.

The number of possible orderings of the kings makes it clear that it is impossible to draw any reliable conclusions about the relative chronology of the inscriptions based on the royal lineages. Even to determine the overall duration of the Liḥyānite kingdom they are unreliable. Of most kings we only have one inscription mentioning a specific year of their reign, making it very possible that *tlmy* son of *lḏn* ruled far longer than the one year that has been recorded in the inscriptions. On top of that not all kings may be represented in the epigraphic record as we know it today. Therefore these inscriptions can only be helpful to gain some basic insight into the minimum number of years the rule of the Liḥyānite kings lasted as Rohmer and Charloux (2015, 299) did.

1.5.2 Philological arguments

Using philological arguments to date the inscriptions, Winnett refers to the title *pḥt ddn*, used in JSLih 349, which he translates as 'governor of Dadān' (Winnett and Reed 1970, 115–16). Based on when this, originally Assyrian, word was thought to have been introduced into western Arabia he proposes to date the text to the Persian period (6th–4th c. BCE) (Winnett 1937, 51; Winnett and Reed 1970, 115–16).[12] Graf however, showed that the first occurrence of the title *pḥt* is much earlier, in the Adon-Papyrus from Egypt, dated to the early Neo-Babylonian period (604/603 BCE) (Graf 1990, 140; and most recently Rohmer forthcoming).

In a similar way Caskel (1954) uses the formula "Es werde seiner im Guten gedacht!" *ḏbḫ* (JSLih 082; Müller, D.H. 1889: 63–64, no. 8). He believes these three letters are an abbreviation of the phrase *ḏukir bi-ḫayr* in which he sees a parallel to the Nabataean formula *dkīr b-ṭāb* (Caskel, 1954: 76).[13] The Nabataean formula is first attested in inscriptions from the 1st century BCE (Caskel, 1954: 36). This argument is built upon several assumptions that are difficult to verify. The formula does not occur in a written out form in the corpus, none of the other frequently used formula in the Dadanitic corpus are abbreviated like this, and one would have to assume that the Nabataean formula was not adopted directly but in translation. Moreover, the archaeological evidence from both Dadān and al-Ḥigr (Madāʾin Ṣāliḥ), do not show any evidence for direct contact between the Nabataeans and the Liḥyānite kingdom (Rohmer and Charloux 2015, 309), although this cannot prove that there was no contact at all of course.

[12] Caskel, (1954) acknowledges Winnett's arguments, but dates the text to the 2nd century BCE, based on his dating of the Dadanite period. He argues that the term could have lingered in the region after the Persian period (Caskel, 1954: 102).
[13] Note that this formula is found in other forms of Armaic, such as Palmyrene, as well. For an overview of its use and variations with bibliography see Hoftijzer and Jongeling (1995, 324–29).

1.5.3 Minaic presence at Dadān

Another historical anchor for the inscriptions may be found in the presence of Minaic inscriptions at Dadān. The presence of Minaic inscriptions mentioning the title *kbr ddn* were initially taken as proof the Minaeans took over political control of the oasis (Winnett 1939, 6). In his (1970) publication with Reed, however, Winnett pointed out that this was likely not the case, as *kabīr* is also used in other Minaean settings in which they were not in political control (Winnett and Reed 1970, 117).[14] Instead, Winnett assumed that the Minaeans and Dadānites were contemporary to each other. This is supported by an inscription in Dadanitic language and script, in which a priest of Wadd, the main deity of the Minaeans, presents *ḏġbt*, the main deity of the Dadanitic inscriptions, with a young boy (JSLih 049).

Even though it is difficult to establish any exact dates for the beginning and ending of the Minaean kingdom, it is roughly estimated that Minaean kings ruled in the north of modern-day Yemen between the sixth and the first century BCE.[15] One Minaic inscription (RES 3022) from the Minaic homeland in the southern Jawf, in the south of the Peninsula, mentions a conflict between *mḏy* and Egypt (Winnett and Reed, 1970; 118–119). Winnett dates this text to 343 BCE, and interprets it as a reference to Artaxerxes' attack on Egypt (Winnett and Reed, 1970; 119). Lemaire (1996; 46), on the other hand, points out that the inscription talks about a *mrd* and not a *ḍr*. The word *ḍr* is a commonly used to refer to a war whereas *mrd* usually means 'revolt'. This leads him to date the inscription to the period between 482 and 345 BCE, during which there were several Egyptian revolts against Persia (Lemaire, 1996; 46). He adds that the inscription most likely refers to one of the two major revolts, either that of Inaros (between 463 and 461 BCE) or that of Amyrtaeus (405 BCE) (Lemaire, 1996; 47). This places his estimated dating of the inscription much earlier than that of Winnett. The Minaean presence at Dadān probably lasted from about the fourth century BCE (Beeston 1979: 8) until a little before the decline of the kingdom in the south which can probably be placed in the first century BCE (Robin 1998: 184–85; Arbach 2003: § 24–25),[16] however, Beeston suggested that the trading station at Dadān already "ceased to operate" around 100 BCE (Beeston 1979: 8).[17]

1.5.4 Dadān in other corpora

1.5.4.1 Hierodules list

One of the sources from outside the Dadanitic corpus commonly used to date the inscriptions is the inscription known as the Hierodules list. This is an inscription that was found in Maʿīn, listing marriages between Minaean men and foreign women. Both Dadān and Liḥyān are mentioned in it: Dadān as a toponym and Liḥyān as an anthroponym (Farès-Drappeau 2005: 119). [18]

However, the dating of the text is still disputed, since the inscription is not dated, and no historical events are explicitly mentioned in it (e.g. Lemaire 1996, 35–48; Bron 1998, 3:102–3; Rohmer and

[14] Norris (2018, 78) discusses an ANA inscription from Dūma which he reads *l ṯwb h-kbr* 'by *ṯwb* the kabīr'. If his interpretation is correct, this is the first discovery of the mention of a kabīr in northern Arabian outside of Dadān (Norris 2018, n. 20).

[15] See for example Winnett (1939) for a general discussion of the chronology of the Minaean kingdom. See Robin and De Maigret (2009) for a discussion of early archaeological evidence of the Minaean kingdom.

[16] Arbach argues for the entry of Arabian tribes from the north in the beginning of the 2nd century BCE, based on changes in the epigraphic record, where different deities start to be mentioned (*hlfn* and *ḏs*^{1}*mwy*), the political titles change, and some linguistic changes can be observed (Arbach 2003, § 24). He argues that the arrival of the Roman army in the Jawf at the end of the 1st century BCE truly meant the end of the Minaic realm (Arbach 2003, § 25).

[17] Beeston does not discuss his reasons for this assertion and seems to take it as established fact.

[18] A 'free woman from Liḥyān' Maʿīn 93 side B line 46 and women from Dadan (Maʿīn 93 West side lines 31; 36;9/10; 16; 42/43; North side line 8; Maʿīn 94 line 4; Maʿīn 95 line 15/16; Maʿīn 98 line 5/6) occur in the text.

Charloux 2015, 302). Most attempts to gain some insight into this issue have been based on paleography. This led Pirenne (1956: 212) to assume that the inscription was gradually compiled sometime between 320 and 150 BCE (Lemaire, 1996; 39–40). Lemaire, however, bases his arguments on the place names mentioned in the inscription. Based on the absence of any mention of Edom and the Nabataeans, as opposed to the explicit mentioning of Sidon, and the presence of the Qedarites, he concludes that the inscriptions that make up the Hierodules list were probably produced before the 4th century BCE (Lemaire, 1996; 44).

1.5.4.2 Taymanitic inscriptions

Dadān is also mentioned several times in the Taymanitic inscriptions, another ANA corpus. The Taymanitic inscriptions are found in the nearby oasis of Taymāʾ. It is assumed that at least part of the Taymanitic corpus was written around the second half of the 6th century BCE, based on a few inscriptions found around Taymāʾ which mention *nbnd mlk bbl* (Esk 169 and Esk 177) or only *mlk bbl* (Esk 025) who is identified as 'Nabonidus king of Babylon'. The Taymanitic inscriptions mention a 'war of Dadān' *ḏr ddn* (e.g. WTay 20). This can at least tell us that Dadān was inhabited at the time these Taymanitic inscriptions were produced. It is tempting to assume that Dadān referred to in the Taymanitic script is contemporary to the Dadān of the writers of the Dadanitic inscriptions, but the inscriptions contain no direct evidence for this.

1.5.4.3 Safaitic inscriptions

There are also several Safaitic inscriptions that mention the Lihyanites (BRenv. A5; BRenv. A2). The inscriptions mention a sudden attack by the '*ʾl lḥyn* 'the family/tribe of Liḥyān' on the settlements/settled areas'[19] (Macdonald, Al-Mu'azzin, and Nehmé 1996, 458). There are other Safaitic inscriptions that mention *lḥyn* in a dating formula (WH 641.1; KRS 2287; KRS 2327; KRS 2342[20]), but in those contexts it may have been a personal name.[21] Unfortunately these texts are of little help to aid in the exact dating of the Dadanitic inscriptions. The Safaitic inscriptions are generally assumed to have been written roughly between the 1st century BCE and the 4th century CE, but this dating is uncertain and their production might have started centuries before this and continued long after (Al-Jallad 2015, 17–18). Moreover, the tribe of Liḥyān seems to have continued to exist after the collapse of the Liḥyānite kingdom and after they left al-ʿUlā as their capital. The Lihyanites are mentioned in Islamic genealogical and historical sources (8th/9th centuries CE) as a branch of the Huḏayl, situated in the region north-east of Mecca in the 6th century AD. Muslim tradition does not seem to have preserved any accounts of their history beyond their name (Drewes and Levi Della Vida 1986 consulted 28–6–2018), making it very unclear how the Liḥyānite tribe remembered in the 8th and 9th centuries CE relates to the Liḥyānite kingdom of Dadān about a millennium earlier.

1.5.4.4 Aramaic inscriptions

Three Aramaic inscriptions found close to Taymāʾ have been used to date the end of the Liḥyānite kingdom (JSNab 334, 335, 337). The author of these inscriptions calls himself 'king of Liḥyān' (Winnett and Reed, 1970: 120). Based on paleographic considerations several datings of the inscriptions have been proposed. Jaussen and Savignac (1914: 221) consider the script to be an

[19] The word *ʾs¹kn* is left untranslated in (Macdonald, Al-Mu'azzin, and Nehmé 1996, 458) and the OCIANA database. The translation 'settlement/settled areas' is based on Al-Jallad (2015, 341).

[20] Note that all three inscriptions with the KRS sigla seem to refer to the same event, *s¹nt ws¹q ʿbdrb{ʾ}l lḥyn* 'the year *ʿbdrbʾl* confronted *lḥyn'* (OCIANA, 22-4-2018).

[21] *lḥyn* is more commonly found as a personal name in the Safaitic inscriptions. Compare for example (KRS 185) *l-lḥyn bn s¹ny bn s¹lm bn s¹ʿd* 'by *lḥyn* son of *s¹ny* son of *s¹lm* son of *s¹ʿd*' (OCIANA 22-4-2018).

evolution of the Aramaic script, which eventually resulted in the Hebrew square script and the Nabataean script. They very cautiously propose to date it to the second century BCE. Caskel, on the other hand, sees parallels with the Palmyrene script and proposes to date them to the first century BCE (Caskel, 1954:42 and note 125). Some take the inscriptions as evidence that the Lihyanites were overthrown by the Nabataeans, who then came to occupy the oasis (Caskel 1954, 42). Winnett mentions that the name of the author of this inscription is not one of the known Nabataean king's names. Based on this, he assumes that the author of the inscription was probably not a Nabataean king, but more likely an adventurer from the "Nabataean cultural zone north of Dadān" acting on his own behalf (Winnett and Reed, 1970: 120).[22] He does believe that the appearance of Nabataean graffiti in the area marks a change in cultural affiliations of the oasis (Winnett, 1970; 120). However, Macdonald has identified the script as a local variety of Aramaic 'Taymāʾ Aramaic', which developed at the oasis in the last third of the first millennium BCE (Macdonald forthcoming), showing that these inscriptions cannot actually be attributed to Nabataean influence at Dadān (Rohmer and Charloux 2015, 301).

An actual Nabataean inscription attested in Dadān is a grave inscription, dated to the first year of Aretas (IV) (CIS II, 1, 332), which corresponds to 9 BCE (Caskel 1954, 35). Caskel interprets this inscription as an indication for a brief Nabataean presence in the oasis, which marks the "disturbance" between the early and late Liḥyānite period. According to him, this 'political disturbance' explains the slight shift in the letter shapes used in each period (Caskel, 1954: 36).[23] However, as mentioned above, there does not seem to be any archaeological evidence showing direct contact between the Nabataeans and the Liḥyānite kingdom, suggesting the Liḥyānite kingdom may already have collapsed by the time the Nabataeans established their presence in the area (Rohmer and Charloux 2015, 309).

1.5.5 Dadān in the Bible

Not all possible clues to the dating of the Dadanitic inscriptions come from epigraphic data. There are also several Biblical references to Dadān. Dadān is mentioned in the Biblical genealogies in Genesis and Chronicles,[24] in which it is represented as a sibling of Sheba. This is generally assumed to refer to close relations between the two, either commercial (cf. Macdonald, 1997: 337–8) or tribal (Winnett and Reed, 1970: 113). A century or more after the inscription by Yariris (8th c. BCE) Ezekiel's prophecy mentions Dadān in a network of trading relations,[25] probably as middlemen for the trade in goods, possibly from Egypt, and as producers of saddle cloths (Macdonald, 1997: 342). In addition to this there are several other references to the place name.[26] Based on these references Winnett assumes that the oasis flourished in the sixth century BCE (Winnett and Reed, 1970; 113–4 and note 6).

[22] I would like to thank Michael Macdonald for bringing to my attention the recent discovery of an official Aramaic inscription from Taymāʾ dated to year 3 of *mšʿwdw mlk lḥyn* (previously only known from JSNab 334, 335, 337). This inscription suggests a more formal status of this 'king of Liḥyān' than Winnett assumed, based on only the graffiti available to him. Even though the discovery of this name in an official inscription is significant, I would still agree with Charloux and Rohmer that, since this person is only attested in Aramaic inscriptions from outside Dadān we cannot conclude he ruled in Dadan in the same way as the kings that are mentioned in the Dadanitic inscriptions (Rohmer and Charloux 2015, n. 6).

[23] See § 1.6.1.1 Paleography for a more elaborate discussion about the attempts to use of paleography to establish a relative chronology of the inscriptions.

[24] Gen. 10:6, 7; 25:3 and Chron. 1:9.

[25] Ez. 25:13; 27:15, 20; 38:13

[26] Jer: 25:23, 49:8

1.5.6 Archaeological evidence

As shown in the discussion above, the epigraphic data and historical sources have not produced any secure or precise dating so far. Therefore the King Saud excavation at the site of ancient Dadān (modern al-Ḫuraybah), and the results of the joint Saudi-French excavations of the residential area and necropolis at ancient al-Ḥigr (modern Madāʾin Ṣāliḥ) carried out over the past decades have been crucial in finding new evidence for our understanding of the history of the area (al-Said and al-Ghazzi 2013; Al-Theeb 2013; Nehmé, al-Talhi, and Villeneuve 2010; Nehmé 2011).

Based on the results of these excavations, Rohmer and Charloux suggest that there was a disruption in the history of Dadān in the 3rd century BCE (Rohmer and Charloux 2015, 313). In this period the site of tall al-Kaṯīb (al-Zahrani 2007) and the rural area of ḫīf al-Zahrah (Bawden 1979), which were connected to the oasis of Dadān, seem to have been abandoned (Rohmer and Charloux 2015, 311). It is unclear if a similar period of abandonment occurred at the same time at al-Ḫuraybah. However, the very low number of coins found at the site, especially compared to the high number of coins struck between the late 3nd and late 1st centuries BCE found at the site of ancient al-Ḥigr (Rohmer and Charloux 2015, 310), led Rohmer and Charloux to suggest that the site entered a phase of decline in this period and did not play a major role in the region anymore by this time (Rohmer and Charloux 2015, 311).

Very little evidence for Dadanitic presence has been found at the site of ancient al-Ḥigr. The only material pointing to Dadanitic presence at the site is some Dadanitic painted ware, found in the first layer of occupation dated between 6th and 4th centuries BCE. The inscriptions at Jebel Iṯlib point to a military presence rather than occupation of the site (Rohmer and Charloux 2015, 309). Based on the absence of clear evidence for a Nabataean presence at al-Ḥigr until the second half of the 1st century BCE and the presence of certain coins, they tentatively suggest that Nabataean control of al-Ḥigr may have been preceded by another tribal entity (Rohmer and Charloux 2015, 312).

1.6 Key elements of a Dadanitic inscription

When studying variation in the Dadanitic corpus, there are three main elements of the inscriptions in which most variation can be found. These are the script, specifically the letter shapes and manner of inscribing of the inscription; the genres of text that can be expressed and the different levels of formality that seem to have been associated with them; and finally the language used to compose them. This section offers a treatment of each of these key elements of variation, followed by a discussion of the evidence for a local scribal school and the implication this has for our understanding of this variation. It will offer a discussion of previous literature that engaged with these topics, and a methodological discussion on its relevance for the present work.

1.6.1 Script

The Dadanitic corpus is primarily defined by its script, although the term is usually also employed to refer to the language of the Dadanitic inscriptions. The two do not always have to go together, as "any script can, of course, be used to express any language (more or less efficiently)" (Macdonald 2000, 37). This is clearly illustrated by the large amount of linguistic variation attested in the Dadanitic inscriptions. For example, the verb *ṣll* 'to perform the *ṣll* ceremony' has been attested in no less than four variant forms: *ʾṣll*, *hṣll*, *ʾṣl* and *hṣl* (Sima 1999, 93) which all appear in identical contexts; numbers between ten and twenty can either be expressed by a 'teen-and-digit' or a 'digit-teen' system (Sima 1999, 118–20; but cf. Macdonald 2008, 213); and both *h(n)-* and *ʾ(l)-* forms of the definite article are attested (Farès-Drappeau 2005, 65). The language expressed in the Dadanitic texts does not

seem to be a homogeneous entity, raising the question whether it is even possible to talk about *the* Dadanitic language in the first place. The following section will focus primarily on previous scholarship concerning the use of paleography to establish a relative chronology of the texts. The script itself and the attested variation in letter shapes will be treated in more detail in Chapter 2 - Script and manners of inscribing.

1.6.1.1 Paleography

Dadanitic exhibits variation in its letter shapes, which has motivated scholars to propose a relative chronology of the inscriptions based on paleography (Grimme 1932; Winnett 1937; Caskel 1954; Farès-Drappeau 2005). This approach to Dadanitic paleography has been present in the field since the earliest treatment of the inscriptions and has been the most commonly accepted approach to the corpus since it was first proposed (Grimme 1932). More recently, Macdonald has persuasively argued, however, that the use of paleography to arrive at a relative chronology of inscriptions is untenable without the presence of firmly dated inscriptions to anchor the development of the letter shapes (Macdonald 2015).

All theories concerning a script based order of the inscriptions distinguish a 'Dadānite' followed by a 'Liḥyānite' period, although there are several theories as to the exact amount of stages of development of the script that can be distinguished and the dates attributed to these stages. This division was first proposed by Grimme (1932) and is based on the "altertümliche, an das Minäische erinnernde Formung" of the glyphs of an inscription mentioning *mlk ddn* 'king of Dadān' and the direction of writing[27] of a part of the corpus displaying the same type of 'archaic' letter-forms on the one hand, as opposed to the 'more developed' letter-forms of the inscriptions mentioning the tribal name *lḥyn* (Grimme 1932, 755) on the other. He extensively discusses the reading of what he called 'Dadānite' *g* which he distinguished from 'Liḥyānite' *g* (Grimme 1932, 754–55). It was assumed that the letters with a square base developed to become more triangular, until some even became disconnected (see Table 1 for an example). At the same time letters with a basic circular form were said to change into diamond shapes. Also the *mim* underwent a particularly significant change from two small triangles on top of each other towards a crescent shape .[28]

While Grimme (1932) focused mainly on the script and its stages of development, Winnett (1937) and Caskel (1954) discussed the dating of the periods more elaborately. Winnett proposed what is known as the 'long chronology' of the inscriptions, placing the Dadānite period between 6th–4th centuries BCE and the Liḥyānite period between 4th–2nd centuries BCE (Winnett 1937, 49–51). Caskel proposed the less accepted 'short chronology', which places the Dadānite inscriptions between 160–115 BCE and the Liḥyānite phase between 115 BCE–150 CE (Caskel 1954, 35–37) (see § 1.5 A brief history of Dadān above for a more detailed discussion on the dating of the corpus).

Caskel's 'short chronology' of the Dadanitic texts is largely based on the development of the script in which he distinguishes three script phases: Dadānite, early Liḥyānite, and late Liḥyānite. Based on the more pronounced differences he found between the Dadānite and early Liḥyānite scripts he concludes that early Liḥyānite should be seen as a completely new script, in which he saw evidence for a regime change at the oasis. Since the differences between early Liḥyānite and late Liḥyānite are less

[27] According to Grimme it is typical of the earlier Dadanite inscriptions that they could not only be written from right to left (as the Lihyanite inscriptions), but also from left to right (Grimme 1932, 755).

[28] For a complete overview of letter shapes and their subdivision into Dadanite and Lihyanite forms see (Caskel 1954, 33–34; and most recently Farès-Drappeau 2005, 109–11).

pronounced, he assumed that this points to a mere 'disturbance' in the power structure at the oasis (Caskel 1954, 35).[29] Caskel believed the Dadanitic script first developed as a symbol of independence after the collapse of the Minaean kingdom and Minaean control of the oasis ended (Caskel 1954, 36) (but see § 1.5.3 Minaic presence at Dadān on the relationship between the Minaeans and Dadanitic people). Farès-Drappeau (2005) discusses the paleography of the inscriptions at some length in her work on Dadanitic, which offers an overview of the main theories on the dating of the stages of different phases of script (Farès-Drappeau 2005, 113–24).[30] Her own paleographic analysis largely follows the proposal by Winnett (Farès-Drappeau 2005, 116–25).

As Macdonald (2015, 17–18) very carefully discussed, however, it is problematic to use paleography with corpora like Dadanitic to date the inscriptions. The most fundamental problem in using the Dadanitic inscriptions for this purpose is that none of the inscriptions are securely dated; neither in absolute terms nor relative to each other. Even the chronological division of the script into two phases, Dadānite and Liḥyānite, seems untenable. First of all, no distinction can be made between a Dadānite and a Liḥyānite script: 'Dadānite' letter-shapes occur in 'Liḥyānite' inscriptions and *vice versa*.[31] There are no inherent reasons to believe that a change in political power went hand in hand with a change in script as Caskel concluded (1954, 35), even if one would assume that there are different 'stages' of the Dadanitic script. One can imagine a scenario in which a foreign group conquers a region and brings their own, new script with them, but it is much harder to imagine why the new rulers of Dadān would choose to only slightly alter the existing script of the oasis when they came to power. As there is no logical reason or proof that script phase and regime should be equated, doing so only risks blurring our understanding of the relation between the texts and variation in script (Macdonald, 2000: 33).

Moreover, the fact that different forms of the same letter are often found in the same inscription, shows that these developments must have happened in parallel to each other (Macdonald 2010, 14), instead of one set of letter shapes replacing the other. This makes it problematic to use paleography to draw any firm conclusions about the relative chronology of the Dadanitic texts. It is probably possible to distinguish a general trend going from old letter forms, to inscriptions in a 'middle' variety with mixed letter forms and finally inscriptions with mostly late letter forms (Macdonald 2000, 33). The fact that old letter forms continued to be used after the development of the late letter forms makes it impossible, however, to conclude with any certainty that a single inscription with old letter shapes must be older than one containing later shapes. Until we know more about how the old and late forms are distributed across the corpus exactly, it needs to be kept in mind that motivations of prestige may have been involved in the choice of letter shape, similar to the use of archaic linguistic forms (see Chapter 7 - A quantitative approach to variation for the analysis of variation in linguistic features across the corpus).

1.6.1.1.1 Writing surface and the development of the script

The development of the variation in letter shapes likely developed through the use of writing on soft materials, as argued by Macdonald (2010, 12). Macdonald clearly shows how, for example, the *alif* develops from a square form with two small lines coming out the top, through a triangle shape with

[29] He identifies a brief Nabataean presence at the oasis as this disturbance (Caskel 1954, 35), see § 1.5.4.4 Aramaic inscriptions.

[30] See Macdonald (2010, and 2018) for the latest treatment of the Dadanitic paleography.

[31] E.g. JSLih 71, in which several different forms of the *alif* and s^1 occur. Cf. Macdonald, 2010; 12-14 for an explanation of the developments of the forms and examples.

two lines on top, eventually to two inverted chevrons above each other (Macdonald 2010, 13–14 and fig 3).[32]

Table 1 Schematic overview of the development shown in Macdonald (2010, 12)

These kinds of developments usually only occur when writing in pen and ink to facilitate speedy writing (Macdonald 2015, 7). There are even some examples of ligatures in the Dadanitic inscriptions, another hallmark of writing in pen and ink (Macdonald 2010, 14). Macdonald also suggests that the fact that almost all Dadanitic inscriptions are written from right to left could indicate that the Dadanitic script had been used to write on soft materials for some time before it was used to carve inscriptions in stone (Macdonald 2010, 13–14 and fig. 3), since unidirectional writing is really only beneficial to someone writing with pen or possibly a blade (Macdonald 2010, 12).

Interaction between different uses of writing may explain how the variant forms all ended up in the inscriptions carved in stone. Macdonald's (2015) distinction between the purpose of a text and the register of its script[33] is very helpful in understanding how scripts used on different materials could come to interact. He distinguishes texts that were meant for private use (like personal, or business letters, aides-memoires, and business accounts), from those meant for public use (like inscriptions on gravestones, inscriptions announcing a law, and published books) (Macdonald 2015, 3). As the register of the script Macdonald distinguishes a formal register, generally used for inscriptions in stone (including graffiti), and public documents on soft materials, and an informal register, used mostly for writing texts on soft materials, for example with pen and ink, or those cut into wax or wood with a stylus or a blade (Macdonald 2015, 4).

Features from the writing on soft materials are likely to be transferred to writing in stone by someone who is more used to writing on soft materials and tries to transfer his reading knowledge of the formal script to writing on stone, for example when leaving a graffito (Macdonald 2015, 7). In Dadanitic, however, we sometimes see different forms of the same letter co-occurring even in inscriptions executed in relief[34] (e.g. AH 235[35]). This shows that mixing of script registers was not only due to imperfect writing knowledge of the formal register - we can assume that a trained stone mason would be highly familiar with the formal register - but that mixing forms from the informal and formal registers of the script had apparently become perfectly acceptable in official inscriptions as well (Macdonald 2010, 14). So while interference of the informal register may explain the point of contact between the two registers, it does not explain all the mixing of letter forms attested in Dadanitic.

[32] Note that the chronology of the development is the same as that used for paleographic chronology of the inscriptions by earlier scholars (e.g. Grimme 1932; Caskel 1954). However, Macdonald (2015) shows that this is connected to a different medium than the inscriptions on stone and, therefore, cannot be used to date the inscriptions relative to each other.

[33] Note that the 'script register' that Macdonald distinguishes is different from the 'register of the inscriptions' I will distinguish in the quantitative analysis of the variation in part two of this work. While both have to do with the perceived formality of a text, Macdonald's distinction focusses on the writing material and tools used for inscribing. The registers distinguished in part two of this work, do not relate to the tools or techniques used to make an inscription, but focus on content and purpose of the inscription (see Chapter 3 - Genres and Compositional Formulae and Chapter 7 - A quantitative approach to variation).

[34] See the next § 1.6.1.2 Script style and socio-economic status for a more elaborate discussion on different styles of inscribing.

[35] In line 1 the legs of the *alif* are not touching at the base, but in the next line, they form a closed triangle.

1.6.1.1.2 Scribal schools and paleography

The need for firmly dated inscriptions and uniformity of writing material is not the only prerequisite for the establishment of a reliable chronology of development of letter shapes Macdonald identifies in his article. He also stresses that importance of the presence of an established writing tradition "in which a tradition of writing in a particular way has been passed on from one generation to the next" (Macdonald 2015, 17).

The existence of a scribal school for tracing the developments of the scripts ensures the establishment of a stable environment, promoting consistency and stability in letter forms and writing materials in the production of writing. When trying to establish a relative dating of letter shapes a stable tradition of writing is necessary to ensure that when we compare variation in the letters shapes it produced, it is really due to development of the script and not to a number of other uncontrolled varying features of which the outcome is difficult to predict. Such variables can be due to the individual scribe, like their mood or personal taste, or their level of learning, it can be due to differing local traditions, or even minor variation in the writing material available, etc. (Macdonald 2015, 23). The likely presence of a writing tradition at Dadān (see § 1.7 Scribal school and variation) sets this corpus apart from other ANA corpora in which writing skills seem to have been passed on in a more informal manner (Macdonald 2010, 15; Al-Jallad 2015, 2–10), which gives us the opportunity to approach Dadanitic letter shapes as a coherent whole showing internal developments. This has enabled Macdonald, for example, to divide the general letter shapes into different developmental stages (Macdonald 2000, 33). The likely use of different writing materials within the oasis and the use of different surfaces to produce inscriptions, ranging from prepared slabs to rough rock face, and the lack of securely datable inscriptions, make it unlikely, however, that we will ever be able to establish a comparative dating of the Dadanitic inscriptions based solely on their letter forms. This study will be an important step, however, towards understanding the writing culture that produced the inscriptions, laying the groundwork for future inquiries into Dadanitic paleography.

1.6.1.2 Script style and socio-economic status

The Dadanitic inscriptions also exhibit variation in their execution. These different manners of inscribing seem to represent different levels of formality, and probably cost, associated with the execution of the inscription. While inscriptions in relief (as in Figure 1) are the most distinguishable, Dadanitic inscriptions were also deeply incised into the rock, chiseled, or pounded onto the rock (for a full discussion and examples of the different techniques see Chapter 2 - Script and manners of inscribing). The inscriptions deeply incised into rock face or stone objects and those executed in relief were made by skilled craftsmen who sometimes even signed their work (e.g. JSLih 082 and Al-Ḫuraybah 06). These texts were probably commissioned (Macdonald 2010, 7). Chiseled and pounded inscriptions required less skill to produce. This does not mean that all pounded inscriptions are graffiti however. Many of the dedicatory *ẓll* inscriptions, which have an official character and were firmly entrenched in the writing culture of the oasis, were pounded onto the rock. This illustrates that there is clearly not a one-to-one relationship between the purpose and content of a text and the level of execution of the inscription. It is possible to see a general trend of using script registers that require less skill for graffiti while reserving more skilled manners of inscribing for more official inscriptions (see Chapter 2 - Script and manners of inscribing and Chapter 7 - A quantitative approach to variation), despite the lack of a direct relationship between register and purpose.

1.6.1.3 Graffiti vs. commissioned texts

How, then, do we distinguish between graffiti and more official texts? Graffiti can generally be described as privately produced inscriptions or texts, made on private initiative, left in a public space (Macdonald 2015, 8; Milnor 2014, 5).[36] This definition clearly distinguishes graffiti from commissioned texts which were executed by a professional mason and their text probably drawn up by a professional scribe,[37] which has implications for the expected level of execution of the inscription both in terms of its language and physical form. In addition to this, the fact that graffiti are personal statements means that their content and formulations are in principle not bound to the same restrictions as the highly formulaic official inscriptions, even though they were clearly influenced by the structure and formulae of the official inscriptions. Therefore, a graffito often contains elements that do not occur in formal inscriptions, such as unique phrases or formulations (e.g. JaL 016 a), or references to the act of inscribing itself (e.g. AH 256). See Chapter 3 - Genres and Compositional Formulae for a complete overview of common phrases and content of the inscriptions.

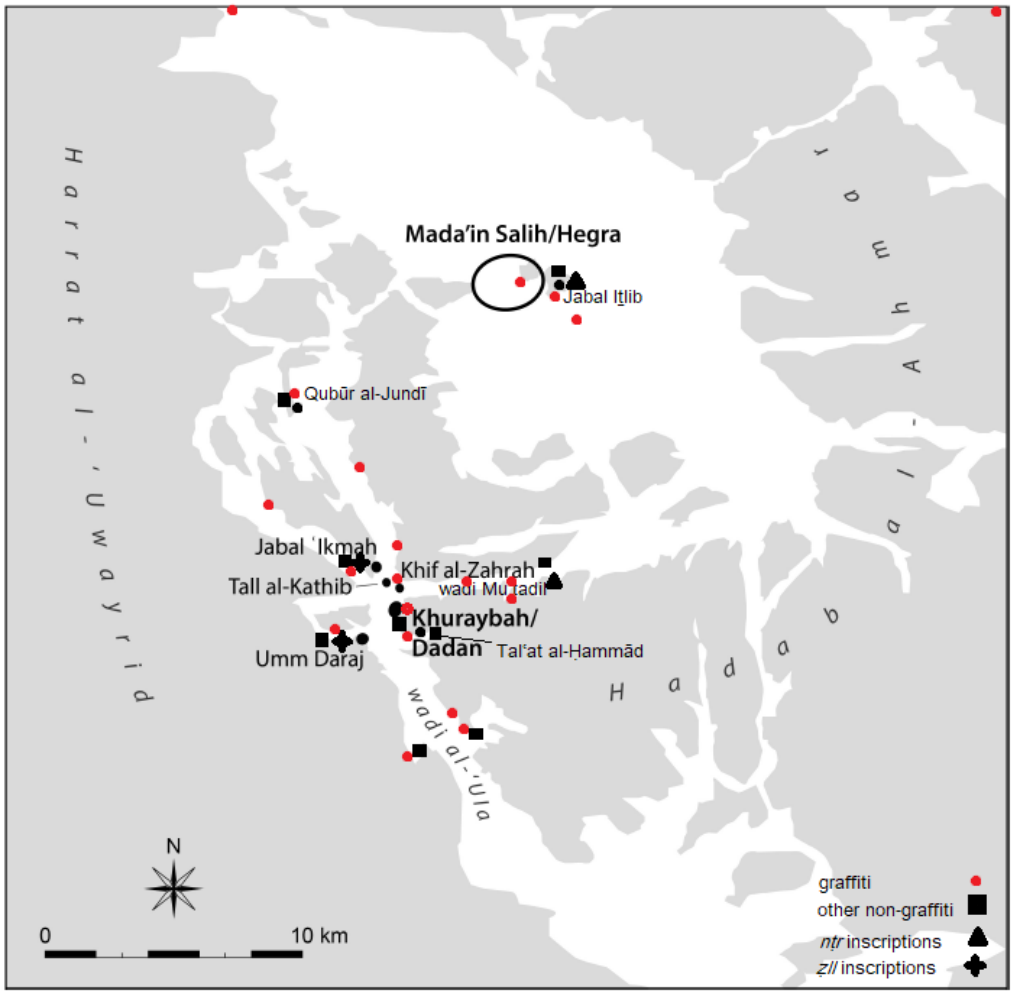

Figure 7 Map showing the approximate distribution of different types of inscriptions in the landscape. Map adapted from Rohmer and Charloux (2015)

[36] While Milnor uses this general description of graffiti, she also cautions that the category 'graffiti' should be evaluated in its cultural and historical context. As ideas of authorship and public and private property change over time, so do graffiti, both in their appearance and in what can be understood to make up the category in the first place (Milnor 2014, 4).

[37] For a more elaborate discussion on the possible role of a scribal school at the oasis see § 1.7 Scribal school and variation.

1.6.1.3.1 Graffiti in the landscape

The division between formal inscriptions and graffiti is further supported by how the inscriptions are spread out in the landscape, as can be seen in Figure 7. While the non-graffiti are clustered around a few specific places mostly close to the oasis itself, graffiti seem much less bound to specific places in the landscape.[38]

1.6.2 Genre

Another point of variation in the Dadanitic corpus is the genre of the text. The genre of a text is determined by its content and is closely associated with particular formulae. This closely follows the definition of genre as outlined in Biber and Conrad (2009, 2). When considering the genre of a text they take the purpose and situational context of a text into account and also include the conventional structures that are part of a specific variety of text into their analysis. In this work, the conventional structures will be referred to as a text's formulaic parts. Note that in order to be able to say anything meaningful about the interaction between genre and linguistic forms attested in it, linguistic variables (as described in Chapter 7 - A quantitative approach to variation) are not used to determine the genre of a text. Whether an inscription includes an *h*-causative or a ʾ-causative is not used to determine whether it should be considered a graffito or a dedicatory inscription, for example.[39]

While the general structure of the texts, starting with personal names, followed by a dedication and ending in a petition for protection from a deity, is comparable to that found in other ANA and Ancient South Arabian (ASA) corpora (Al-Jallad 2015, 201–21; Avanzini 2017, 97–98), the specific formulae, the *ẓll* ritual, and the deity *ḏġbt* are unique to the Dadanitic inscriptions.[40] The main distinction in genre is that between graffiti and more formal inscriptions, as discussed above (§ 1.6.1.3 Graffiti vs. commissioned texts). Within the more formal inscriptions, several different types of inscriptions can be distinguished within the Dadanitic corpus, such as dedicatory, *ẓll*, building, and legal inscriptions. Each genre and associated formulae will be discussed in detail in the Chapter 3 - Genres and Compositional Formulae.

Using the category of genre as one of the variables in the quantitative analysis in part II mostly functions as a control category for the hypothesis that the more complex carving techniques were reserved for more formal and more expensive inscriptions. If this hypothesis is correct, the formality of the inscription might also have a relationship to the register of the language used in it. In other words, if genre and manner of inscribing always have a similar relationship to the linguistic variants occurring in the inscriptions, they likely represent the same or similar cause: most likely register.[41]

[38] The *nṭr* inscriptions are a notable exception. They are found almost exclusively at Jabal Iṯlib, a rock outcrop to the north east of the oasis, except for one that was found at Wādī Muʿtadil. Given that the authors of the inscriptions seem to have acted as guards, it is not surprising that their inscriptions all cluster in a favorable look-out place such as Jabal Iṯlib. They do not only stand out as a group due to the content and location of the inscriptions, but they also all share the merger of *ẓ* and *ṭ* in the verb and 5 of the 19 *nṭr* inscriptions share a particular style of engraving (see Chapter 2 - Script and manners of inscribing).

[39] This is similar to the use of genre in Taavitsainen (2001, 140) who proposes to distinguish a linguistically based category 'text type' from a non-linguistically based 'genre'. Even though the use of specific linguistic features seems to have been preferred in certain genres of inscriptions (see Chapter 7 - A quantitative approach to variation), there are no features that are exclusively used with specific genres. Therefore there is no clear difference in a linguistically motivated 'text type' distinct from a content and formula based 'genre'. Because of this, I will not use a separate category 'text type' in my analysis of Dadanitic.

[40] See chapter Chapter 3 - Genres and Compositional Formulae for a complete overview of all specific formulae used in the Dadanitic inscriptions.

[41] Here register will be used to refer to the social hierarchy of the inscriptions. In register studies and sociolinguistics the term is generally used to indicate 'situational language use' (Taavitsainen 2001, 141), in other words, how people's

However, one can also imagine that specific genres came with their own formulae, possibly containing specific linguistic features as well. This is clearly demonstrated by the *nṭr* inscriptions for example. In § 7.1.2.2 Register indicators the relationship between genre and register will be treated more elaborately.

1.6.3 Language

There is significant linguistic variation in the Dadanitic corpus, as already mentioned in § 1.6.1 Script. Some of the earliest scholars show the variation in their grammatical sketches or editions of the inscriptions, but do not attempt any explanation (e.g. D. H. Müller 1889, 13–14; Grimme 1937, 300). More recent works by Farès-Drappeau (2005) and Sima (1999) offer some brief comments on the linguistic variation of the inscriptions, but do not focus on it. Sima (1999) suggests that the *h*-causatives were probably 'on their way out', based on their low number of occurrences, implying a chronological development (Sima 1999, 117). One of the reasons even scholars who believed Dadanitic should be divided into several different phases based on paleography (see § 1.6.1.1 Paleography above) did not connect the linguistic variation to the variation in letter shapes is that the varying forms did not neatly line up with the proposed paleographic divide. Grimme, for example, placed JSLih 063 (containing *ʾdq*), JSLih 062 (containing *hdq*), and JSLih 049 (containing *hwdq*) in the later 'Liḥyānite' phase based on their content and letter shapes (Grimme 1937, 300).

Taking a different approach, Farès-Drappeau proposes that the variation in the form of the definite article is due to synchronic linguistic diversity at the oasis (2005, 65–66), but she does not offer any explanation for the other points of variation.[42] Macdonald also recognizes multilingualism at the oasis and classifies several inscriptions as mixed Arabo-Dadanitic texts (e.g. JSLih 071 and JSLih 276 in Macdonald 2000, 52–53), reflecting substrate influence of Arabic within the Dadanitic inscriptions. The main distinguishing feature in these inscriptions is the use of the definite article *ʾl-* as opposed to the more common *h-*. This is somewhat problematic, as Al-Jallad has convincingly argued that the form of the definite article is not a reliable way to classify a language (Al-Jallad 2018, 13–16; 2015, 10–11 and 16–17). However, the actual presence of an Old Arabic inscription in Dadanitic script (W. Müller 1982; Macdonald 2000, 50; Fiema et al. 2015, 409) shows that Arabic substrate influence cannot be excluded as a possible cause for the use of the definite article *ʾ(l)-* at the oasis (Al-Jallad 2018, 23–24). Dadanitic itself should probably not be classified as a form of Arabic, as it contains several features that cannot be reconstructed for Proto-Arabic.[43] Therefore, it is most likely a sister language of Arabic and did not descend from Proto-Arabic (Al-Jallad 2018, 21–24).

1.7 Scribal school and variation

So far, this chapter has explored some of the key characteristics of the Dadanitic inscriptions and the cultural environment in which they were produced. But how do these features inform our understanding of literacy at the oasis? Who was writing in Dadān and how were they taught how to write? Understanding the status of literacy at the oasis and how the inscriptions were produced is

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language use changes depending on the situation in which they use it, which can include different social dynamics, different media (written or spoken language), etc. (Ferguson 1994, 16). Since the Dadanitic corpus only reveals the language use in one specific medium, register will primarily relate to the level of formality of the inscription.

[42] Farès-Drappeau also refers to Robin's (2001) proposal that there might have been a north Arabian koine that developed from the trade contacts with the south of the Peninsula (Farès-Drappeau 2005, 65–66) again referring to multilingualism in the region.

[43] Al-Jallad mentions the following features in Dadanitic that cannot be reconstructed for proto-Arabic: the *h*-causative, the anaphoric pronoun *hʾ*, the form of the feminine ending, the form of the dual, the preposition *ʿdky*, and the form of the numerals (Al-Jallad 2018, 21–24).

crucial to our approach to the language used in them. Even though there is little direct evidence available to answer such questions, this section will bring together available information to sketch a picture of the status and use of literacy and scribal culture in ancient Dadān.

1.7.1 Cultural context

The development of the Dadanitic script (see Table 1), and the contact through commerce with other literate societies from the south of the peninsula, Egypt, Mesopotamia and the Levant make it very likely that writing on perishable materials was part of day-to-day life in Dadān. Therefore, Dadān can probably be considered a literate society (Macdonald 2010, 14) in the sense that it relied on reading and writing for the functioning of its government and commerce (Macdonald 2005, 49).[44] Even though no documents on perishable materials have been found yet, contracts, letters and administrative documents were probably drawn up regularly at the oasis. The existence of texts written for different purposes (formal and informal) and representing different types of text, ranging from private letters to official legal documents, may explain the point of contact between different forms of written language that led to the mixing of forms in the inscriptions, similar to the process suggested for the mixing of letter shapes (Macdonald 2015, 7 and see § 1.6.1.1 Paleography). If people who were more used to writing private documents, like letters or private notes, made an attempt at carving a graffito they might try to imitate the linguistic style associated with the monumental inscriptions, comparable to trying to use the formal script for an inscription. Such an attempt at trying to convert imperfect reading knowledge into writing knowledge may lead to similar mixing of forms as Macdonald suggested for the use of the script (Macdonald 2015, 7). As we know from, for example, the Sabaic material the linguistic register used for private letters is often a lot more progressive than that used for monumental inscriptions (Stein 2011, 1048). The accidental combination of both registers in the writings of those not used to writing on stone may explain how different layers of historical forms ended up in the same register. It is interesting, however, if at some point different registers of both script and language existed, how their mixing became widespread enough to become acceptable, even for the more formal registers. To answer this question, it is helpful to turn to the spread of literacy and how people were trained to read and write.

If the use of writing was indeed so widespread in ancient Dadān, this suggests that professional scribes were employed and trained in the oasis. Even though it has been argued that learning to read and write an alphabetic writing system is simple enough not to require any formal education (e.g. Jamieson-Drake 1991, 9:154; but cf. Rollston 2010, 92),[45] setting up formal documents such as letters, contracts, deeds and other legal documents would require expertise that goes beyond just knowing the letters. For example, based on comparisons with scribal education in Mesopotamia and Egypt, Van

[44] Macdonald uses this this term to distinguish it from societies such as those which produced the Safaitic and Hismaic inscriptions which he termed non-literate societies. These societies seem to have had high rates of individual literacy, as evidenced by the large amounts of inscriptions left in these scripts, but they seemed to employ writing primarily for purposes that were not related to the functioning of society, such as record keeping, drawing up of contracts etc. He proposes to use the term illiterate only for individuals who could not read or write and not for societies as a whole. This distinction is a very useful one related to the use of writing in oasis towns and by nomadic groups in pre-Islamic Arabia. This does not mean that Macdonald would suggest a sharp divide between literacy and illiteracy within literate societies. This divide has been challenged for decades in literacy studies as can be seen for example in Chamberlin's analysis of hunting practices of hunter gatherers as reading practice (Chamberlin 2002). For an overview of the development of the field of literacy studies see Street (2009).

[45] The material attested at Ugarit clearly shows a discrepancy between the amount of teaching materials and practice text for Akkadian cuneiform as opposed to those in the Ugaritic alphabetic cuneiform, with the Akkadian cuneiform material forming the vast majority of the recovered material. This seems to confirm that learning the alphabetic script took less effort, which would open up the potential for the development of rudimentary literacy (Schniedewind 2013, 105).

der Toorn (2007, 98) argues that Hebrew scribes did not only learn the 22 letters of the Hebrew alphabet, but were also trained to become familiar with the language use and terminology associated with specific fields, such as notary documents and documents for litigation (Van der Toorn 2007, 99–100). In addition to this, scribes were likely also the ones responsible for book keeping, which would not only require them to know how to write but also to know how to draw up a balance sheet and to perform some basic arithmetic (Van der Toorn 2007, 100). Besides skills in drawing up different kinds of documents, scribes would also learn to prepare their writing materials. In the case of scribes in ancient Israel these would include reed pen, papyrus or parchment, and a stylus (Rollston 2010, 112). Since we do not know what perishable materials were used for writing in Dadān, these materials were not necessarily exactly the same, but anyone writing regularly would need some knowledge of how to produce some of these tools, unless all writing materials were imported ready to use, which would have been very costly. So even though the acquisition of basic reading and writing skills may have been relatively easy for an alphabetic script such as Dadanitic, a society in which writing was used for more than personal notes and lists would still require some professionally trained scribes to produce the more formal documents and writing equipment. In this light it may be useful to think about just how many scribes an oasis like Dadān would need. Schniedewind reminds us that "writing is fundamentally a luxury good" (Schniedewind 2013, 118) and that it needs a degree of economic and cultural support to thrive. So how many documents would a society like Dadān's need and how many could people afford to commission? Given the relatively small reach of the kingdoms of Dadān and Liḥyān, the demands for writing were probably not massive and one family of scribes in which knowledge would be passed on from father to son may have been sufficient to supply the oasis with the official writing it needed. It is clear that it cannot be compared to the bureaucratic apparatus needed realms such as those of the Babylonians or ancient Egyptians.[46]

1.7.2 Evidence from the inscriptions

Additional support may be found in the inscriptions themselves. Based on the attestation of the word *h-s¹fr* 'the writer' in Dadanitic, there seems to have been a distinct difference between the mason who produced the objects of the inscription and the scribe who set up the text, at least for a few of the inscriptions. There are two inscriptions that mention *h-s¹fr* 'the writer' of the inscription and his name at the end, alongside 'the artisan' *h-ṣnʿ* who presumably cut the inscription (JSLih 082 and AH 220).[47] This slot in the formulae is usually reserved for mentioning the craftsmen involved in the production of the inscription. They are always mentioned separately from the persons who dedicated the inscription at the start of the text (see § 3.2.5 Signature). This supports the reading of *h-s¹fr* in this position as a professional title. Furthermore, the fact that *h-s¹fr* and *h-ṣnʿ* are both used in the same inscription tells us that the one who cut the inscription was apparently a different person than the one who wrote the text. Unless we assume that the fact that the writer is mentioned in only these two inscriptions points to the unusual circumstances under which these two inscriptions were made. Since it is quite common, however, not to mention the artisan who cut the inscription either, even in inscriptions executed in relief, it seems unlikely that anything only mentioned sporadically was necessarily out of the ordinary.[48]

[46] See Van der Toorn (2007, 54–73) for an overview of scribal practices and training in Mesopotamia and Egypt.

[47] An often used argument for the existence of a Hebrew scribal class is the use of the term *sōpēr* (√S¹FR) to indicate someone's profession (Van der Toorn 2007, 78–81).

[48] The verbs *s¹ṭr* (JaL 061f) and *s¹fr* (Ǧabal Iṯlib 08; JSLih 128), both meaning 'to write', are mentioned in inscriptions as well, but do not seem connected to the professional production of a text, but to the act of inscribing a graffito.

As for the training of individuals to read and write and produce inscriptions, there is only one abecedary attested in the Dadanitic script (JSLih 158). The inscription contains several badly formed glyphs and repetitions of the same sequence of letters, which led Macdonald to the conclusion that it probably represents a writing exercise (Macdonald 1986, 113). The presence of repeating glyphs and badly formed letters in several other inscriptions on the same rock face suggests that it was used as a practice site (Macdonald 1986, 115). Since this is the only such practice site known so far, it can tell us little about the organization of schooling in the oasis unfortunately. It is unclear whether this site was used for the official training of masons, or by private persons.

1.7.3 Graffiti and the spread of literacy

While there seems to be some evidence for the existence of a scribal class at Dadān, the presence of a large number of graffiti in and around the oasis[49] suggests that literacy was much more widespread than a small cadre of professional scribes. In the context of ancient Israel, Schniedewind points to the growing number of graffiti and attestations of writing in an administrative context, such as found on seals, seal impressions, weights and economic texts in the period between the 8th and 6th centuries BCE to argue for what he calls "the democratization of writing" (Schniedewind 2013, 99–105). He links this spread of the ability to write to a loss of a strictly controlled written standard. As writing is no longer confined to a small scribal elite, their ability to control the written standard diminishes, as evidenced by the increase in inconsistencies in grammar and spelling in this period in ancient Hebrew writing (Schniedewind 2013, 100). In the Dadanitic situation there is currently no way to tell whether there was a process of democratization going on or whether literacy was relatively widespread within the community from the beginning of the production of the inscriptions, as we cannot date the inscriptions relative to each other. There are some interesting parallels, however, between the situation as described by Schniedewind and what we see in the Dadanitic corpus, in the existence of large amounts of graffiti accompanied by a remarkable amount of variation in grammar, letter shapes, and orthography.

While the presence of large amounts of graffiti in the area of Dadān suggests that literacy probably spread beyond a small group of professional scribes, this does not mean that everyone in the oasis could read and write, or that everyone reached the same or similar level of literacy. Here the concept of craftman's literacy seems helpful. Harris defines craftman's literacy as "the condition in which the majority…of skilled craftsmen are literate, while women and unskilled laborers and peasants are mainly not" (Harris 1989, 8). Within such a larger group of literate individuals within society the majority may only have achieved what Schniedewind defines as "signature literacy or craft literacy", a level of literacy sufficient for practical purposes such as signing one's name, writing lists and receipts and possibly the ability to read short letters (Schniedewind 2013, 105). This level of literacy is not comparable to that of a trained scribe, but would be sufficient to leave a short graffito.

The amount of variation that is starting to occur in Ancient Hebrew writing between the 8th and 6th centuries BCE leads Schniedewind to conclude that there was no strong Hebrew scribal institution present in Iron Age Judah (Schniedewind 2013, 117). When we compare this to the Dadanitic situation this may lead one to conclude there was likewise no strong scribal tradition in Dadān either, as we have plenty of variation in all layers of writing. However, this is based on the supposition that

[49] In fact, graffiti make up the bulk of the attested inscriptions. 1447 of 1844 inscriptions of which the genre could clearly be identified are graffiti (see § 7.1.2.2.2 Genre).

the goal of any scribal tradition would be uniformity, which may not have been the case. Relatively widespread literacy can help explain, however, how a certain amount of variation entered the written norm in the first place and enabled it to develop and maintain some connection to the spoken language. The incorporation of more progressive linguistic forms such as the ʾ-causative and the collapse of word final triphthongs which we see reflected in the spelling of *rḍ-h* 'may he please him' (see § 4.3.2 /aya/ for a complete discussion of this development) most likely followed these developments in the spoken language and eventually became the most common form in writing as well. This does not mean that the written language was simply a transcription of the spoken language, as we can see for example from the very occasional spelling of *ṯ* for *ẓ (e.g. in AH 009.1, see § 4.6.3 *ẓ* > *ṯ*). The loss of *ẓ seems to have been a feature of at least some spoken register at the oasis, but it clearly had not made it into the written norm.

Even though the influence of literate individuals from outside the scribal elite may have opened up the written tradition to be able to incorporate a certain amount of variation and flexibility, this does not necessarily mean that there was no scribal tradition present at all. An interesting point of comparison to this may be the monumental Sabaic inscriptions from the south of the Peninsula, which can be divided into an Early, Middle and Late period. Evidence from Sabaic letters written on palm sticks, however, shows that the spoken language changed at a more rapid pace. There we find, for example that the glyph *ḍ* is often used to represent *ẓ, while they were consistently kept apart in monumental writing until the end of the tradition (Stein 2011, 1048). So despite the gradual implementation of linguistic changes in the monumental tradition, the private documents on perishable material confirm that it was quite far removed from the spoken language. Besides the occasional use of *ṯ* for *ẓ in Dadanitic, there are several other specific forms to be found in the corpus that suggest that the author of the text was aiming for a written standard he, or she, had not quite mastered. For example in the inscription in which both an *h*-causative and a ʾ-causative occur (Al-Saʿīd 1419/1999: 4–24, no. 1, side 1-2); the inscription in which two dedicants agree with a dual verb but plural resumptive pronouns are used (U 019); and the inscription which is completely in the singular except for the resumptive pronoun in the blessing formula in the dual (AH 120).

1.7.3.1 Interaction between scribes and the masses

Even though literacy seems to have been too widespread for a small scribal class to have maintained complete control of the written standard, people were clearly not simply transcribing their spoken language, and there was some form of written standard present. From the likely use of writing for bureaucracy and the possibility to employ a special scribe to set up an inscription (as evidenced by JSLih 082 and AH 220), it seems clear that there were trained scribes present at the oasis. They would have been trained in the "proper" use of the language, including grammar and orthography. Their knowledge of the language and the highly formulaic nature of the inscriptions in general would probably have been enough to establish a core scribal code, which likely included knowledge of less common grammatical forms and phrases. At the same time, there was probably also a group of people outside this cadre of professionally trained scribes that knew how to read and write to some extent (as evidenced by the large amount of graffiti present at the oasis). The common use of writing by such less highly trained individuals may explain how variation entered the written record and possibly even pushed it to become more flexible and incorporate more progressive linguistic and paleographic forms, while the presence of highly trained individuals ensured the continued presence and knowledge of more archaic linguistic forms within the written code. Considering the language of the inscriptions as a written and learned standard, which differed in some ways from the spoken register has

methodological implications for the approach of the description of the language of the inscriptions and how to deal with the variation found within them. This will be discussed in more detail below in §1.7.5 Methodological concerns - Analyzing the language of a scribal school.

1.7.4 Expected patterns of variation in a written code

The historical context and evidence from the content and language of the inscriptions make it likely that not only the physical production of the text on stone was commissioned, but also the drawing up of the text itself could be taken care of by a trained professional scribe. While there are two inscriptions that mention both the scribe and the mason of the text, it is unclear whether they represent the usual division of labor. Both, having a trained scribal class and the use of commonly known standard formulae would have a standardizing effect on the language.[50] One of the expected effects of using standardized language and formulae to write, is that the language becomes resistant to change and will likely develop at a slower rate than the spoken language, creating an environment in which the spoken and written registers of the language can get separated from each other to some degree.[51] The assumption that the variation in the corpus is due to the archaic nature of the language of the inscriptions, implies that most of the inscriptions will contain more archaic linguistic forms, with occasional interference of more progressive linguistic forms from the spoken language. However, this is not the general distribution of the linguistic variants in Dadanitic. There we see that the linguistically more progressive forms are the most common, while most of the variant, 'infiltrating' forms are linguistically archaic.[52] Since the oasis of Dadān was an important trading hub, it was a multilingual place, as evidenced by the presence of both Minaic and Aramaic writing at the oasis in addition to the Dadanitic inscriptions. Given the multilingual nature of Dadanitic society this distribution of linguistic forms could indicate that the written standard was based on a more linguistically progressive language than (one of the) spoken language(s) at the oasis.[53] If the variation in the Dadanitic corpus is indeed due to such a difference between written and spoken language, the higher prestige forms should occur relatively often in more expensive and higher register texts. Presumably someone who could pay for a good mason to produce a beautiful inscription would also want the language of the inscription to be sophisticated and employ an individual that could be trusted to produce a good text. Infiltration from the spoken language, in this case reflecting the more archaic linguistic forms, is then expected to occur more often in informal inscriptions, where the formality of the language is of less concern, or in more poorly made inscriptions. However, upon closer inspection, the opposite seems to be the case again. While the archaic forms are indeed the less common forms, they are more closely associated with higher register inscriptions than with graffiti.

Alternatively, variation may be due to diachronic change. Many of the linguistic variants display a form that is linguistically more archaic and one that is more developed. It is therefore also a logical

[50] Note that it seems that a writing culture with standard compositional formulae can also develop without the existence of scribal schools, as it did in the Safaitic and Hismaic inscriptions for example (Al-Jallad 2015, 3).

[51] We can see this for example in the variation attested in the Aramaic from the Achaemenid period as described by Folmer (1995). A clear example can be found in the letters belonging to the Yedaniah archive, where some scribes diverge more from the archaic standard (for which Folmer used the Arsham letters on leather) than others (Folmer 1995, 693). The higher degree of formality of more archaic forms is further supported by variation in language use across different genres of text with legal texts, for example, containing more archaic spelling than private letters (Folmer 1995, 696).

[52] For an overview of the absolute number of occurrences of variant forms see Chapter 7 - A quantitative approach to variation.

[53] An example of a situation where the local language is more archaic than the high prestige written language can be found in the Hermopolis letters, which display influence of the more linguistically progressive Achaemenid imperial Aramaic. The distribution of the varying forms is different, however, with the infiltrations of the high prestige form being the minority (Gzella 2011, 582–83).

possibility that the variation in the corpus reflects diachronic change rather than synchronic variation. If this is the case, we would expect to find that archaic linguistic forms cluster together, possibly even to the exclusion of some of the more progressive forms, in case one form ceased to be productive before another developed. It seems indeed the case that certain archaic linguistic forms tend to occur together within individual inscriptions. In addition to giving new insight into the mechanisms underlying variation in the corpus, this may also cast new light on the previous proposals about the chronological development of the script.

1.7.5 Methodological concerns - Analyzing the language of a scribal school

In § 1.6.1 Script the question was posed whether it is even possible to speak of the Dadanitic language, given the amount of linguistic variation attested in the Dadanitic corpus. As discussed in the previous sections of this paragraph, the variation indeed suggests that the spoken languages of the authors of the inscriptions were not homogeneous, probably due to both synchronic variation and diachronic change. However, it seems possible to distill a written language from the bulk of the inscriptions. The presence of trained scribes at the oasis means that a description of the language of the inscriptions is really a description of the language of the writing tradition. In this light, deviations from standard conventions form invaluable evidence for the linguistic background of the person who composed the inscription and the spoken language(s) at the oasis. The investigation of the language of the Dadanitic inscriptions in Chapter 2 - Script and manners of inscribing through Chapter 6 - Nominal and Pronominal Morphology will therefore aim to identify both the most commonly used forms in the writing tradition and the less common varying forms, both in grammatical features and formulaic parts. Whenever there are two variants of what has to be the same form (e.g. the *h*- and ʾ-causatives) there is always one form that is clearly the most common, in terms of number of attestations, and one that is the variant. These more common forms are the frame of reference for our understanding of the core of the Dadanitic writing tradition and as such they can anchor the discussion of any variant forms.

Forms that fall on the periphery of the writing tradition include unique words, or forms that are used in uncommon or unique contexts, and personal names. Since the writing formulae are part of the writing tradition of the oasis, the spellings of the forms that fall within the common formulae were also likely a part of the tradition. This is observable in the relative consistency of the orthography in these inscriptions. This also makes it more likely that when we do see repeating alternative forms in these formulaic environments, they do not reflect random variation due to uncertainty about the existing spelling conventions, but represent phonologically or morphologically different forms.

Another issue that needs to be kept in mind - especially when describing the orthography and phonology of Dadanitic (Chapter 4 - Orthography and Phonology) - is that we have no transcriptions of Dadanitic language in other scripts like Greek for example.[54] This sets the Dadanitic corpus apart from corpora like Nabataean and Safaitic. As a consequence a description of the phonology of Dadanitic has to rely solely on the orthography of the inscriptions to make inferences about the phonology. The use of *matres lectionis* to write final long vowels, for example has implications for the status of the (word final) triphthongs. However, the interpretation of the value of possible *matres lectionis -y* and *-w*, also depends on our understanding of the development of word final diphthongs and triphthongs. To avoid circularity we therefore need additional evidence, for instance from the use

[54] There may be two Minaic inscriptions at Dadan which include several borrowings or code-switches to Dadanitic JSMin 145 and JSMin 166 (Kootstra 2018b).

of *matres lectionis* in environments where they do not represent an etymological diphthong or triphthong (e.g. the use of *-y* to represent the first person possessive suffix /-ī/). Whenever such conclusive forms are not attested in the corpus, the available evidence will be provided as completely as possible and the different possible explanations of the data will be discussed.

1.7.5.1 Evidence from personal names

Personal names cannot tell us about the synchronic grammar of the language, but they can shed light on the orthographic practice. As Macdonald (1999, 254–57) has thoroughly discussed, names do not necessarily reflect the language of their bearer. They are often linguistically archaic and can 'travel' from language to language (Macdonald 1999, 255). This also has implications for the use of personal names to say anything about the phonology or orthography of a language. Even though we can use names to say something about the phonology of the language of their bearer,[55] the fact that they are often borrowed from other languages still needs to be taken into account.[56] Someone mentioned in a Dadanitic inscription with the name *nṭr* (JSLih 079), for example, does not necessarily tell us that the language this person spoke had merged *ẓ and *ṭ, it is also possible that his name was taken from another language that had merged the two, like Aramaic.

There are other examples, however, when the spelling of a name does reveal something about the orthographic practices of the script used to write it. A good example of such a name is the female name *ʾmtktbh*, in which the etymological ending *-ay of the feminine elative is represented by *-h*. Since it cannot reflect an etymological spelling or an archaic pronunciation here, the *-h* must represent a final -ā (see § 4.2.1 Final *-h*) and so it informs us on the use of *matres lectionis* in Dadanitic.

Finally it needs to be remembered that the vocalization of a name as we find it in the epigraphic record is often far from clear (see Macdonald 1999, 271 for a discussion of how to interpret the consonantal skeleton of a name). This makes the interpretation of glides in personal names highly problematic. For example, when we find both *zd* and *zyd*, this does not necessarily indicate that these forms show a difference in the spelling of the diphthong in the name Zayd, it could just as well be the case that *zd* represents the name Zayd while *zyd* represent the name Ziyād with the *y* representing a consonant. Whenever relevant, examples from personal names will be used to illustrate points about phonology and orthography. In most cases, however, for the reasons outlined above, these examples will not provide any conclusive evidence on the matter discussed, but merely additional support or a side note to possible variation.

Of course there are many factors involved in variation. Part one of this work aims to determine the written standard in order to be able to say something about the 'what' and 'how' of variation, which will be treated in depth in part II.

[55] Even though the name Michael comes from Hebrew originally, the English pronunciation of it can tell us for example that [i] came to be pronounced as [ɑɪ] in modern English.

[56] Even though the Dutch equivalent of the name Michael 'Michiel' [miχil] is still used, it is also not uncommon nowadays for Dutch males to be called Michael, with the English pronunciation, for example.