

Shakespeare's Tranect and the Traghetto of Lizza Fusina

by Catherine Hatinguais

Now, Balthazar, as I have ever found thee honest, true,
So let me find thee still: Take this same letter,
And use thou all the endeavour of a man,
In speed to Padua; see thou render this
Into my cousin's hand, Doctor Bellario;
And, look, what notes and garments he doth give thee,
Bring them, I pray thee, with imagin'd speed
Unto the Tranect, to the common ferry
Which trades to Venice; waste no time in words,
But get thee gone; I shall be there before thee.
Merchant of Venice, Act III, scene IV, 45–55

T*ranect* is a mysterious word, unique to Shakespeare's *Merchant of Venice* and found, capitalized, both in the 1600 “good” Quarto (Q1) and the 1623 First Folio.¹ As such, it has often baffled readers and commentators. That *Tranect* raises echoes of the Italian *tragheto* and that it is somehow connected to a ferry is beyond dispute. But how? By what geographic association or linguistic derivation? What may have come into play in Shakespeare's choice of the word?

With the notable exceptions of Malone, Knight and Elze, past editors have usually not ventured beyond linguistic explanations to investigate the locales

and navigation methods which Shakespeare may be alluding to, however obliquely. Further, over the course of the 20th Century, editors have increasingly converged on Rowe's 1709 emendation (II, 569) of Tranect to "traject," based on a hypothetical misread of Shakespeare's manuscript by the printers.² Disregarding the alternative derivation of the word from *trana* proposed by earlier editors, they no longer bother to explain their choice in any detail:³ what was earlier a reasoned but tentative solution has somehow hardened into received wisdom. For the latest editions of *The Merchant of Venice*, "traject," it is.

We are going to look anew at the issue by exploring the historical and geographical context which may throw some light on the matter. But first, we need to survey the etymological terrain.

From *Trajectus* to *Traghetto*

The *Grande Dizionario della Lingua Italiana* (GDLI XXI, 132–3, 135–6) and Pianigiani's *Vocabolario Etimologico della Lingua Italiana* (II, 1452) agree: the late Latin *trajectare*, formed on *trajectum*, supine of the classical Latin *Trajicere* (Trans: beyond + *Jicere*, "to throw over, across or through; to pierce; to transfer or ship across") gave rise to the three Italian words which all express the idea of crossing or conveying from one place to another, of going beyond, more specifically of crossing or conveying across, a river, canal or stretch of sea: (1) *Tragittare* (or the now rarer *Tragettare*); (2) the literary *Traiettare*; and (3) the Venetian *Tragbettare*—which crucially, as we will see, also has the specific meaning to cross a mountain and to haul a boat over land. Besides the simple idea of moving between two spatially distant points, therefore, *tragbettare* involves the concept of conveying someone or something over or across an obstacle: from one shore to the other across a waterway, or from one waterway to another over a strip of land.

Catherine Hatinguais worked for the United Nations in New York for thirty years, first as a translator and later as a terminologist. During this time, she conducted research and created multilingual glossaries for use by translators and interpreters on technical subjects reflecting UN activities, such as military affairs, law of the sea, and the environment. She holds a BA in political science and an MA in English literature from the University of Bordeaux in France. She also studied biology and ecology at Hunter College in New York City and trained as a botanical illustrator at the New York Botanical Garden. She previously appeared in *The Oxfordian* with "The Sycamore Grove, Revisited" (2016) and "Catching the Flood: River Navigation from the Adige to the Po in Shakespeare's Italy" (2019).

Similarly, the associated Latin noun *trajectus*, a crossing, a passing over or a landing, a passage, a crossing place, a boarding place (Riddle 1288; Lewis & Short 1887) is mirrored by the three Italian nouns which are largely, though not entirely, synonymous (specific or secondary usages need not concern us here). The definitions mostly overlap and can be summarized as follows (GDLI):

- Tragitto* (It.): The act or process of crossing a territory (on foot or vehicle).
A journey; an itinerary or route; a shortcut; a trajectory.
The act of crossing a waterway; a river or sea journey.
A boarding place.
- Traietto* (Lit.): The boarding or crossing place, specifically a river or canal.
- Traghetto* (Ven.): The act of conveying people, animals, vehicles or goods by boat;
A river or sea crossing.
The place where a river, canal or stretch of sea is crossed, where a ferry service is available.
The act of conveying across a territory.
- Barca da traghetto*: ferry boat.

The currently ubiquitous emendation of *Tranect* to *traject*⁴ cannot be sustained as a straightforward transcription of the sound of the Venetian *traghetto* (with its hard <g>, it is closer to “tracket”). It can be justified only if we assume that Shakespeare remembered and borrowed the Latin source word of the same meaning, i.e., the noun *trajectus*, and that he then Anglicized it to *traject*.⁵ Indeed, it is not unreasonable to think Shakespeare perfectly capable of such multilingual acrobatics, turning into English a Latin root-word to express an Italian reality for his English audience.

From the Medieval Latin *trana* to Shakespeare’s *Tranect*?

Nevertheless, the possibility of an affinity with *tranare*,⁶ as suggested by Malone (V, 101 n8), Steevens (189 n7), Cowden-Clarke and Knight (Furness 177–8 n55), is not so easy to dismiss if we look closer at the navigation techniques and hydraulic works in use in the 16th Century. Let us put aside for now the hypothesis of a misprint and look instead at Malone’s idea that *Tranect* is a deliberate creation derived from *trana*.

Trana (Medieval Latin), a cognate of *traha* (Classical Latin), has the general meaning of “sledge.” In Italian, *traino* refers to “the act of towing” (GDLI XXI, 139), and to “a hauled vehicle without wheels, such as a sledge” (Pianigiani II, 1453) and *Trainare/tranare* means “to haul.”

If we follow Malone's lead pointing to the entry *Trana* in Du Cange's Glossary of Medieval Latin (VI, 636), we find that *trana* is attested in various quotations, with two distinct though somewhat unsettled meanings:

- 1) a seaside dammed fishing pond or fish-garth (Lat. *piscatoria*, *piscaria*; It. *Peschiera*, *Pescaia*; Fr. *Pescherie*), seemingly derived from a late Greek word, *τράνας*.
- 2) a wheelless vehicle or sledge, derived from the Latin *trahinare*, “to drag, to haul,” and a cognate of the Italian *traino*. This second meaning, of more relevance to our context, is indirectly confirmed by a scattering of sources which define the derivative *tranaticum* as the tax on goods conveyed by sledge (Saint Genis 209; Mercante 607;⁷ Milman III, 139) or on anything other than a cart (Migne 2213; Montignot 288), where the suffix *-aticum* indicates payment, tax or due (Jacob ix).

This derivative of *trana*, *tranaticum*, (with its recurring, though erroneous, variant *tranicticum* resulting from an early misread) (Du Cange VI, 636) is a term of medieval commercial law found in many charters of the Carolingian era (8th and 9th Centuries). This was only one of a multitude of tolls (Desmichels 157–8 n3) which merchants were expected to pay to local lords at each river crossing, city gate or river port. It is tempting to see here a possible affinity with Shakespeare's Tranect.⁸ It should be noted, however, that the many taxes and duties enumerated in the above-mentioned charters may not have all remained in effect much beyond the early Middle Ages; that they may not have been exacted in all regions of the former Carolingian empire—which included the vast Lombard kingdom—or have been known locally under the same name. For example, Muratori (I, 324) states that most of the peculiar taxes listed in the Frankish charters, including the *tranaticum*, are **not** found in Italian records, where other terms are recorded instead, such as the ubiquitous and enduring *ripaticum* (var. *rivaticum*) (It. *ripatico*), a duty on mooring and unloading or selling goods on river landings or quays (Migne, 1945, 1947) and the more generic *dazi* and *gabelle*.

Italian cities and princes were as assiduous as any in collecting tolls and customs duties on pilgrims and merchants at the city gates, river ports and crossings, but the *tranaticum* does not seem to figure among them. It seems also highly unlikely that *tranaticum* would have left any trace in the spoken language of 16th Century Venetian boatmen which could have inspired

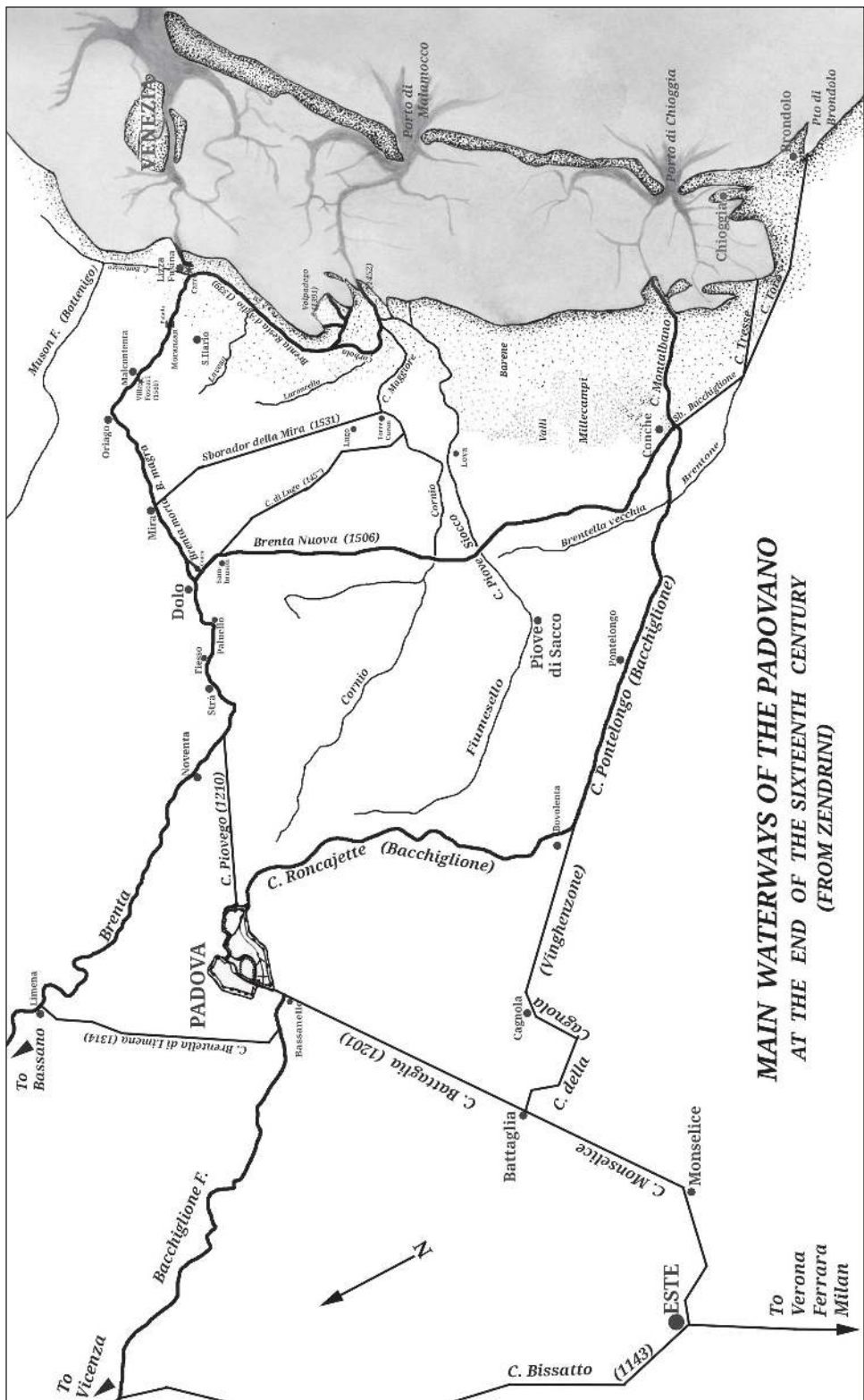
Shakespeare's Tranect, and neither Boerio nor Mutinelli record any word close to it in their dictionaries of the Venetian dialect. But students of Latin during the Renaissance would certainly have known the suffix—*-aticum*. Like Du Cange later in the 17th Century, they may even have been aware of the old word *tranaticum* and its meaning.⁹ Would law students in 16th Century England have had occasion to become familiar with Continental feudal law during their studies? It is impossible to know without further research. So the tantalizing but tenuous hypothesis of a kinship between the rather obscure *tranaticum*/*traniticum* and Tranect, must remain for now just a conjecture.

Not so the more widely used root-word *trana*, with its better-known meaning of “sled.” If Malone is correct in suspecting that *trana* might be at the root of Tranect, what sledge or hauling operation could Shakespeare have been possibly referring to? Whatever his ultimate linguistic source, Shakespeare means a very specific place or thing that is associated with a ferry connecting the mainland to Venice. That place is close to Belmont, itself located somewhere on the road to Padua. It is time for a visit, and a little history.

The Brenta and Lizza Fusina

The river Brenta¹⁰ is mentioned by all foreign visitors of the early modern era on their way from Padua to Venice, such as Moryson, Coryat, Montaigne, Villamont and others. It later became, in the late 17th to 19th Century, an obligatory destination for travelers on the Grand Tour. They marveled at the beauty of the rural estates and opulence of the villas built on its banks by Venetian patricians and at the luxury of the burchielli shuttling between those estates, Padua and Venice; and they brought back home Canaletto's and Costa's engravings depicting its delights (Manfrin, “Brenta” 35). But the history of its complex and changing hydrography (figure 1) goes back much further.¹¹

In Roman times and until the 10th Century the course of the Brenta (then named *Medoacus maior*), coming down from the Alps through Bassano, is thought to have swerved around Padua, then flowed in a roughly southerly direction to join with the Bacchiglione (then called *Medoacus minor*) and entered the Adriatic near the southern tip of the Venetian lagoon (Bonde-san and Furlanetto 187–8, figure 4). By the 11th Century, however, several small distributaries had been cut into its left bank, perhaps initially to power watermills. Over time these streams diverted more and more of its waters into the southern half of the lagoon, draining and ultimately deactivating the old river, so that by the 14th Century the abandoned ancient riverbed became known as the Brenta secca (Zendrini 15; Poppi 104).



Sometime between 1142 and 1146 the Paduan government either enlarged an existing minor branch of the Brenta or, perhaps taking advantage of a recent breach in its left bank near Noventa or Fiesso (figure 1), created a brand-new channel (Bortolami 225; Corro 113–4) which became what we know today as the Brenta, with its eastward course. The Paduans were aiming to convey water more directly to the lagoon of Venice through the S. Ilario Monastery delta (Bondesan and Furlanetto 189), a marshy area which sat in the vicinity of Fusina, right across the island city of Venice (Mola 447). It is unclear whether they intended to harm Venetian strategic and economic interests or were simply trying to protect their lands from flooding by draining the waters into the lagoon more efficiently (Averone 12; Zendrini I, 17–9). In response to this tampering with the estuary at Fusina, which threatened the lagoon with increased silt inflow, Venice launched (and won) its first land war against Padua (Brown *Sketch*, 94–5). The mid-12th Century in fact marked the beginning of over two centuries of tensions and frequent open warfare between Padua and Venice, often involving disputes over land boundaries, land reclamation and water management (Poppi 90–103). The strife would end only when Padua came under Venetian control in 1405.

In 1210 the Paduans, eager to further facilitate river trade with Venice along the newly activated eastward branch of the Brenta, dug the Piovego canal to connect the river, near Strà, directly to Padua and its main port, the Ognisanti or Portello (Orlando 259). From Padua, boat traffic then used an extensive network of canals¹² to carry goods and passengers to Chioggia, Vicenza, Este, Ferrara, Verona, Mantua and beyond.

With the deactivation of the Brondolo branch of the Brenta, the river's flow and its mud were naturally redirected towards Fusina, facilitating both navigation to Venice and the silting up of the lagoon. Along this newly established course, trade flourished and began to transform the small village of Fusina, with its *palada*¹³ and toll station (figure 2, page 8) where passing boats had to pay the *pedaggio di transito*, or transit dues (Caniato, "Commerci" 271).

However, by the 1290s the Venetians grew alarmed at the general state of the lagoon: progressive sedimentary infilling resulting from fluvial deposition was reducing the areas of open water, deactivating channels and making the tidal inlets increasingly narrow and shallow (Bondesan and Furlanetto 177). Indeed, by the beginning of the 14th Century, the silt deposited by the Brenta had in a single century created a peninsula, the Punta dei Lovi, pointing straight at the heart of Venice and threatening to connect it to the mainland (Costantini 29); the reed-beds, and the insalubrious air they reputedly exhaled, had advanced about two miles closer to the island city (Bortolami 226, 232; Zendrini 68).

◀ *Figure 1: Composite map of the Padovano and the southern part of the Venice lagoon at the end of the 16th Century.*

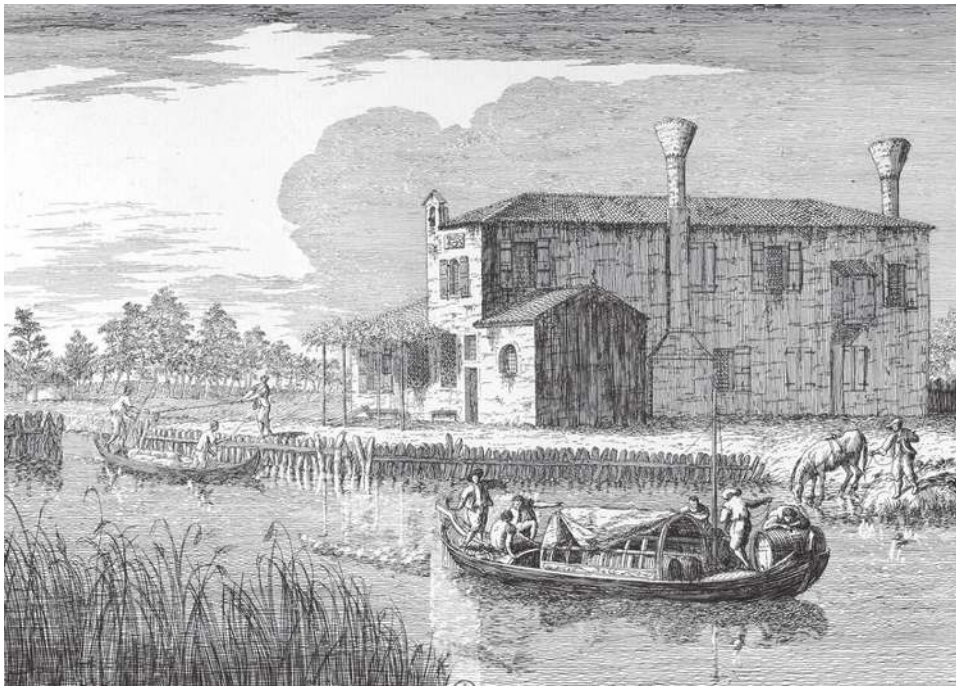


Figure 2: 18th Century illustration (Veduta V) by Gianfrancesco Costa of the pal-lada del Moranzan, showing the tollhouse and the wooden river “gate.” A similar structure existed at Lizza Fusina in the 13th Century, before the embankment was created to bar the Brenta from the lagoon.

Desperate to save the lagoon, its navigation channels and harbors,¹⁴ the Venetians embarked on a centuries long, if halting,¹⁵ effort to close off all the rivers flowing into the lagoon and to redirect their waters away from the city, via a series of canals that ran behind a powerful levee built all along the edge of the mainland.

In 1324, as part of this new hydraulic engineering scheme, the Venetians ordered that a large embankment be built at Fusina¹⁶ to block the Brenta from entering the lagoon (Bortolami 232). Its flow was diverted via the canal Brenta di Restadaglio to a new mouth several miles to the south, in the Volpadeago¹⁷ area (D’Alpaos 21, map). Boat traffic was redirected through the Volpadeago entrance, which inconveniently lengthened the journey (Costantini 30). Initially, to avoid damaging the Fusina levee, it was forbidden to haul boats over it as a shortcut or to use it as a tow path (Zendrini 69–71).

In 1452 the Brenta di Restadaglio was again redirected further south, this time from Volpadeago, via the Corbola and Maggiore canals, to a mouth situated across from Malamocco (Ciriacono, “Ingegneria idraulica” 242) (figure 1).

Predictably, the waters of the Brenta, denied a direct and easy outlet to the lagoon, backed up behind the dam during seasonal floods and damaged the

land reclaimed for agriculture around S. Ilario. In response to the complaints of local landowners, the Venetian authorities opted for an ambitious new approach. They ordered in 1488 that a major diversion of the Brenta be dug farther upstream, west of Mira. This diversion, called the Brenta Nuova, was completed only in 1507. It ran south from Dolo, through Sambruson to Conche, where it met the Bacchiglione (Zendrini 130). For a few decades both rivers were made to flow via the Montalbano canal into the lagoon of Chioggia; in 1577, however, they were finally redirected away from Chioggia further south to Brondolo, i.e., completely outside of the Venetian lagoon (Bondesan and Furlanetto 189).

As a result of this and subsequent upstream dams and diversions¹⁸ towards Brondolo, the flow of water in the remaining eastward branch of the Brenta, from Dolo to Fusina, was greatly reduced, and in fact so slow was the current that the terminal stretches of the river became known as the Brenta morta and Brenta magra (Rampoldi I, 406) and that boats would sometimes have to be towed by horses to speed up travel even while going downstream as Moryson testifies (158–9). By the early 17th Century the wild Brenta river had finally been tamed into a placid canal, at times barely deep enough for navigation and no longer carrying enough silt to threaten the lagoon: the Fusina levee could therefore be removed. In 1615 it was finally dismantled and replaced by a pound lock at Moranzano, one mile upstream, and henceforth the salt water of the lagoon moved in up to that lock (Costantini 47).

After the removal, Lizza Fusina still served as a hub connecting the main road to Padua and water transport to Venice (Caniato 272), but otherwise lost much of its economic relevance in favor of towns further upstream, like Moranzano and Dolo. For travelers on the Grand Tour sailing on the river, it was barely noticeable: simply the place where the tow-horses were left behind and rowers took over (Lassels Part II, 221) and where, according to Brown (*Venice* 162) at the end of the nineteenth century, no houses remained of the once prosperous village except “the custom house and one little wine shop.”

This brief overview of the hydrographic evolution of the Brenta cannot do justice to the military conflicts and fitful struggles to “save the lagoon” from the inflows of river mud. For our purposes, suffice it to remember two facts abiding at the end of the 16th Century: the vital importance of the Brenta ever since the 13th Century as the shortest and most intensely traveled navigable waterway between Venice and the city of Padua (and far beyond); and the existence of an embankment at Fusina which remained in place from 1324 to 1615,¹⁹ and which blocked the Brenta from entering the lagoon and therefore interrupted river traffic. An ingenious contraption, the famous *Carro* was built there to reconcile the need to facilitate trade by shortening the boats’ journey on the one hand, with the need to protect the earthen bank and the lagoon on the other.

Lizza Fusina²⁰ and the *Carro* in the 16th Century

Malone, who had read carefully the written accounts of 16th and early 17th Century travelers, seems to have been the first to accurately locate Shakespeare's *Tranect* on the Brenta and to describe it as "a dam": "Twenty miles from Padua on the river Brenta there is a dam or sluice to prevent the water of that river from mixing with that of the marshes of Venice. Here the passage boat is drawn out of the river and lifted over the dam by a crane [Coryat's word]. From hence to Venice this distance is five miles. Perhaps some novel writer of Shakespeare's time might have called this dam by the name of the tranect" (V, 101).

Violet Jeffery, in a remarkable 1932 article, gave a fuller context and a more detailed description of Lizza Fusina (29) and its famous *Carro* (figure 3):

This passage [from *The Merchant of Venice*] gives yet another proof of the remarkably detailed quality of Shakespeare's knowledge of Venice. The traveller approaching Venice from the mainland could take a ferry to cross the lagoon at three points only: at Mestre, a tiny post-house and village of small importance, a ferry used chiefly by travellers to and from Germany; secondly at Chioggia, a much longer distance from Venice and used chiefly for communication with Central and Southern Italy; lastly at Lizza Fusina, a ferry of far greater importance, for it was on the direct route between Padua and Venice. The traveller who came from England, France, or Flanders would normally proceed to Milan, and thence through Verona and Padua to Venice, taking the ferry boat at Lizza Fusina²¹. . . . At this point the stream had been diverted by means of a huge dam, constructed in order to prevent the mixing of salt and fresh water and consequent damage to the low-lying land and to the lagoon itself. Large vessels bound for Venice were prevented by the dam from entering the lagoon at this point and were obliged to follow the course of the stream, entering the canal, Resta d'Algio,²² and issuing into the lagoon from the unblocked mouth of the Brenta opposite Malamocco. But small vessels, and particularly the *burchiello*, on reaching the dam stopped there and were hauled across it by an ingenious contrivance, and then lowered into the lagoon. Thus, the journey was considerably shortened. This contrivance was known as the *carro*.

Magri (128), Roe (151) and Kreiler followed in Jeffery's footsteps, as indeed we do here.

Renaissance travel writers invariably found this astonishing machine worthy of note, some describing its design and operation in more detail than others. Beyond the often-quoted Moryson (159) and Coryat (I, 195), there were other witnesses in our story and together they give us a fuller picture of the journey along the river, of the dam and the *Carro* (all translations by the author).

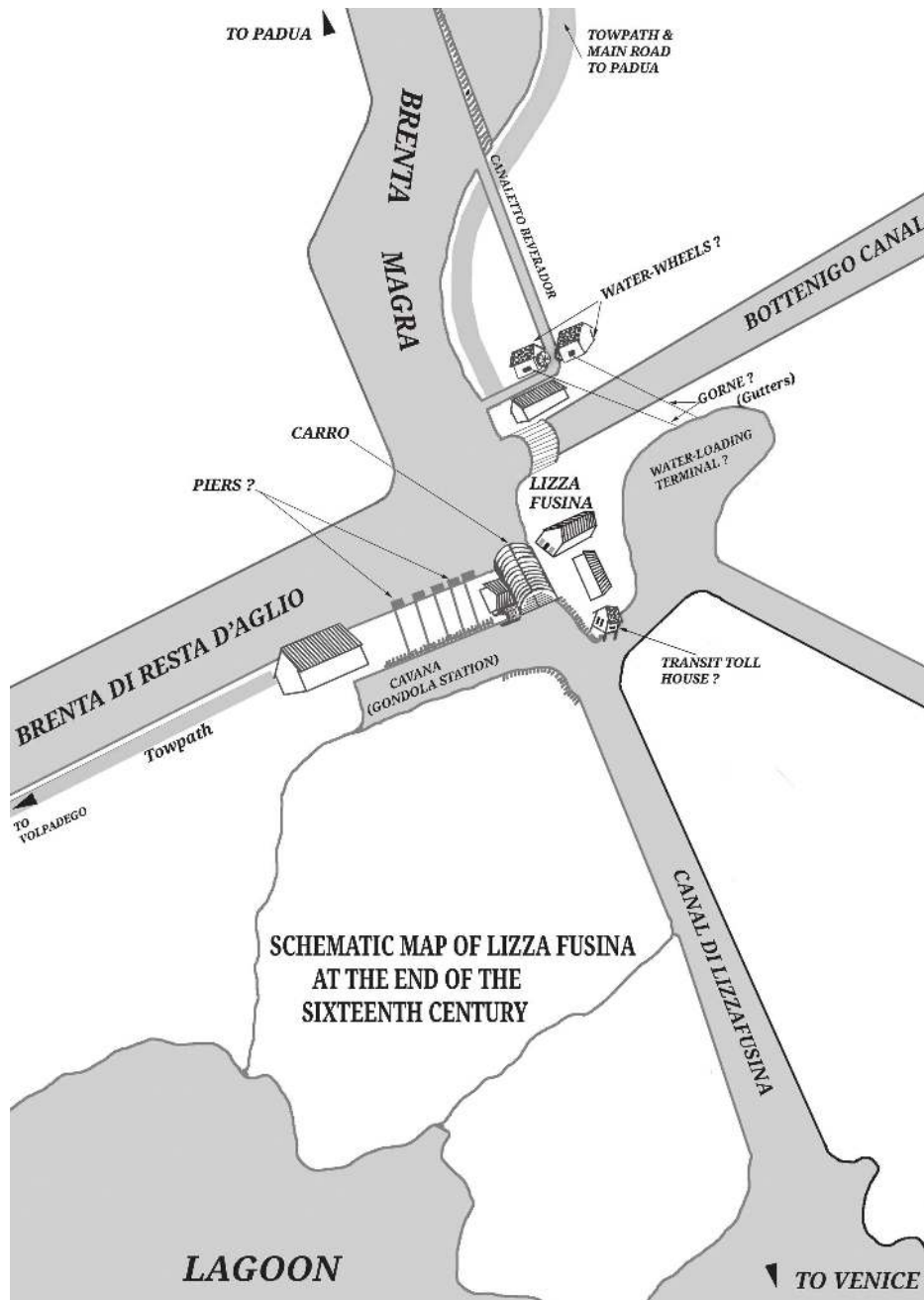


Figure 3: Map of Lizza Fusina at the end of the 16th Century. At the bottom, the Canal of Lizza Fusina, a channel in the lagoon connecting directly to the Giudecca canal in Venice. On the lagoon side of the embankment is the Cavana, the basin where the gondolas were waiting for their fares. The location of the gorne and the water-loading basin, and the identification of the five wooden piers and boardwalks, and of the stilt house on the Canal of Lizzafusina as a toll station, are all tentative.

Marin Sanuto, traveling in 1483 (Bruni 32–3), wrote: “we left our illustrious mother and city, Venice, at 11 on the Padua boat in the direction of Fusina, located five miles away, where the mainland begins; there stands a *Carro*, a marvelous machine that hauls the boats over the levee and conveys them into the river; there is another possible itinerary along the Resta di Aglio but it is much longer.”

Montaigne noted in 1580 (166):

We left [Padua, on horseback] early Saturday morning and followed a beautiful causeway along the river Brenta, surrounded by very fertile wheat fields, with rows of trees planted in an orderly fashion, onto which their grapevines climb²³; and the way is lined with beautiful country estates, among them one of the villas of the Contarini family, which has by the door an inscription stating that the King [Henri III, in 1574] was a guest there on his way back [to France] from Poland. We reached...La Chaffousine, twenty miles [from Padua], where we had lunch. There is only an inn where people take to the water to get to Venice and where all the boats traveling on the river have to dock. Thanks to various gears and pulleys that two horses keep turning as they do with oil-mills, the boats are carried on wheels placed underneath, on a wooden platform, and are launched into the canal which connects to the sea [i.e., the short channel from Lizza Fusina to the open lagoon] where Venice lies. We had lunch there and having boarded a gondola, we traveled five miles to Venice, where we had supper. (figure 3)

Villamont, who visited Italy in 1588, recounts (431):

After crossing the sea [i.e. the lagoon] for five miles, we reached the traquet [Villamont's idiosyncratic transcription of the Italian *traghetto*] of Lizafousina, which is at the junction of the sea and the Brenta river; the said traquet [*traghetto*] is like a very large embankment which separates the sea from the river, but the place where the boats are raised is made of wood, onto which the boats are hoisted from the sea into the river by some machines that a horse keeps turning. The reason this traquet was built was to safeguard the fresh water and prevent it from mixing with salt water, because, from Lizafousina, it [fresh drinking water] is carried by boat to Venice.... From Lizafousina, one can go by coach to Padua if one wishes.

Hentzner in 1599 (217) puts it succinctly: “[Lizza Fusina]²⁴ where boats loaded with goods, are lifted from the waters by a machine with turning wheels and transferred back and forth across the dyke, from the lagoon to the river and from the river into the lagoon.”

Vinchant, who went through Lizza Fusina in 1609, just a few years before the dam and *Carro* were finally dismantled, also briefly mentions it (164): “The Venetians have blocked its [the Brenta river’s] mouth to the sea, diverting its course away, fearing that this river, carrying vast quantities of sand, would fill in the shallows everywhere and thus create a walkable path to Venice. Sailing on this river we reached Lucitusma [sic], which is where boats are raised and lowered by a machine they call *il carro*.”

The *Carro* was a spectacular example of an otherwise common structure, used since antiquity²⁵ and known throughout Europe, which was designed to allow boats to pass over an obstacle such as a dam or weir barring a river (and thus get from one reach to the next even when no lock was available²⁶), a levee separating two nearby bodies of water or a ridge separating two watersheds. This type of structure is known by the generic term of “inclined plane” or “incline” (figures 4 & 5, pages 14 & 15). At their most primitive, inclines were just wooden slipways or even slopes of wet soil, where small boats could be hauled by hand over the obstacle, as was the case in many remote spots in the *valli*, the patchwork of ponds and marshland around the lagoon proper, where local fishermen built their fish traps. The more elaborate involved wooden rollers, ropes, wheels, and windlasses; in later centuries, inclines included cradles fastened under the boats and running on railway tracks, or caissons filled with water, in which the boats were transported while afloat.²⁷

The specific design of the *Carro* of Lizza Fusina changed over the centuries. The invention of a particularly remarkable *Carro*, credited to Antonio Marini, is dated to around 1440 (Mola 450–1); this may have been the machine mentioned by Sanuto in 1483. By 1514 there were two *Carri* of different dimensions in operation: the main and older one, designed to haul large boats for a toll of eight pennies, and a more recent and simpler one alongside it, sufficient to handle smaller boats, with a toll of four pennies (Mola 460). A 1535 map of Fusina by Nicolò dal Cortivo shows two parallel wooden slipways, with machinery to one side, maybe the capstan recorded in a contemporary document as hauling the bigger boats. In 1549, the *Carro* was redesigned and rebuilt to use horsepower, instead of manpower as had been the case so far, and to ferry all sorts of boats. It is mentioned in documents of that time as “the new conveying machine operated with horses” (*il novo edificio di traghet-tar con il cavallo* or *il caro delle Saffusina dal cavalo*) (Mola 460–1). A 1563 map of Giacomo di Gastaldi shows a layout for Fusina that is basically unchanged from 1535 but depicts a large-roofed structure sheltering the slipways of the *Carro*. In 1591, following complaints from the *barcaioli* that the aging machine was jolting and damaging their boats, the *Carro* was redesigned and rebuilt yet again. It was this latest version, also horse-powered, that is depicted in Zonca’s *Theatro di Machine* (Mola 462).

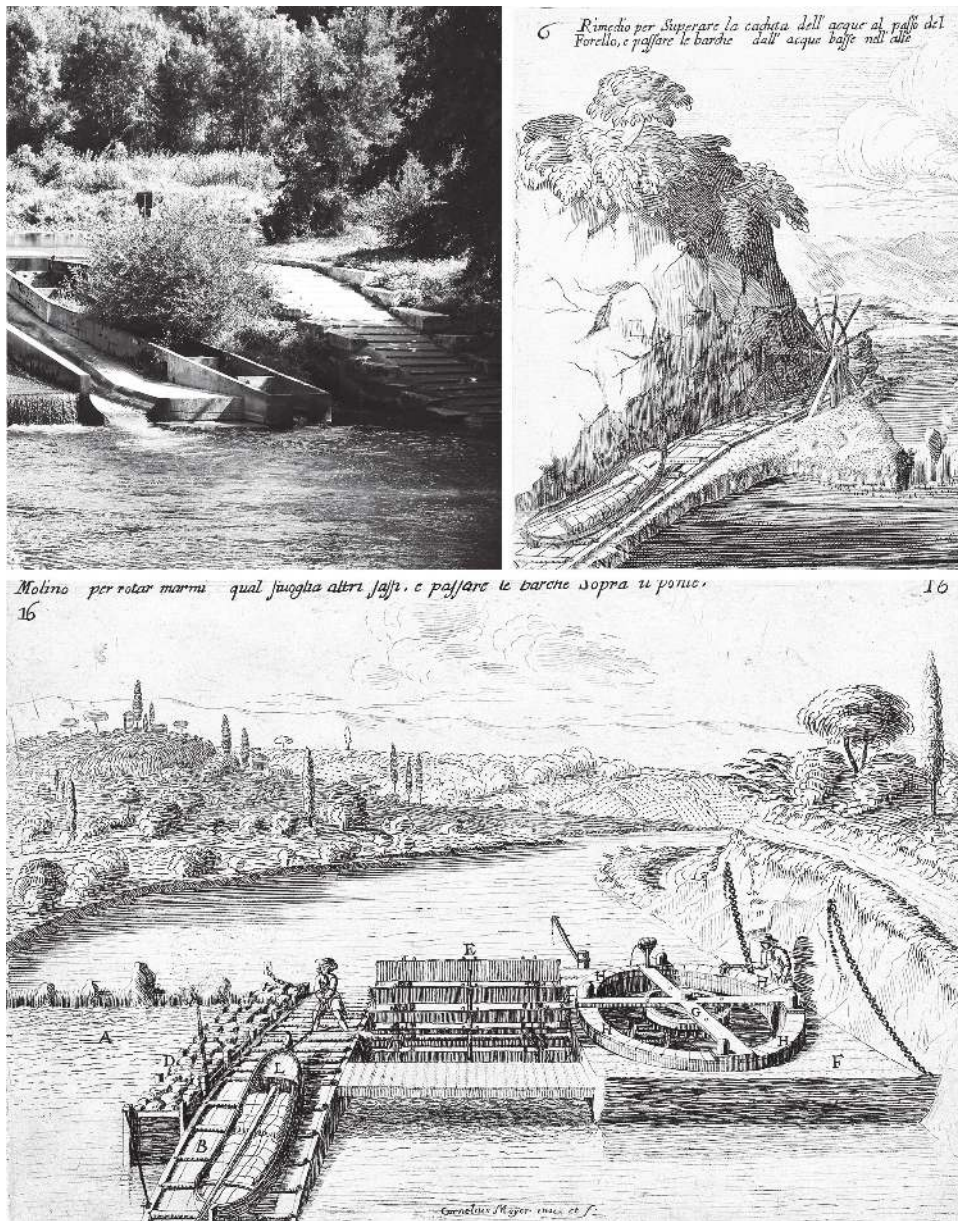
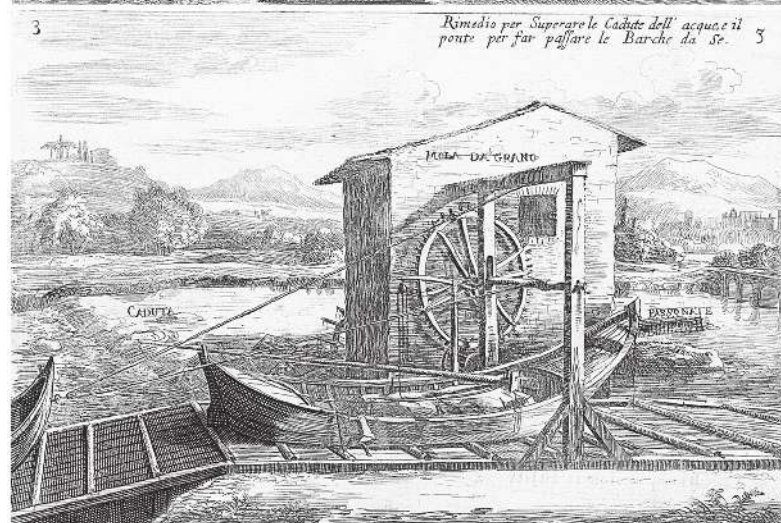
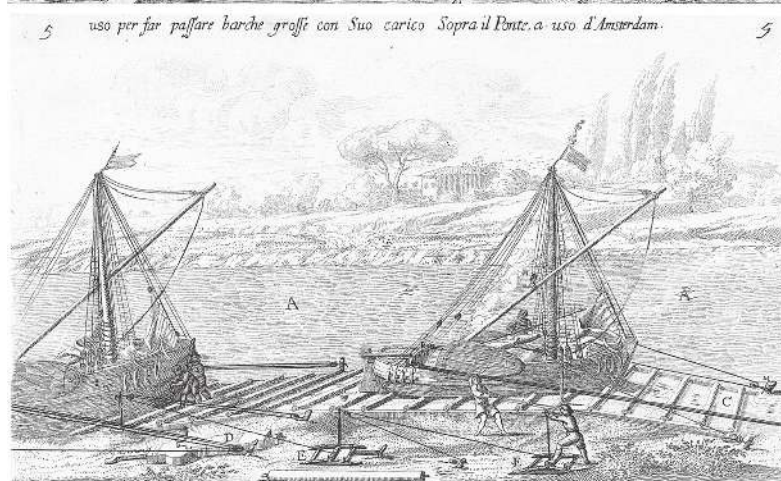
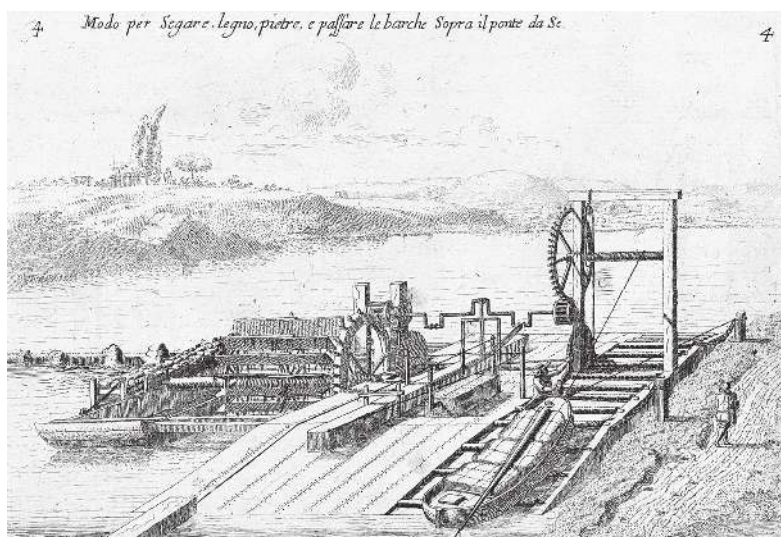


Figure 4 (above): Examples of simple inclines.

Figure 5: Various designs of hauling mechanisms. Top: An incline equipped with a water-powered cogwheel and lantern pinion. It is coupled with a sawmill (Meijer 4). Center: A man-powered incline, equipped with rollers, a series of pulleys and levers to rotate them and thus move the boat up the slope (Meijer 5). Bottom: A water-powered incline, using the energy of the paddle waterwheel of a flour-mill to turn a gear (a cogwheel and lantern pinion) and a windlass ("barrel") to pull a boat up the slope; once on the level section, the boat is moved by rotating the rollers with a lever until it reaches the downslope and is able to slip into the upper reach of the river (Meijer 3).



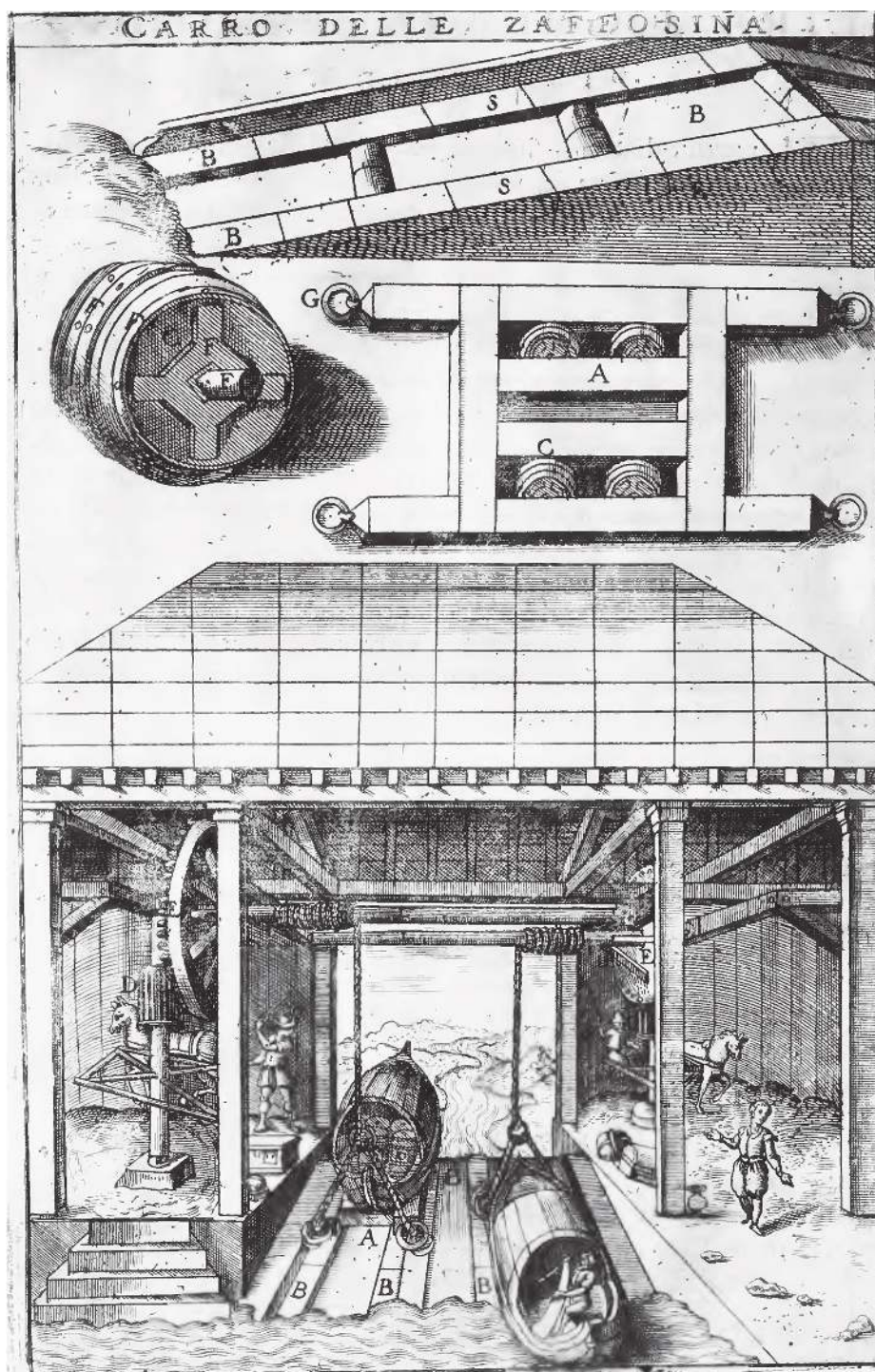


Figure 6: Zonca's depiction of the Carro as it appeared in its last iteration, after 1591. Venice is behind the viewer; ahead, beyond the building, is the Brenta. Above: details of the raised stone tracks and of the wooden sled or cradle.

Zonca's illustration and the accompanying explanations (58–60), published in 1607 and reproduced in part by Coronelli (86) in 1697, are extremely helpful to understand its basic operation (figure 6). Two horses, shown working under a roof, each powered a gear train composed of a cogwheel and lantern pinion,²⁸ which in turn rotated a horizontal beam (the “barrel”), functioning like a windlass, winding a rope and dragging a kind of sled. This sled, similar in concept to a modern shipyard cradle, carried the boats.²⁹ It was constituted of a rectangular wooden chassis; it had four small, solid wheels made of oak or walnut with iron axles and rims, which were housed within the frame and positioned below and away from the boat's hull to ensure they could turn freely (Zonca 59)³⁰. It ran along the slightly raised stone guides, or tracks, of the slipway. The sled raised the boats from the lagoon and lowered them into the river and vice versa. Jeffery (34), drawing on Coronelli, described it as follows: “two slipways built of wood and stone, two slopes down which sleds made of wood ran on a track into the water. The boat approached the foot of the slope, and the sled was fixed beneath it.... The sled then ran down the corresponding slope on the other side; the boat was unfixed and proceeded on its way. There were two of these sleds, working side by side, one for the boats coming from Venice, one for those coming from Padua, the difference lying in the placing of the beams and consequent adjustment of haulage power.”

The state property of the *Carro* and the rights to collect the toll from its many users (Costantini 31) were auctioned off in 1514³¹ and granted in perpetuity to the highest bidder, the “Pesaro family and associates,” who retained the rights³² until it was dismantled, along with the Fusina levee, in 1615.

But Lizza Fusina wasn't only the location of the *Carro*. There was an inn where passengers stopped for refreshments, as recounted by Montaigne (166) and Moryson (159), which was also bought by the Pesaro family; a post-house for Venice's efficient postal service, with its couriers riding to Padua and to other cities of the Veneto and beyond (Caniato 272; Molmenti Part II, Vol. I, 94)³³; and a place where travelers could rent, return, stable or sell their horses, or take a coach to Padua. Finally, the basin where gondolas for hire waited to take passengers from the mainland to the city, and the piers where the passengers of the regular boat service between Venice and Padua would disembark while their boat was hauled by the *Carro* before re-embarking on the other side (Moryson 159). Some, like Coryat (I, 195), chose to leave their boat at Fusina to take a privately hired gondola to Venice while others similarly arrived at Lizza Fusina by gondola and there boarded another boat to get to Padua (Montaigne 170). Nearby stood important riverside installations where all the wool fleeces processed in Venice were first cleansed, rinsed and dyed³⁴ in the water of the Brenta.

Lizza Fusina, located at the edge of the lagoon, the symbolic boundary of Venice, was close to the island Monastery of San Giorgio in Alga where the

Doge and his entourage came with great fanfare on the Bucintoro and a flotilla of gondolas, to welcome or see off important visitors, such as Henri III in 1574, as well as foreign ambassadors (Ratti 118).

Crucially there stood the filling stations for Venice's drinking water. The city's inhabitants relied in part on hundreds of public and private cisterns collecting rainwater, but, as mentioned by Villamont (431) and Moryson (159),³⁵ to supplement this limited supply those who could afford it bought water brought in from the Brenta on dedicated boats handled by specialized crews, organized in their own guild, the *acquareoli* or *burchieri da acqua*.³⁶ A 1425 decree dictated that only the Brenta could be used for drinking water and prohibited in particular the use of the neighboring Bottenigo, the water of which was known to be polluted (Costantini 28, 55).³⁷

For the drinking water supply, various private consortiums of inventors and investors were granted the rights to build and test hydraulic works of their own—duly patented—design (Costantini 60), at a spot of their choice in Lizza Fusina, along with the rights to collect water dues or loading fees from water-barge operators. The number of such installations operating at Lizza Fusina varied over the decades, as did their designs (Mola 462–6). They seem to have worked generally as follows (figure 3). The water was first withdrawn from the Brenta about one hundred yards upstream of Fusina proper, i.e., before it risked being contaminated by the Bottenigo. It was conveyed closer to the edge of the lagoon by a small canal running roughly parallel to the Brenta, the *canaletto beverador* (Costantini 47, 49, figure 7; 55–62). As witnessed by Montaigne,³⁸ it was then raised with a scoop wheel (also known as a bucket waterwheel³⁹) powered by horses, and poured into the *gorne*, a kind of gutters made of wood or stone (Costantini 65, figure 9) and designed to carry the water to the waiting barges⁴⁰ (figure 7). The *gorne* crossed over the Bottenigo, supported by wooden piles (Mola 465 n51); they had to be positioned high enough above the embankment to spout the water directly into the large vats and barrels in the hold of the water-barges which were parked below, on the lagoon side, regardless of the height of the tide (Costantini 64–5, figure 9; Mola 463; Zampieri 123).

It can be seen from all the above that, in the 16th Century, Lizza Fusina was for Venice a major center of economic activity involving not only navigation and trade with Padua and the rest of the Veneto, but also water supply and wool processing. Moreover, it functioned for over a century as a kind of technological laboratory and testing ground for new designs of hydraulic machinery, such as the *Carro* and the *gorne* (Mola 470).

With the *Carro* and Lizza Fusina placed in their historical, geographical and technological contexts, we can now return to our initial question: what exactly may Shakespeare have been referring to?

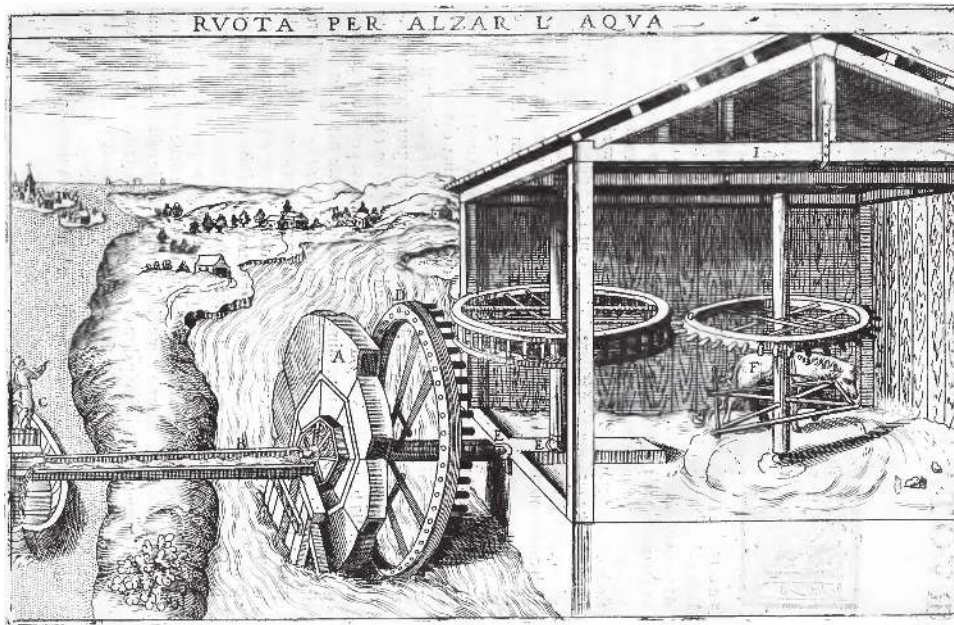


Figure 7: Zonca's illustration of a water-raising wheel (61–3), powered by horses, rotating triangular “buckets.”

Various Meanings of *Tragheto* in the 16th Century

The early Shakespeare editors who first grappled with Tranect obviously did not have access to the most recent Italian scholarship on the history of the Brenta. A few mention Coryat, sometimes Moryson, and are therefore aware of the *traghetti* located on Venice's Grand Canal, but many later editors ignore the published testimonies of other Renaissance travel writers and the works of Italian historians who could have further illuminated the issue. With the striking exception of Malone (V, 101 n8), Knight (Furness 177–8 n55) and Elze (279–81), their approach tended to be strictly philological, yet did not reach much beyond Florio and his translation of *traghetto* as “a ferrie.” As a result of these limitations, the editors who initially proposed the emendation to *traject* generally, and rather hastily, assumed that Shakespeare was referring to a ferry boat with the name of *traghetto*, sailing between Venice and the mainland. But *traghetto* had in fact several distinct, though related, meanings.

A Gondola Station or Ferry Landing

As noted by many travelers, in Venice itself the word designated one of the 30 or so stations or landings where passengers boarded public gondolas⁴¹ on standby (*traghetti da paràda*) along the Grand Canal and a few other locations,

for a simple and short crossing (figure 8). Gondolas at other fixed stations could be hired (*traghetti da nolo*) by the hour, by the day, for a single trip or for the duration of a visitor's stay in Venice (Misson I, 243; Montaigne 169; Zanelli 28) to go anywhere within the city (*traghetti di dentro*)—be it a church, a marketplace, a palace, a secluded side canal or a courtesan's house. To visit

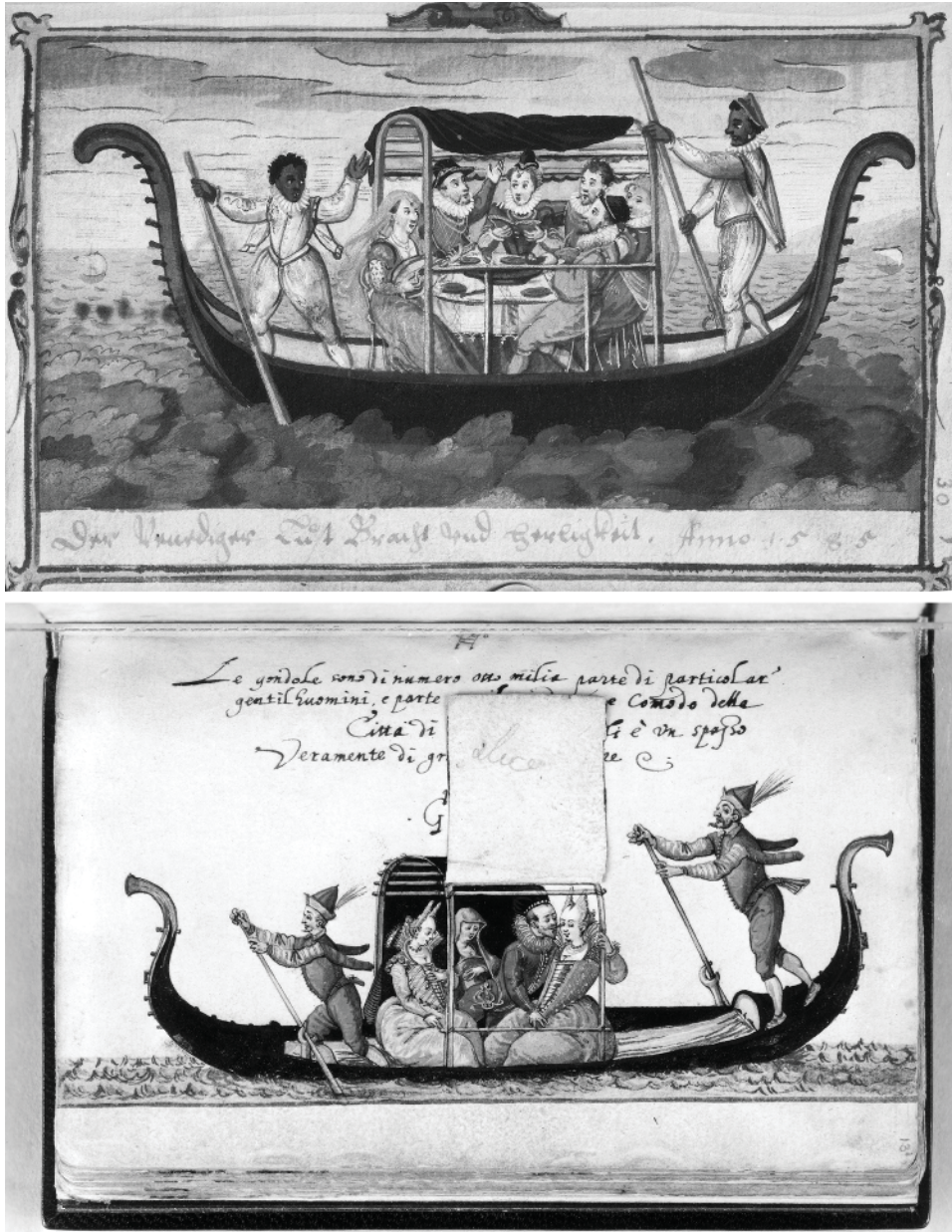


Figure 8: Gondolas in the 1580s. (Top) Two hired black gondoliers and their six passengers: a woman is playing the lute and another is singing from a songbook. (Bottom) *The gondola ride*, by Niclauss Kippell (ca 1588).

islands in the lagoon around Venice one used the *traghetti di fuori*, often sturdier boats with two to four rowers (Crovato 16, 44), better adapted to handle wind and choppy waters. One could also buy a passage on larger and heavier boats to go to thirty mainland cities, like Padua, Este, Vicenza, Mestre or Treviso (*traghetti di viazi*) and on to Ferrara, Mantua or Verona⁴² (Lowe 430, 439; Caniato, “Traghetti” 150; Zanelli 83; Crovato 29).

A Gondoliers’ Fraternity

In Venice proper, *traghetto* applied, by extension, to the various fraternities of gondoliers in charge of the gondola stations (Lowe 430; Brown, *Lagoons* 85–112). The gondoliers of each *traghetto* formed a corporation, *fraglia*, with a warden, *gastaldo*, at their head (Molmenti Part III, Vol. 1, 132 n2, 137). Despite their long and illustrious history, those fraternities had, by the 1500s, become quite disreputable. Brown (*Lagoons* 93–4, 107–9) describes the progressive disintegration of the *traghetto*’s organization and the difficulties that the guild’s elected officers encountered when trying to maintain discipline among the younger gondoliers, at a time when the nominal owners of the “liberties” (i.e., the licenses to row), a *traghetto*’s original gondoliers, had sold said liberties to unruly outsiders who extorted or mistreated their passengers.⁴³ This state of affairs goes a long way in explaining the dismal reputation that the gondoliers gained among some travelers in the 16th Century and later. For foreign visitors in fact, a gondolier functioned not only as a guide (Moryson 164),⁴⁴ but also as what we would call today a “fixer,” occasionally as a procurer (Coryat I, 210–1)⁴⁵ and even sometimes as hired assassins (*bravi*) according to Misson (I, 243–5).⁴⁶ To remedy this lawlessness the Venetian government finally took over control of the liberties and of the *traghetti* in the 17th Century.

A Boatmen’s Guild and River Route

In the Veneto at large, *traghetto* could apply to the local boatmen’s guilds granted the exclusive right to carry goods along a section of river or a particular route (Orlando 292; Faccioli 113–4; Beggio 509),⁴⁷ and to that route itself. As Beggio (509) explains:

The term *traghetto* is sometimes misunderstood by modern authors, who identify it as a boat, or raft, or a platform set on two boats which is still used to convey people, vehicles and goods from one riverbank to the other. Although this is indeed a *traghetto*, in the case of the *burchieri* [boatmen], the “right of *traghetto*” refers to the concession authorizing them to transport merchandises along the river, from one port to another, therefore over long distances. It has nothing to do with crossing from one bank to the other. (translation by the author)

A Small Pontoon Ferry

Throughout the Veneto, it could designate the *passi a barca*, those platforms set on two pontoon boats, shuttling cattle, horses and carts, travelers and farmers, and found every few miles along the Brenta, including at Malcontenta (Manfrin, “Passi a barca” 78–83), and along other rivers, such as the Adige (Beggio 509) or the Po (Confortini 78–81). Those small pontoon ferries were very much in demand in the absence of bridges, which were few and far between (figure 9). Operated for a fee by local landowners according to concessions granted by the Venetian authorities (Manfrin, “Passi a barca” 82), they were sometimes simply punted from one riverbank to the other or dragged along a rope strung across the river.⁴⁸ “[I]n our dialect, along the whole course of the Adige, from Verona downstream, the boat that connects the two banks where there is no bridge, is known as the ‘*barca del passo*’, or simply ‘*passo*’, and the ferryman is called the ‘*passadore*’.” (Beggio 509; translation by the author). Today *traghetto* denotes ferry boats only by extension (Treccani).⁴⁹

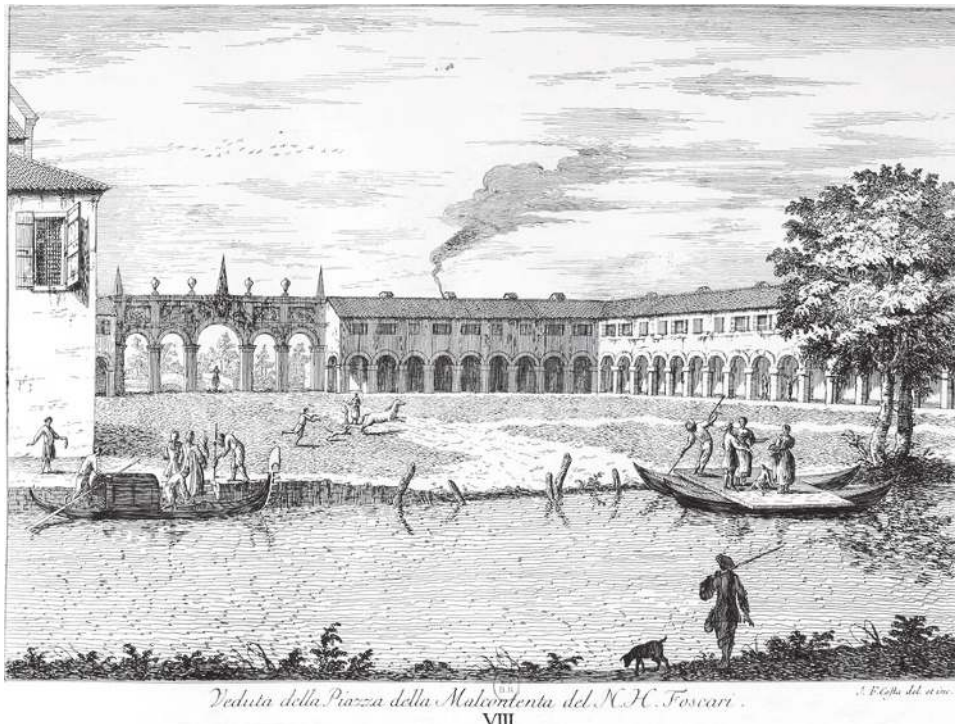


Figure 9: Costa's illustration of the passo-barca (pontoon ferry) at Malcontenta in the 18th Century (Veduta VIII). It connected the Villa Foscari-Malcontenta located on south side of the river to the main road to Padua, on the north side.

An Incline and a *Carro*

Traghetto also designated the many remote and primitive inclines in the marshlands around the lagoon, the *valli*, where fishermen hauled their boats overland to get from one pond to the next (Ferrone 637 n11).

Most important, the word could be used interchangeably with *carro*, whether that of Lizza Fusina or other similar contraptions erected elsewhere in the Veneto and fulfilling the same functions, i.e., conveying boats across a strip of land between waterways. If *carro* tends to connote the physical machinery itself, particularly the wheeled boat-cradle already described, and *traghetto* the overall setup and hauling operation, the two terms are, for all intents and purposes, mostly synonyms.⁵⁰

This usage is well attested. The GDLI gives as one of the main definitions of *Traghetare*: “to haul a boat on land” and quotes Galileo,⁵¹ Shakespeare’s near contemporary. Zonca (60), in his description of the *Carro*’s operation at Lizza Fusina, also uses *traghetare*.⁵² As already noted by Jeffery (32), Villamont, who visited Venice in 1588, transcribes *traghetto* into French as “traquet”⁵³ and applies “traquet” not only to the city’s gondola stations but also to the Fusina dam with its *Carro* (I, 122 and III, 431). Zandrini, writing in the early 19th Century, applies *traghetto* to the process and to the machines allowing boats to cross dams and embankments (I, lix, 13, 32, 71, 160) in various places, including one at Marghera. Togliani (582) mentions a *traghetto* built around 1599 on the Nicheola at Mazzanta (near Legnago) as “similar to the one at Fusina” and “constituted of an embankment, a *carro* and a hoisting mechanism.”⁵⁴

The regular boat service (Lassels Part II, 221) between Venice and Padua—sailing up and down the river Brenta and not across it—was ordinarily referred to as the *barca da Padova* (figure 10, page 24) or *barca della Volta*⁵⁵ (Forum) and could carry 28 people, for the price of 14 pennies a head (Zanelli 94). This shuttle service operated twice daily from a station on the Grand Canal⁵⁶ in Venice to the Portello in Padua, with one departure in the morning and one in the evening (Coronelli 85; Zanelli 81) and was organized so that it would be possible for someone to go to Padua and return to Venice within the space of 24 hours (Coryat I, 195). This boat, by necessity, had to stop at Lizza Fusina and wait its turn at the *Carro*.

There also was a ferry service operating on demand between Fusina and a station located on the Giudecca Canal, between San Basilio and Angelo Raffaele (figure 11, page 26), close to where timber rafts, having floated down the Adige and the Brenta, used to be dismantled. In 1578 this ferry (not a gondola) could be hired to carry eight people for three pennies per person (Zanelli 94). In Fusina, the landings of the public ferries were located close to the *Carro*.

The expression “the common ferry which trades to Venice” of Act III, scene IV of *The Merchant of Venice* could therefore refer either to the public boat shuttle between Venice and Padua or, most likely, to the smaller Fusina ferry. But is the term Tranect also referring to a ferry boat service, as has generally been assumed?

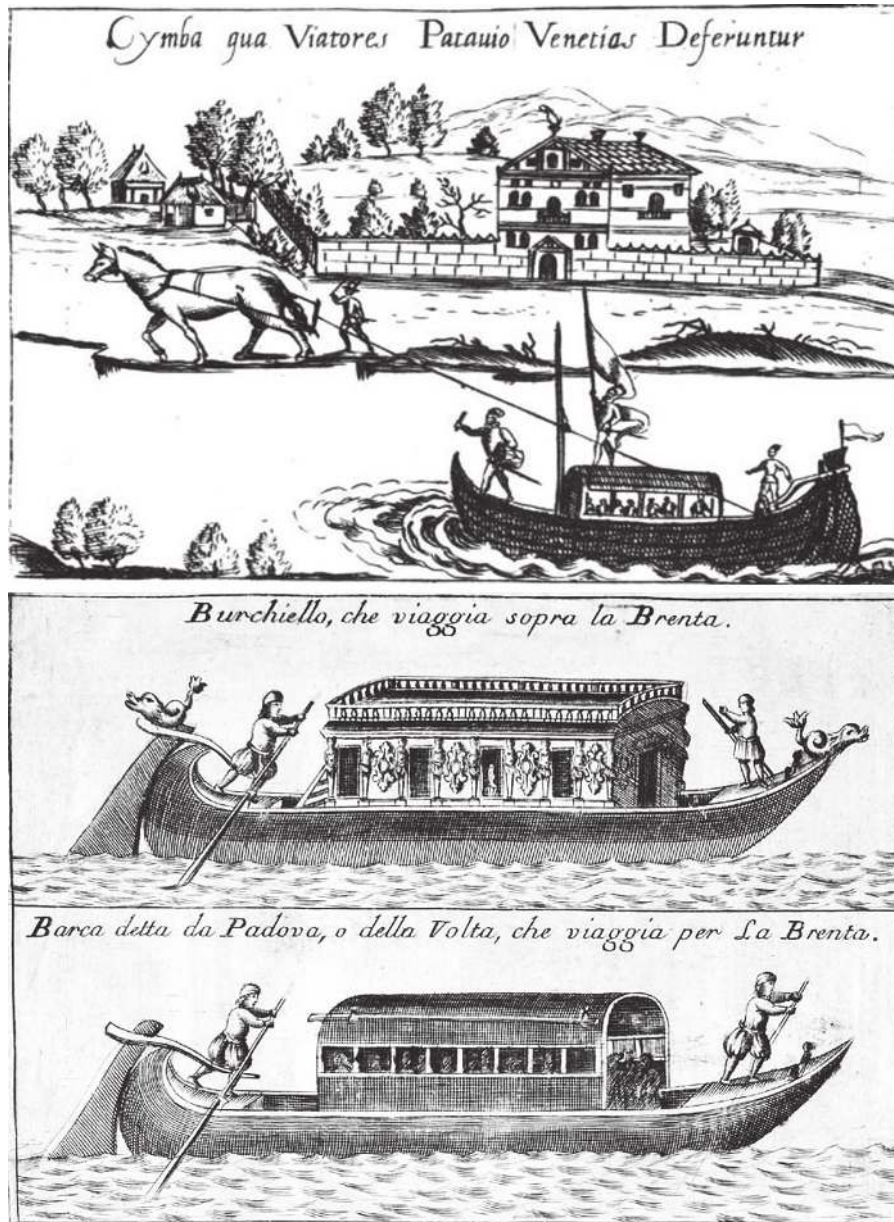


Figure 10: Top: The Barca da Padova in 1591, towed by a horse along the Brenta. Passengers can be seen seated on two benches, facing each other. Bottom: 18th Century engraving depicting (top): The Burchiello, with its wooden cabin and balconies and (bottom): the Barca da Padova, the public ferry.

Shakespeare's Tranect: the ferry boat or the *Carro*?

As surmised by Elze (280) and others, Shakespeare was simply trying to explain the strange word Tranect to his audience, by opposing a descriptive “common ferry,” known to all. But a simple equivalency between ferry and Tranect does not require a repetition of “unto” and “to”; it could have been more unequivocally expressed with an apposition such as “unto the Tranect, the common ferry.”

With his lines “unto the Tranect, to the common ferry,” could Shakespeare be referring instead to two of the remarkable features of Lizza Fusina, i.e., the *Carro* on the one hand, and the common ferry that stopped nearby on the other? Jeffery (31) seems to imply as much, although only in passing. The evidence reviewed earlier suggests that Tranect, with its plausible, if still unsettled, kinship with *tranare* and *trana*, “to haul” and “sledge,” fits the operation of the sleds used to drag boats overland at Fusina better than it does a ferry boat. In fact, the presence of the *Carro* at Fusina may itself explain the very toponym Lizza Fusina. The GDLI (IX, 172) defines Lizza, among other things, as “a vehicle without wheels, in the shape of a sled, designed for the transport of people or goods in steep places” and as “a machine formerly used in Venice to transport boats overland from the canals to the lagoon and vice versa” (translation by the author).⁵⁷ Lizza would therefore be a synonym for *Carro*.

The *Traghetto* of Lizza Fusina

Let us leave aside the questions of whether Shakespeare truly intended Tranect and whether *tranare* and sleds may have been somehow on his mind, two issues impossible to resolve conclusively. Let us even concede that Shakespeare may have simply tried to transcribe the sound of *traghetto*. Even then, the argument that he was thereby referring to the *Carro*, as opposed to a ferry boat service, still holds. As we have seen, the Venetian word *traghetto*, beyond referring to gondola stations and guilds, pontoon ferries and river shipping concessions, commonly applied to the hauling of boats over dams and to the inclines and machinery built for that operation. Villamont's use of “traquet” to refer to the dam and *Carro* of Lizza Fusina indicates that it was so known locally at the time of his travels. Most importantly, the name *traghetto di Lizza Fusina*, referring to the *Carro* and its operation, appears in documents of 15th and 16th Century Venice.⁵⁸ It is still used, with that same meaning, by Italian historians of the area.⁵⁹

So it is highly likely that Shakespeare is not referring to a ferry boat, but rather to the *traghetto di Lizza Fusina*, that is, to the *Carro* and the dramatic transfer of boats overland that it effectuated, which so impressed travelers for 200 years.



In this proposed reading, Shakespeare's line could be understood as denoting a sequence in time: "Unto the *traghetto*, *and then* to the common ferry"—meaning that once arrived at the location of the *traghetto di Lizza Fusina* or *Carro*, Portia would then board a ferry boat to Venice. The playwright would simply have elided the conjunction *and*, and repeated instead the preposition of movement *unto/to*, to better emphasize Portia's haste, the sense of a race against time as she rushes to give her instructions to Balthasar as he prepares to ride to Padua. Alternatively, it could be interpreted as Portia clarifying for Balthasar's benefit which *traghetto* she has in mind (there were many kinds), "Unto the *traghetto*, *I mean the one near* the common ferry." In this alternative reading, whether she plans to board the public ferry in question or, as was commonly done, to hire a private gondola to reach Venice becomes irrelevant.

In conclusion, the emendation of *Tranect* to *traject* can reasonably be defended on purely linguistic grounds as a borrowing from the Latin *trajectus*, root of the Italian *traghetto*. However, a closer look—at the navigation on the Brenta, at the state of the confines of the lagoon in the 16th Century and at the celebrated *traghetto* of Lizza Fusina and its *Carro*—argues against equating *Tranect* with the ferry service and against dismissing too rashly a kinship of *Tranect* with *trana*, and the concept of hauling boats overland. There are in fact good reasons to think that, with this unique word, Shakespeare was singling out the dam and the *Carro*.

In providing the historical context of the locale that Shakespeare clearly refers to, and in proposing the readings above, we hope we have dispelled the confusion and uncertainty attendant to the word *Tranect* and helped solve the riddle.

More broadly of course, with Shakespeare's brief, almost casual, reference to the *Tranect*, we are faced with the next question: how did he become familiar with the *traghetto* of Lizza Fusina? The date of composition of *The Merchant of Venice*, placed as early as the late 1570s or in the mid-1590s at the latest (Gilvary 125–32), precludes that any of the travel writings quoted above—all published after 1611—could have been Shakespeare's source. We can safely dismiss the fantasy that he simply made it all up because his references are too specific and accurate. This singular example of "local knowledge," along

◀ *Figure 11: De' Barbari's Veduta prospettica della città, 1500 (Detail), with four stations of ferries to the mainland ("Traghetti di fuori e Dogado") indicated by numbered stars; their locations are derived from Zanelli (78–83). 1.) Ferry to Lizza Fusina, near today's Fondamenta Zattere. 2.) Ferry to Padua on Riva dell'Oglio (today's Fondamenta dell'Olio), on the Grand Canal. 3.) Ferry to Mestre, near the Ghetto Nuovo, on the Canal Regio. 4.) Ferry to Verona, at the Dogana ("Customs House"). 5.) Rialto Market and Bridge. 6.) Piazzetta and Doge's palace.*

with other allusions to peculiar locales of the Veneto, such as Othello's Sagittary, Proteus' busy river port in Verona, or Shylock's penthouse—all unlikely to derive from conversations with foreign merchants in a London tavern—can only mean the author had traveled to Northern Italy and later embedded in his plays the memories of the places he had visited.

More to the point, Shakespeare's biographers can find no evidence of William Shakspeare ever leaving England despite what E.K. Chambers describes as "much research has been devoted to a conjecture that he spent some time in Italy." It is highly probable that someone did travel throughout Italy and incorporated that knowledge into the plays published under the pseudonym William Shakespeare.

Acknowledgments

My deep gratitude to Susan Fischer, without whose help some of the crucial sources used in this research would have remained inaccessible, to Professor Terence Tunberg, Professor of Classics at the University of Kentucky, for dispelling my doubts about a point of Latin usage and manuscript transcription, and to April Robertson, Teaching Assistant in Classics at the University of Kentucky, for helping me with the translation of Du Cange's entry for "trana" from Medieval Latin. Any mistakes are mine alone.

Sources of the Illustrations

Figure 1: Composite map by the author, based on Zendrini (I, tav. iv, v, vi, ix; II, tav. Xxi), and on Bondesan and Furlanetto (186, figure 3).

Figure 3: Composite map by the author based on a 1535 map by Nicolò dal Cortivo, (ASVE, Archivio Gradenigo di Rio Maria, misc. dis.); a 1563 map of Giacomo di Gastaldi (ASVE, SEA, Brenta, rot. 26, dis. 15); a 1547 map of the Venetian Lagoon by Cristoforo Sabbadino (ASVE, SEA, serie Laguna, dis. 9); and a pre-1610 anonymous map (ASVE, SEA, Brenta, Rot. 47A, dis. 150).

Figures 2, 9 and 12: Costa. *Delle delizie del Fiume Brenta*. Bibliothèque nationale de France at <https://gallica.bnf.fr/>.

Figures 4 & 5: Meijer. *Arte di restituire à Roma la tralasciata navigazione del suo Tevere*. Rijksmuseum, Amsterdam at <https://www.rijksmuseum.nl>. Photo by the author (2009).

Figures 6 and 7: Zonca. *Nuovo Teatro di Machine et Edificii*. Bibliothèque nationale de France at <https://gallica.bnf.fr/>.

Figure 8: “*Der Venediger Lust Bracht und Herligkeit*,” (*The Venetian Love of Display and Magnificence*). *Stammbuch of Anton Weibemayer, 1585*. Germanisches Nationalmuseum, Nuremberg at <http://dlib.gnm.de/item/Hs123725/66>.

Walters Art Museum, Baltimore, MD. at <https://art.thewalters.org/detail/81155/gondola-ride/>.

Figure 10: http://www.paliodelruzante.org/i_tiranti.htm and <http://www.assoctc.it/burchiello-e-le-ville-del-brenta/>.

Figure 11. De’ Barbari. *Veduta prospettica della città*. 1500. Rijksmuseum, Amsterdam at <https://www.rijksmuseum.nl>.

Endnotes

1. “*The Merchant of Venice* was first printed in 1600 as a quarto.... The First Folio text is based on an edited copy of the First Quarto of 1600 (Q1). Some scholars think that whoever edited *The Merchant of Venice* for the First Folio must have referred to a manuscript of the play that had been used in the theater, but this theory is not well founded.” Folger Shakespeare Library at <https://shakespeare.folger.edu/shakespeares-works/the-merchant-of-venice/an-introduction-to-this-text/> (last accessed October 11, 2020).
2. It is worth noting here that the supposed misprint of an <n> for Shakespeare's intended <j/i> is not the only possible explanation. The Romans had another word for *crossing* or *carrying* or *conveying across* or *over*, unrelated to *Transjicere*/*trajicere* or *traject*, and found in all Latin dictionaries, be it Bullions (953) or modern online dictionaries: *Transvehere* (perfect passive participle: *Transvectus*), with its well established variant *Travehere*, *Travectus*, which Shakespeare would likely have known. It would be easy to misread the <v> or <u> on a manuscript as an <n>. Professor Terence Tunberg suggested this possibility: “Could ‘*tranectus*’ have originated on palaeographical grounds as a writing error for ‘*travectus*’ or ‘*traenectus*’? For ‘n’ and ‘u’ in the handwriting of medieval manuscripts can look similar—both are drawn with two erect minims.” (private communication, August 2020).
3. See for example: Sidney Lee (1907) dismissed the derivation from *tranare* and countered with a third hypothesis (78 n53), that *tra-nect* may have been modeled after *con-nect* (from *nectere*, to knot, bind, fetter or fasten); Roe (151) and Kreiler (Kindle Locations 882–8) reprised Lee's idea. Yet the Latin verb *nectere* had no association with movement or travel, with waterways or with the ideas of crossing or linking two spatially distant things (Lewis and Short 1196; Gaffiot 1021). Lee further states: “It is doubtful if ‘*tranect*’ can be connected with the Italian ‘*tranare*,’ to draw, and there is no other Italian word with which it can be associated. Rowe preferred to substitute *traject*. This word has been held to be an anglicised form of the Italian ‘*traghetto*’ or ‘*traghetti*’, which, according to the contemporary English travellers Coryat and Moryson was technically applied to the ferries of Venice, where gondolas waited for hire. Florio in his Ital.-Eng. Dict. explains ‘*traghetto*’ as ‘a ferrie’; the Italian word is derived from the Latin ‘*trajectus*.’ The word ‘*traject*’ is not found in Elizabethan literature, and though it has greater philological justification than ‘*tranect*,’ it has less textual authority.”

John Russell Brown (1955) writes (97 n53):

“Tranect” is probably a misreading of “traiect”; this would represent It.

“Traghetto”, a ferry, which is found in Florio’s *World of words* (1598).

Steevens identified “tranect” with It. “tranare,” to draw, pass over, swim, but the sense is strained and the “ect” ending is not explained.

Stanley Wells (1986) in his *Original Spelling Edition* (498) has, at Sc. 16 (3.4), line 1693: “unto the Traiect, to the common Ferrie which trades to Venice,” with no explanation for this surreptitious change to the supposedly “original spelling.” The *Glossary* (1452) has: “traject, ferry,” following Rowe’s lead.

Charles Edelman (2003) states (203–6 n53):

Traject. This *emendation* of *tranect*’ is a possible Anglicization of *traghetto* which Florio’s Italian dictionary translates as “ferry.” Common. Public.

Stephen Greenblatt (2008) in the W.W. Norton second edition, based on the Oxford edition, offers in line 53 the marginal notes: “Unto the traject* (*ferry), to the common* ferry (*public).” No explanation is thought necessary.

Michel Déprats’ recent bilingual edition (2013) gives French readers (V, 1156–7) a simple apposition, asserting identity between Tranect/traghetto and ferry: “au traghetto, ce bac public.”

4. The OED’s entry for “traject” reads: “A way or place of crossing over; esp. a place where boats cross a river, strait, or the like; a ferry. Less commonly, a route for crossing a tract of land. The action or an act of crossing over water, land, a chasm, etc.; passage. The action of carrying or conveying across; transport; transference.” The OED gives the etymology “from the Latin *trajectus*” and a reference to the French *trajet* and *traject*. The only instance of the word predating Shakespeare is found in John Leland’s notebooks for his *Itinerary* (dated to 1552, but unpublished until the 18th Century). Fluent in Latin—as Shakespeare surely was—Leland, like other writers after him, would have found borrowing and anglicizing *trajectus* to *traject* quite natural. But the overall scarcity of attestations seems to indicate that, even in later centuries, the word remained rare.
5. It is worth noting here that, in the passage of *Crudities* quoted by Hunter (Furness 177–8 n55), Coryat does not appose the word “trajects” as his translation of *traghetti* (I, 210): Hunter does. Nevertheless, White seems to assume that Coryat did, and following Hunter blindly, without re-reading Coryat, states: “Traject may be correct on the authority of Coryat”; so follows Parrott in 1903 (see note 3 above), asserting simply: “Traject is

a word used by Coryat as an English form of the Italian traghetto....” Hunter, White and Parrott are wrong: traject is not used by Coryat for traghetto.

6. A frequent misunderstanding (e.g., Russell Brown, note 3 above) should be clarified upfront: Two Italian words, because they are occasional homophones, are often conflated but derive in fact from two different Latin roots, with completely different meanings (though both—confusingly—can be associated with water):
 - (a) The Latin Transnatare, Tranatare, or Transnare, Tranare (Lewis & Short 1893, 1887), “to swim over, across or through,” was retained in Italian as Trasnatare, Tranatare (GDLI XXI, 161) or Tranare (Florio 575, 573). Although Trans-natare has to do with crossing a body of water (by swimming) we should remember that it is not the root of Traghetto, nor is it usually associated with ferry landings or services.
 - (b) The classical Latin Trahere, “to pull, drag or haul”(Riddle 1287–8; Gaffiot 1589–90; Lewis and Short 1885) became Traginare and Trahinare and later, Trainare (Pianigiani II, 1453; Du Cange VI, 635), or Tranare by syncope (Pianigiani II, 1455). The cognate Traha (classical Latin) means “vehicle without wheels, sledge” (Riddle 1287; Lewis and Short 1885) and later, “harrow” (Du Cange VI, 633; Niermeyer 1037; Migne 2212; Jacob 1131). Similarly, in Italian, traino is “the act of pulling; the load being carried; a sledge or cart usually without wheels with which one hauls” (Pianigiani II, 1453), “a kind of harrow” (Florio 572); also, “the act of towing a boat” (Confortini 23; GDLI XXI, 139). This Trainare/tranare, and its cognate traino/traina/trana (Florio 572, 573), is the most likely Italian origin of Tranect, if Tranect is what Shakespeare intended to write: something having to do with hauling, rather than with swimming.
7. “[Tassa] per trasporti nelle slitte (tranaticum),” or tax on transport by sleds. This definition by Francesco Mercante is quoted on p. 607 of *La Civiltà Cattolica*. Anno Trigesimottavo, Vol. VI della Serie Decimaterza. Firenze, 1887.
8. By metathesis of two phonemes, the hard <c> with <t>, a common occurrence.
9. Tranaticum is not found in the Early English Books Online database, but *tranare* (to swim across) is.
10. In Italian, the river's name was feminine to the locals, *la Brenta*, for many centuries. The switch to *il Brenta* is recent and was encouraged by Fascist writers, who felt that rivers had to be masculine (Draghi, “Toponomastica” 175).

11. For a detailed history of the Brenta, see Zendrini (1811), Averone (1911), Appuhn (2006), Bondesan (2003), D'Alpaos (2010).
12. Along the canals of Battaglia and Monselice, Cagnola/Vinghenzone, Bissatto, Roncayette/Bacchiglione (see figure 1).
13. Palada: a wall or dike comprising two lines of wooden piles with the space between them filled with rubble and reeds. (Ciriacono, *Building on water* 268). Here, a kind of wooden stockade built along and across a riverbed to restrict and control boat traffic and collect a toll (Manfrin, "Atlante" 67).
14. Misson (I, 190–1) astutely observes that while the Venetians worked very hard to keep their channels navigable, they were also anxious not to give the lagoon a great and equal depth everywhere since their winding courses, known only to local boatmen, proved suitably treacherous to enemy navies.
15. Appuhn (85) explains: "The Venetians did not develop their management scheme according to a master plan based on a body of deductive knowledge about similar bodies of water. Rather they proceeded in irregular stages.... River mouths that had been closed were sometimes reopened if the effect were not judged to be desirable; levees were built, torn down, and built again, depending on their perceived effects on the lagoon."
16. Fusina, like the area of S. Ilario, had long been recognized as belonging to Venice, in contrast to the disputed surrounding areas (Poppi 91–5).
17. Also appears in documents as Volpatico, Volpago, Volpego. It was located in front of an island named S. Marco in Bocca Lama.
18. Another short-lived diversion, the Sborador della Mira (1531–1540), was created from Mira to the Canal Maggiore and a mouth across from Malamocco (Bondesan 76). Finally in 1610 the *Brenta Nuovissima* (or *Taglio Nuovissimo*) was dug between Mira and Brondolo, thus re-establishing approximately the general southward course of the *Medoacus maior* of Roman times.
19. A breach created by Padua in 1371 and a series of brief experimental reopenings and closings around 1437–8 (Zendrini I, 55, 92–3) need not concern us here.
20. Today the place is called simply Fusina, but many variants are found on old maps and in written documents: Lizza Fusina, Issa Fusina, Za Fusina, Saffusina, Lizzafusina. Coryat (I, 195) transcribes it as Lucie Fesina, Montaigne as La Chaffousine (166, 170, 180).

21. From the edge of the lagoon to Venice, rather than taking a regular public ferry, as Jeffery describes here, several travelers mention hiring a private gondola for this last leg of their journey: it seems that in those cases at least the last stretch was covered aboard a boat operating on demand and not on schedule.
22. Variants: Resta d'Aglio, Resta di Algio, Restadagio.
23. Montaigne describes here the traditional intercropping agriculture, associating wheat fields, rows of trees and grapevines, practiced since Roman times in Lombardy (Desplanques). It is mentioned repeatedly by Moryson (I, 232, 309, 316, 361, 370, 375) "fruitfull fieldes...tilled after the manner of Lombardy, bearing Corne and Wine in the same field, all the Furrowes being planted with Elmes, upon which the Vines grow"... "so that one field gives bread, wine, and wood for to burne)," as well as by Misson (I, 151, 167) See also: <https://en.wikipedia.org/wiki/Intercropping>, <https://fr.wikipedia.org/wiki/Joualle> and <https://fr.wikipedia.org/wiki/Hautain>.
24. Hentzner (217): "Leucae officinam (Luzze Fusina vulgò), ubi navigia mercibus onusta, rotarum volubili machina, ex aquis sublata per aggerem hincinde transferuntur vel è stagnis in fluvij fossam, vel ex fluvio in ipsa stagna." See also Schott (55) and Pighius (197), who use the exact same words (the latter adding in a marginal note the descriptive: "Machina traductrix," the "transferring machine").
25. In Ancient Egypt, China and Greece for example. In the case of the Diolkos of Corinth (diolkos: dia, across, holkos, portage machine), it was over four miles long, included stone tracks, and was in use for 1800 years (See: <https://en.wikipedia.org/wiki/Diolkos>). For a brief introduction to the history of inclines, see Uhlemann (7–18).
26. Inclines had the advantage, compared to the pound locks that gradually replaced them, to be much cheaper to build; they also used no water, thus avoiding the habitual conflicts between milling and navigation interests.
27. For more details on canal lifts and inclines of the 19th Century in Europe, see Vernon-Harcourt (II, 389–98). For illustrations of Renaissance contraptions, see Meijer. For modern (and massive) examples of the same principle, see Uhlemann.
28. For a clear illustration of such gears, see: https://en.wikipedia.org/wiki/Gear#Cage_gear.

29. For equivalent modern installations, see: https://en.wikipedia.org/wiki/Ship_cradle and <https://en.wikipedia.org/wiki/Slipway>.
30. In Uhlemann (16), *Carro* is translated, via German, by “wagon,” originally a four-wheeled farm vehicle, designed to carry heavy loads, with large spoked wheels placed outside the load-carrying bed, a somewhat misleading translation in our context. Jeffery sees it as a sled, which is closer to what it would have looked like: its wheels are so recessed within the frame as to be all but invisible once a boat had been fastened on top of it, and it ran flush with the slipway.
31. It had previously been leased (in 1460) by the Venetian state (for 300 ducats a year) to private operators who were thereby authorized to collect four pennies per boat transferred by the *Carro* (Mola 450–1 n10). The same operators also collected “transit fees” (*dazio di transito* or *soldo del canal*) on all boats, including water-barges, using the approach channel (*Canal di Lizzafusina*) (Mola 454; Costantini 31). Jeffery (34) conflates these “transit dues” and the toll they paid for the use of the *carro*. These were in fact two separate levies.
32. The Pesaro family bid (and paid 11,800 ducats) for the *Carro*, the inn, the right to collect canal transit dues, and the wool dyeing operations at Lizza Fusina (Mola 454–7). Made rich by these various concessions, it successfully lobbied the Venetian authorities to delay for several decades the removal of the Fusina levee and the reopening of the mouth of the Brenta, and then to get compensated when it finally lost these lucrative monopolies (Caniato “Commerci” 271; Costantini 52, 55).
33. Molmenti explains (Part II, Vol. I, 94): “*To encourage and facilitate commerce and correspondence between businessmen, the State arranged an active service of letter carriers, every one of whom was called on the deposit an adequate sum of caution money. The couriers arrived at Fusina on horseback and thence boats were ready to carry the correspondence not only of the government, but letters, packets, money, valises, chests, etc. belonging to private individuals, by whom they were paid. The districts of the Veneto sent their foreign correspondence through Venice.*”
34. These installations were variously called the *caldiere da lavar lane* (Caniato “Commerci” 271), *lavatoio delle lane* and *tintoria* (Costantini 52, 58, figure 8).
35. Villamont (431): “Although there are in Venice an infinite number of wells and cisterns, they serve only the needs of the common people who don’t have the convenience of wells or cisterns in their houses” (translation by

- the author). Moryson (159): "[A]ll the Gentlemen of Venice fetch their fresh water by boats from thence [Fusina], the poorer sort being content with Well water."
36. Members of this guild, established in 1471, had been collecting water on and off at Fusina since 1339, and without interruption since 1391 (Costantini 30 n25). They were responsible for Venice's water supply, including the allocation of a set amount of free water to the municipal authorities and religious institutions, the management of the *gorne* (troughs channeling water into the city's cisterns) and the control of the use of the cisterns (Costantini 38). In 1587, more than 40 water barges (30–32 *burchi* and 10–12 *barche*) were registered as belonging to the *Acquaroli*'s guild. They worked to collect water at all hours, both day and night, making sometimes two or three trips a day between the city and Lizza Fusina.
37. Loading and reselling water from the Bottenigo was always tempting to unscrupulous freelancers (i.e., unconstrained by the guild's rules and duties), since it was not taxed and thus cheaper to collect (Costantini 31).
38. Montaigne (180): "I forgot to mention that the day we left Venice, we crossed paths with several boats, their hold filled with fresh water, which sells for one écu in Venice, and which is used for drinking and dyeing wool cloths. Once in Chafousine [Za' Fusina], we saw how horses, constantly powering a wheel, lift water from a stream and pour it into a channel and how the above mentioned boats then collect it, while positioned under [the channel, or gutter]" (translation by the author).
39. Ciriaco (Building on water 38 and 55 n74): "Although more complicated machinery was developed and proposed by the relevant authorities, the 'bucket' waterwheel could remain widely used along the rivers of the Venetian Republic for years to come...." For illustrations of water-lifting devices, see: <https://en.wikipedia.org/wiki/Saqiyah>; https://en.wikipedia.org/wiki/Scoop_wheel; <https://en.wikipedia.org/wiki/Noria>.
40. Costantini (63): "The need to equip Lizzafusina with specific hydraulic machines was due to the fact that the *canaletto beverador* ["small canal for drinking water"] was not able to ensure a sufficient flow of water from the gutters (*gurne*) to the water-barges," because of the shortness of its course and its lack of gradient (translation by the author). See also Popplow.
41. Hentzner (230) and Grangier (831) give the total number of gondolas as 8,000, Molmenti (Part II, Vol. I, 72) and Coryat (I, 214) as 10,000, possibly

an overcount. Public gondolas, available for hire, may have numbered about 4,000, private gondolas in the service of wealthy households around 6,000 (Coryat I, 214). Boats of both categories were sometimes rowed by black gondoliers (either slaves of patrician families or freemen members of the gondoliers' fraternities). Not all gondoliers were native Venetians (Lowe 412). Gondoliers were known for their showy dress (Molmenti Part III, Vol. 1, 211; Lowe 441).

42. Lowe (430) explains: "According to Marin Sanudo il giovane, in the late fifteenth century there were three types of *traghetti*, which he categorizes according to where one boarded the gondola, and according to what the gondola did. The first type exclusively ferried passengers across the Grand Canal between two fixed points; a second type was available for hire for an hour or a day from set stations (presumably these were Coryat's "mercenary" boatmen); and a third (*traghetti da viazzì*) went outside the city, to Padua or Treviso, for example....) [In the first category] Sanudo lists fifteen of these *traghetti di dentro* or *traghetti da bagatin* (the cost of the trip was a *bagatin*), but in fact there were more, probably around twenty, each consisting of a number of gondoliers organized in an association or corporate brotherhood, rather like a guild." Zanelli (82–3) lists 37 stations for the "*traghetti di dentro*" and 30 for the "*traghetti di fuori*" documented from the 16th to the 18th Centuries.
43. "[The gondoliers] took to selling their liberties to private individuals outside the school [fraternity], and even outside the profession, though the name of the original owner remained on the books, to mislead the Government. And in this way, it came to pass that, in the year 1530, the real holders of liberties, in a large number of cases, were 'foreigners, masons, dyers, bootmakers, priests, gentlemen and women.... It was the days of *bravi*, and these riotous young gondoliers [hired by the new holders] were either *bravi* themselves, or knew how to find *bravi* among their friends, who would see them through their quarrels by the help of sword or dagger" (Brown *Lagoons* 93–4, 107–9).
44. Moryson (164): "And that men may passe speedily [across the Grand Canal], besides this bridge [the Rialto bridge], there be thirteene places called *Traghetti*, where boats attend, called *Gondole*; which being of incredible number give ready passage to all men. The rest of the channels running through lesse streets, are more narrow, and in them many bridges are to be passed under."
45. Coryat (I, 210–4): "There are in Venice thirteen ferries or passages, which they commonly call *Traghetti*, where passengers may be transported in

a Gondola to what place of the City they will. Of which thirteene, one is under this Rialto bridge. But the boatmen that attend at this ferry are the most vicious and licentious varlets about all the city.”

46. Misson (243–5), traveling in 1688, gives us an insightful portrait of the gondoliers—which has echoes in visitors’ accounts of the 16th Century: “[Carnivals and festivals] are wonderful for gondoliers, not only because of the money they make with their gondolas, but because these are times for illicit assignations and a gondolier is a factotum. They know all the byways and detours of the canals.... Pandering is their main business. They offer, unprompted, to make a deposit and to lose the money if the merchandise proves unsatisfactory” (translation by the author).
47. For example, the traghetto Badia-Verona and Badia-Venice on the Adige.
48. The latter were called *traghetto a fune* (GDLI), or rope ferry. Cowden-Clarke (Furness 177–8 n55), agreeing that *trana* was at the root of Tranect but unfamiliar with the specific setting of Fusina, speculated (erroneously) that “the Venetian ferry boat was drawn through the water” by such a rope “strained across the canal for the purpose.” Rope ferries were indeed used in Italy as elsewhere in Europe: Moryson (221) describes crossing the Tiber and Montaigne (177, 178) crossing the Adige, Adigetto and Po on one of those; but the public ferries between Venice and Padua and Venice and Fusina were not among them: they were rowed while in the lagoon and towed by horses once on the Brenta. For illustrations, see: Confortini (78-9), https://en.wikipedia.org/wiki/Cable_ferry and https://en.wikipedia.org/wiki/Reaction_ferry.
49. <http://www.treccani.it/vocabolario/traghetto/>.
50. Not all traghetti involve the use of a *carro* (many are much simpler); but all *carri* transferring boats over land are *traghetti*.
51. “Una di quelle gran ruote, dentro le quali camminando uno o due uomini muovono grandissimi pesi, come la massa delle gran pietre del mangano, o barche cariche, che d’un’acqua in un’altra si traghettano strascinandole per terra.” (Galileo, quoted in the GDLI) “One of those large wheels, inside which one or two men by walking [i.e., a treadwheel] can move very heavy loads, such as the large stones of a trebuchet or the loaded boats that are transported from one body of water to another by hauling them over land” (translation by the author).
52. Zonca (60): “[T]ra il fiume della Brenta, e la laguna, per dove hà da traghettar il carro vi è fabricato una muraglia angolare a modo di tetto

con angolo molto ottuso....” “between the river Brenta and the lagoon, where the carro moves back and forth, a slanted dyke was built in the shape of a pitched roof with a very obtuse angle...” (translation by the author).

53. The word *traquet* is close in sound to the Italian *traghetto*, with its hard <g>. Like *tranect*, it is found only in Villamont’s book and is the only instance quoted in the Base Historique du Vocabulaire Français (<https://www.cnrtl.fr/definition/bhvf/traquet>). It is otherwise unknown to French dictionaries with this or any approximate meaning.
54. “Traghetti simili a quello di Fusine, erano costituiti da un argine, un carro e un mangano” (Togliani 582). Mangano can refer to a calender for finishing textiles, to a kind of siege engine or trebuchet (see also note 51 above), or formerly to a machinery designed to move heavy weights, a capstan (GDLI IX, 649, 4); in our context it designates the contraption of treadwheels or windlasses, ropes, pulleys, etc., similarly used for hauling boats overland.
55. The anonymous *Veniexiana* (1536) already mentions the boat which, on a regular schedule, left Venice at Santa Croce and traveled up the Brenta to Padua (Ferrone 638). By the late 17th century however, it is clear that the Venetian upperclass and wealthy visitors had forsaken the public ferry in favor of privately hired boats, in particular, the more luxurious *Burchielli*, as Coronelli (85) and Lassels (221) testify.
56. Authors differ on its exact location: some place it at Santa Croce, near the present Piazzale Roma, while Zanelli (81) locates it on the Riva dell’Oglio, closer to the Rialto bridge.
57. The word *Lizza* is a dialectal form of *Filza*, from the late Latin *helcia* (a rope used to drag or tow)(GDLI, IX, 172). *Fusina*/*Fucina* (*officina*) is a smithy or more generally a workshop (Migne, 1004; GDLI, VI, 417). Inexplicably, Roe (149) proposes “spindle” as translation for *Fusina* and “place of the spindle” for *Lizza Fusina*. The GDLI however only gives two meanings for *Lizza*: “tiltyard” and “sled” (IX, 172); and the meanings of “forge,” “kiln” or “crucible” and of “workshop” for *Fucina* (VI, 417–418). Roe’s translation is in error.
58. A 1460 document notes that the *traghetto di Lizzafusina* was leased to a certain Benedetto Barozzi (Mola 451 n10).
59. See in particular Luca Mola, *La Repubblica di Venezia tra acque dolci e acque salse*.

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