


Quantifying transitivity: Uncovering relations of gender and power

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Abstract

Transitivity has come to be recognized as a promising heuristic tool for uncovering implicit ideologies in a wide range of areas. Though it has been used to explore worldviews in several kinds of discourse, nearly all have relied solely on qualitative analyses. Statistical analysis can offer a fuller understanding of past societies. This study applies a gradient, discourse-based understanding of transitivity, which lends itself nicely to corpus-based analysis, to data from 16th-century New Spain. In colonial Mexico, female behaviors were often strictly circumscribed. This paper uses a quantitative, corpus-based framework to examine how gender inequality is reflected in patterns of transitivity. It is found that female subjects are significantly associated with imperfective contexts, nonfinite constructions, akinesis, and low affectedness of the object—all markers of lower transitivity. Thus, for the most part, in these data, women are represented as inactive, inert, and powerless.

Keywords: transitivity; gender; representation; historical; Spanish

It is no secret that patterns in language can reveal attitudes and perceptions that otherwise remain unexpressed. The incorporation of speakers' attitudes into grammatical patterns is so commonplace, in fact, that such attitudes sometimes become codified as a part of the grammar through a process known as subjectification (Traugott, 1995). Other times, frequently cooccurring collocates can reveal speakers' attitudes toward certain social groups (e.g., Aaron, 2010; Mautner, 2007). While most such studies have focused on contemporary society, such patterns can also open unique windows to the past. In taking a historical linguistic approach to social analysis, we are no longer dependent upon the writers of the past to address or represent social inequalities explicitly in their work; the implicit biases are revealed through more subtle choices. One such subtlety is found in patterns of transitivity. Not easily analyzable via anecdotal observation, transitivity can offer us clues about how referents' roles are construed within a text. In the next section, I will define transitivity as it is used here.

Transitivity

This paper applies Hopper and Thompson's (1980) multifaceted definition of transitivity to examine representations of men and women in 16th-century New Spain (modern-day Mexico). Here, transitivity is understood, in basic terms, as "a matter of carrying-over or transferring an action from one participant to another" (Hopper & Thompson, 1980:253). This definition reflects the original meaning of the term and the way it was used by Greek grammarians such as Apolonius Dyscolus (see Martínez Vázquez, 1998). This contrasts with the dichotomous view of transitivity, which has often been understood as a syntactic phenomenon, determined most simply by a verb's ability to take a direct object (Alarcos Llorach, 1994:349), such that *build* (which can take a direct object) would generally be transitive, while *arrive* (which cannot take a direct object) would be intransitive. However, Thompson and Hopper (2001:28) argued that "transitivity is composite and [...] a matter of the grammar of the entire clause, rather than just the relationship between a verb and its object." For an overview of much of the research on transitivity, see Bilous (2012).

In their 1980 article, Hopper and Thompson first introduced their scale of transitivity, which consists of 10 dimensions meant to gauge one facet of the transferal of action.

- (1) Participants: The transferal of action requires at least two participants, so contexts with two or three participants are considered high in this category.
- (2) Aspect: An action presented as completed (e.g., perfective) has been transferred more effectively than an incomplete action (e.g., imperfective).
- (3) Kinesis: Actions that involve physical movement are more effectively transmitted than those that do not.
- (4) Punctuality: When the inception and the completion of an event or action are indistinguishable, the clause is considered punctual, which indicates more effective transmission of the action.
- (5) Volitionality: A clause is considered to be high in volitionality if the subject is presented as acting intentionally.
- (6) Mood: Actions that have occurred in the real world (realis) and not in a non-real world (irrealis) show more effective action transferal.
- (7) Agency: The higher in potency the agent of an action, the more effective the transmission of the action.
- (8) Object affectedness: The more affected the patient of an action, the more effective the transmission of the action.
- (9) Affirmation: If an action is affirmed, its transmission is more effective than if it is negated.
- (10) Object individuation: Individuation—the distinctness of the object from the subject, as well as from its own background—is measured by several parameters (Table 1). The greater the object individuation, the more effective the transmission of the action.

This scale has been taken up by many researchers interested in usage-based models of language (García-Miguel, 2023). One testament to the centrality and utility of this model for Spanish is its prominence in the studies gathered in Clements and

Table 1. Characteristics of individuation and non-individuation (from Hopper & Thompson 1980:253)

Individuated	Non-individuated
Proper	Common
Human	Inanimate
Concrete	Abstract
Singular	Plural
Count	Mass
Referential, definite	Non-referential

Yoon's (2005) volume, *Functional approaches to Spanish syntax: Lexical semantics, discourse and transitivity*. These studies, primarily qualitative, show the wide reach this approach to transitivity can have, from understanding word order to explaining causatives. Another is Vázquez Rozas and García-Miguel's (2006) detailed quantitative study of the correlation between subjectivity and transitivity in different discourse genres. To my knowledge, however, Hopper and Thompson's (1980) model has yet to be applied quantitatively to studies of sociolinguistic variation.

Research questions

This paper applies this composite definition of transitivity to representations of women and men in 16th-century New Spain. Though differences found are described as “gender” differences, it should be noted that a binary, sex-based system of categorization of both referents and writers is used. This binary approach reflects both the way gender was understood at the time and place the analyzed texts were produced and the limitations of working with historical data, which often do not provide nuanced information regarding gender identity. I use the term “gender” and not “sex” throughout this paper because what is of interest here is the social construction—as revealed through language use—of the (sex-based) gender categories of the time.

Following DuBois (1987), three basic syntactic roles are distinguished: A (subject of a verb with an object complement), S (subject of a verb with no object complement), and O (object, further divided into direct object [DO] and indirect object [IO]). This tripartite distinction “neutralizes the bias implicit in the traditional received categories and opens the way for a more effective investigation of grammatical relations” (DuBois, 1987:807). It is important to note that here these labels are syntactic in nature, and A and O should not be confused with the semantic labels of “agent” and “patient,” respectively, though in many contexts they may coincide with these semantic roles.

Within this framework, it is assumed that higher transitivity (that is, more successful transmission of the action) is associated with a greater power difference between A and O. Therefore, it is argued that a stronger association of one gender with A in high-transitivity contexts would reveal gender-based differences in the authors' perceived notions of social power. The same is true for any gender bias in O, but here the perceived power differential would be in the opposite direction. To test this hypothesis, this paper asks the following questions:

- (1) Using Hopper and Thompson's (1980) definition of transitivity, are high-transitivity contexts associated with female or male participants in 16th-century texts from New Spain?
 - (a) How often does each gender appear as an A or S, and how often as an O?
 - (b) To what extent do A and S of each gender occur in constructions of high transitivity?
- (2) Does the gender of the writer affect transitivity patterns in 16th-century texts from New Spain?

It is found that women—especially in texts produced by males—are consistently and significantly associated with the DO role in higher-transitivity contexts, while they tend to appear as A or S mainly in lower-transitivity contexts. These results provide linguistic evidence for gender differences in the representation of women and men in early colonial Mexican texts.

Gender in New Spain

In New Spain, patriarchy was a powerful and persuasive ideology in society at large, and served as the “dominant metaphor for a variety of hierarchies ... that were organized upon the principles of patrons and clients and cut across social and ethnic boundaries” (Seed, 1988:7). These expectations were, nevertheless, mediated by social class and race, allowing certain women more agency than others (Gonzalbo, 1985:12). As Aaron (2004) noted, “women were expected to be submissive to their husbands and superiors (Gonzalbo, 1985:12), silent (Chinchilla, 1996), secluded (Arenal & Schlauf, 1989:1), and inactive in public life and public spaces (Chinchilla, 1996:37; Gonzalbo 1985:13)” (602). In the home life of colonial Spanish America, “both the objects in the home and the women themselves belonged to the men” (Arenal & Schlauf, 1989:3). Despite such pressures, women at all levels of society still managed to be active in many areas of public life, including religion, commerce, and recreation (Gonzalbo, 1985:13-14), though not without social censure (Moraña, 1996:7-8).

Quantitative linguistic exploration of such gender relations in Spanish is still scarce. Nonetheless, Torres Cacoullos (2018), in a quantitative study of gender differences in subject expression in 13th- to 16th-century Spanish, found that female subjects were less frequent and more deictically distant than their male counterparts. The unexpectedness of the female subject meant a greater rate of expression for the female personal pronoun *ella* ‘she’, reflecting the socio-pragmatic expectations of the era.

Transitivity and worldview

Many usage-based scholars examining transitivity have been drawn to the sociopolitical implications of multifaceted definitions of transitivity, which have come to be recognized as a promising heuristic for uncovering implicit ideologies. As Matu (2008:201) explained, “transitivity shows how speakers encode in language their mental picture of reality and how they account for their experience of the world around them.” This means that speakers’ worldview—a view they will rarely articulate explicitly—may be accessed in part through their application of transitivity patterns in language use.

As such, Thompson (2008:17) argued that transitivity analysis “is one of the most effective ways of exploring the ideological assumptions that inform and are construed by the texts” (see also Lee, 2016:466). Indeed, Fowler (1991:70) called transitivity an “essential tool in the analysis of representation.” Several previous corpus-based studies have recognized the utility of transitivity in uncovering implicit power relations (e.g., Hubbard, 1999; Ji & Shen, 2004; Page, 2003; Ryder, 1999; Teo, 2000; Wareing, 1994). However, apart from Karimi, Lukin, Rotha Moore, Walczak, and Butow (2018), all such studies have relied solely on qualitative analyses. Because ideological transmission is “most effective when its workings are least visible” (Fairclough, 2001:71), statistical analysis can offer us a fuller understanding of past societies (Diller & Khanittanan, 2002:48; Franzosi, 2010) and bygone social structures.

Hopper and Thompson’s (1980) discourse-based yet structural understanding of transitivity lends itself nicely to quantitative corpus-based analysis (see, for instance, Oropeza Escobar, 2011). These authors mentioned the following components of transitivity: number of participants, kinesis, aspect, punctuality, volitionality, affirmation, mood, agency, object affectedness, and object individuation. As such, (2) would be more transitive, while (1) would be less transitive, though both meet the traditional definition of “transitive” constructions, given that (2) is high in kinesis, volitionality, and object affectedness, while (1) is not. Nonetheless, (1) is more transitive than (2) in terms of aspect and punctuality. Moreover, both examples have two participants, realis mood, and affirmative polarity.

- (1) *Y pasado el rio que dizen de Grijalva, de aquella parte de Guaçacualco, çerca de duzientas leguas desta çibdad de Tenustitan, halló los yndios de guerra, que no estan del todo sujettos al domjnjo de vuestra majestad.*

‘And having passed the river that they call Grijalva, in that part of Guaçacualco, close to two hundred leagues from this city of Tenustitan, he **found** the **Indians** of war, not all of whom are subjects of Your Majesty’s dominion.’

(DLNE, doc. 1, 1525; see Company Company, 1994)

- (2) *Y a los yndios que de aca yban con los christianos diz que guardaron para comer, y a los **christianos hechaban** en la laguna*

‘And the Indians who were travelling from here with the Christians, it’s said they kept [them] to eat [them], and they **threw** the **Christians** into the lagoon’

(DLNE, doc. 1, 1525)

Data and methods

Corpus

This study examines data from the 16th century from *Documentos lingüísticos de la Nueva España: Altiplano central* (Company Company, 1994; henceforth DLNE). The section of the corpus used here includes 78 written documents dating from 1535 to 1585 (word count = 90,527). These documents, compiled based on their approximation to the spoken language of the time, “are colloquial in nature” and show “a more fluid syntax” (Company Company, 1994:5). The DLNE contains four principal types of documents: letters, court testimonies, inventories and wills, and petitions and reports.

The testimonies are primarily transcriptions of oral testimonies from illiterate citizens. Thus, this corpus is likely to be more representative of the diversity of Mexican colonial society as a whole than traditional literary corpora. However, by having ultimate control over the written product, male transcribers still maintained their hegemony, and through their language we find, as Schlau (1996:183) stated, “as much revealed about social norms [...] as in religious papers and dogma.” In colonial Mexico, female and non-white spaces were often strictly circumscribed, though Osowski (2010) noted that the formation of new cultural practices in the nascent society also offered spaces for the creative assertion of agency.

Data extraction

This paper quantitatively examines the transitivity patterns associated with third-person references to women and men in 16th-century texts in the DLNE. Using a combination of keyword searches and manual reading, all third-person female referents were extracted from the corpus, resulting in 262 examples taken from 18 of the 78 documents (the others included no female referents). This was then matched with male referents, with a maximum of 10 examples taken from each document, until a comparable amount ($n = 246$) was found. The extraction of male referents generally followed the document order in the corpus, which required about 8,385 words of the 90,527-word corpus and involved 26 of the 78 documents (53,968 words).¹

Coding

Relevant contexts are analyzed in terms of Hopper and Thompson’s (1980) transitivity, including number of participants (operationalized as grammatical role), kinesis, aspect, mood, punctuality, volitionality, affirmation, object individuation, and object affectedness. I did not attempt to code for agency directly. Given the historical and cultural distance between 16th-century inhabitants of New Spain and myself, I chose to avoid any measure of agency that would rely on my own (culturally specific) perceptions of power and distance. Nonetheless, we may glean some information about agency patterns through other measures, such as volitionality, grammatical role, and object affectedness.

In this model and elsewhere, the measures of transitivity are understood as gradient and not binary. Nonetheless, some of these measures are coded as binary or tripartite categories to best show the contrast between maximally differing examples; this is not meant to imply any lack of continuity within the categories themselves. Table 2 shows all of the factors coded, with examples for each.

Grammatical role. First, to measure the number of participants, all examples were coded for the syntactic role of the referent. The roles coded included subject of a verb with an object complement (A), subject of a verb with no object complement (S), direct object (DO), indirect object (IO), obliques, genitive (or possessive) constructions, and other, which included elements that were not incorporated syntactically (see Table 2). After this initial coding, subsequent coding was limited to examples including subjects (S and A, $n = 263$) and/or objects (DO and IO, $n = 133$), as these arguments are most closely related to the verb and thus the most revealing in terms of transitivity patterns. As García Miguel (1995:97-98) has noted, nouns that occur within

Table 2. Examples of the measures coded for quantitative analysis

Factor	Example
<i>(Agency) Grammatical role</i>	
A	<i>Ha resçibido de Pero Gallego un plumaje muy rico, 'he has received from Pero Gallego a very rich plumage,' (DLNE, Doc. 9)</i>
S	<i>y su hija quedava en casa, 'and her daughter stayed at home,' (DLNE, Doc. 20)</i>
DO	<i>este testigo embió a una yndia con una criatura suya a cuestas, 'this witness sent an Indian woman with a little one behind her,' (DLNE, Doc. 56)</i>
IO	<i>el dicho Maldonado, que alli estava, oviese tomado a la dicha yndia los dichos tres pesos, 'the aforementioned Maldonado, who was there, had taken the three pesos from the aforementioned Indian woman,' (DLNE, Doc. 56)</i>
Oblique	<i>otro delito hecho en mi cassa y con la dicha mi hija 'other crime committed in my house and with my daughter,' (DLNE, Doc. 75)</i>
Genitive	<i>este testigo conoçia a los padres de la dicha donzella 'this witness knew the parents of said young woman,' (DLNE, Doc. 53)</i>
Other	<i>este testigo embió a una yndia con una criatura suya a cuestas, hija deste testigo, con tres pesos, 'this witness sent an Indian woman with a little one behind her, daughter of this witness, with three pesos,' (DLNE, Doc. 56)</i>
<i>Kinesis</i>	
None	<i>Y que si quería religion, podria entrar en un monasterio de monjas, 'and if she wanted religion, she could enter a nun monastery,' (DLNE, Doc. 53)</i>
Medium	<i>una carta que Gorge de Alvarado escrivjo a Pedro de Alvarado 'a letter that Jorge de Alvarado wrote to Pedro de Alvarado,' (DLNE, Doc. 4)</i>
High	<i>la dicha Leonor Alvarez, madre de la dicha Catalina, arrojó a este que declara una picadera, 'said Leonor Álvarez, mother of the forementioned Catalina, threw a pecking hammer at the declaring witness,' (DLNE, Doc. 20)</i>
<i>Aspect</i>	
Perfective	<i>segund esta muger me dixo, 'according to what this woman told me,' (DLNE, Doc. 7)</i>
Imperfective	<i>estava obligada esta testigo a callar, 'this witness was obligated to keep quiet,' (DLNE, Doc. 54)</i>
Perfect	<i>los que han quedado en la tierra, 'those who have stayed in the land,' (DLNE, Doc. 13)</i>
Other/unmarked	<i>la amenazava diciendo que callase, 'he threatened her, telling her to be quiet,' (DLNE, Doc. 54)</i>

(Continued)

Table 2. (Continued.)

Factor	Example
<i>Mood</i>	
Realis	<i>Yella bolvio,</i> 'and she returned ,' (DLNE, Doc. 56)
Irrealis	<i>Para que ella venga, enbia çien pesos,</i> 'so that she [can] come , send 100 pesos,' (DLNE, Doc. 33)
Nonfinite	<i>Y la dicha Luisa de Gallegos, acuitandose y llorando, dixo,</i> 'and the aforementioned Luisa de Gallegos, lying down and weeping , said,' (DLNE, Doc. 55)
<i>Punctuality</i>	
Punctual	<i>la susodicha le respondio que llorava su mala ventura,</i> 'the aforementioned woman responded that she was crying because of her misadventure,' (DLNE, Doc. 55)
Non-punctual	<i>su hija, que estava mala en la cama,</i> 'her daughter, who was sick in bed,' (DLNE, Doc. 20)
<i>Volitionality</i>	
Volitional	<i>quando ella se yva acostar que hera muy tarde,</i> 'when she was going to lie down because it was very late,' (DLNE, Doc. 55)
Non-volitional	<i>entendiendo que ternia neçesidad de comida,</i> 'understanding that she would be in need of food,' (DLNE, Doc. 53)
<i>Affirmation</i>	
Affirmed	<i>el deseo que tyene de servir,</i> 'the desire he has to serve,' (DLNE, Doc. 2)
Negated	<i>le dixo que no obedesca al licenciado Marcos de Aguilar,</i> 'he told him not to obey Lic. Marcos de Aguilar,' (DLNE, Doc. 4)
<i>Object individuation</i>	
High	<i>Suplico a v. m. dé al señor Ocaño media arroba de muy buen vino,</i> 'I beg you to give Mr. Ocaño half an arroba of very good wine,' (DLNE, Doc. 21)
Low	<i>de los que les tenian alli sus vestidos,</i> 'whose clothing they had there,' (DLNE, Doc. 17)
<i>Object affectedness</i>	
Low	<i>no tiene otro hijo aca,</i> 'he does not have any other son here,' (DLNE, Doc. 26)
Medium	<i>Suplico a v. m. dé al señor Ocaño media arroba de muy buen vino,</i> 'I beg you to give Mr. Ocaño half an arroba of very good wine,' (DLNE, Doc. 21)
High	<i>que tambien açotarian a esta testigo,</i> 'that they would flog this witness as well,' (DLNE, Doc. 54)

prepositional phrases (including oblique and genitive constructions) have a less direct and less central relationship to the main verb than that of syntactic objects.

Kinesis. All tokens with subjects or objects of interest were coded for kinesis. Occurrences that involved clear movement (e.g., *viajar* ‘travel’) were coded as high, while those with limited movement (e.g., *escribir* ‘write’) were coded as intermediate; contexts with no inherent movement (e.g., *pensar* ‘think’) were coded as akinetic.

Aspect. Aspect, coded for subjects and objects, was determined through verbal morphology, such that occurrences in Preterit were coded as perfective, while those in Imperfect were coded as imperfective. A third morphological category, that of Perfects, was also coded. However, as Perfects can express both perfective and imperfective meanings (Detges, 2000), these were included with other forms that were unmarked for aspect, such as Present and nonfinite constructions. Among subjects, this left 46% ($n = 120/263$) of occurrences to be coded as unmarked for aspect, and among objects, 57% ($n = 76/133$). The shrinking of the data set for aspect, though not ideal, is an honest reflection of the tense, aspect, and mood (TAM) distribution in the corpus.

The reasons for choosing morphological over semantic marking as a basis for coding aspect are threefold. First, the main interest is in the contrast between perfective and imperfective contexts, as completed actions are considered to have the most effective transmittance of the action (Hopper & Thompson, 1980). Indeed, Hopper and Thompson (1980:252) contrasted a perfective (or telic) use of *eat* in *I ate it up* with the imperfective (or atelic) *I am eating it*. Although these authors relied on semantic and not morphological cues (see also Thompson & Hopper, 2001:35), this is most likely due to the lack of morphological marking of telicity in English. Fortunately, Spanish differentiates such contexts morphologically. Moreover, as García-Miguel (1995:83) noted, “the global aspectuality of a predicate is determined by the entire structure of a clause, and not solely by the lexical properties of its verb or by the grammatical characteristics of the predicate” (translated from Spanish). Given aspectual markers’ theoretical ability to occur with any Aktionsart, and therefore speakers’ ability to mark any verb as they choose, the morphological marking of aspect has sometimes been characterized as “subjective aspect” (García-Miguel, 1995:83, translated from Spanish). Since what is of interest here is the writers’ contextualized representations of the referents, this kind of aspect would be most informative for this analysis.

Second, another reason to differentiate between morphological perfectives and imperfectives when examining transitivity is that these are generally understood to play a role in foregrounding and backgrounding information, respectively (Hopper, 1977). Perfectivity and imperfectivity, then, would be further associated with higher versus lower transitivity, respectively, as backgrounded information is generally lower in focus and thus involves less transfer of energy. Finally, although overlaps and interactions between measures of transitivity are inevitable, the goal here was to include measures that could at least be differentiated. Had lexical aspect been used to measure aspect, this coding would have overlapped almost completely with two other measures: punctuality and kinesis.

Mood. The data were coded for mood as realis, irrealis, or as neither (nonfinite). Included in irrealis were all subjunctive, conditional, future, and imperative forms. Realis included all other finite verbs.

Punctuality. For punctuality, the data were coded dichotomously, as either punctual or not punctual, using the lexical aspect of the verb.

Volitionality. Volitionality was also coded dichotomously. All examples were coded as volitional unless the action was one that could not be done voluntarily (e.g., being hungry, receiving something, having certain innate characteristics) or was not being done voluntarily (e.g., being mistreated, becoming poor, dying).

Affirmation. Clauses with no negation were coded as affirmative, while those with any sort of negation were coded as negated.

Object individuation. Object individuation is one of two measures of the O in Hopper and Thompson's (1980) model of transitivity, the other being Affectedness of O. According to these authors, individuation is measured both in terms of its distinctness from the A and from its own background (see Table 1). To operationalize this measure, the features of number, animacy, and referentiality were primarily used.

Object affectedness. Object affectedness refers to "the degree to which an action is transferred to a patient" (Hopper & Thompson, 1980:252-253); the greater the effect on the O, the greater the effectiveness of the A. Here, O affectedness was coded as low, medium, or high. In ditransitive contexts, whichever role (DO or IO) was represented by the female or male referent of interest was considered the O. This choice was made for several reasons, including the variable marking of third-person objects in colonial Spanish, which were often simply written as *l'*), eliminating any formal distinction, as well as the fluidity between DO and IO afforded by *leísmo* (the use of typically IO marking for some—usually male—human DOs), which was common in 16th-century Spanish. Notably, in highly affected ditransitive contexts, there was generally little distinction between the (human) IOs and the DOs, which included inalienable possessions like "fingers" and "virginity."

A note on interactions

In light of these multiple factors, it may be tempting to attempt to examine variation in transitivity through multivariate analysis. However, Hopper and Thompson (1980:255, 294) noted that these measures interact with each other and are clearly interrelated. In a quantitative analysis of English, Nicolas (2018-2019:47-55) found correlations between kinesis and aspect, kinesis and punctuality, kinesis and volitionality, kinesis and the affectedness of O, affirmation and mood, mood and affectedness of O, affirmation and affectedness of O, and volitionality and agency. Indeed, Pollán's (2001:66-67) multiple attempts to submit these transitivity measures to multivariate analysis ultimately failed. Considering this, the present study used Chi-squared tests to check for statistical significance. While such tests cannot eliminate the interactions between transitivity measures, they do allow us to look at each on its own, without mathematical interference in the results from other factors. Nonetheless, we must always keep in mind that these measures are correlated and can never be considered independent in the context of transitivity.

Results

In general, females are significantly underrepresented in the corpus ($p < .0000$). By normalizing the frequencies for female and male referents, we find that the ratio of

female to male is 1:10.1, with female referents occurring at a rate of 289.4 per 100,000 words and males at 2,933.8 per 100,000 words (Table 3).²

Table 3. Raw and relative frequencies of third-person referents in DLNE by gender ($p < .0000$)

	N	Total words	Per 100,000 words
Female referents	262	90,527	289.4
Male referents	246	8,385	2,933.8

Overall, we will see that female referents are less likely to be represented as initiators of actions that affect an object, and when females occur as A or S, it tends to be in clauses with lower transitivity than those of their male counterparts. Of the transitivity measures included here, significant differences ($p < .05$) were found in grammatical role, aspect, mood, affectedness of the object, and kinesics.

Grammatical role

Table 4 and Figure 1 show grammatical role by referent gender. In situations with more than one participant, female referents are significantly less likely to be As ($p = .0021$) and more likely to be DOs ($p = .0038$). For instance, in (3), there is a male A, while in (4), there is a female DO paired with yet another male A.

Table 4. Grammatical role by referent gender (for A, $p = .0021$; DO, $p = .0038$; all others, $p > .05$)

	Subject (A)		Subject (S)		DO		IO		Genitive		Oblique		Other		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Female	64	24	60	23	45	17	30	11	10	4	44	17	9	3	262	52
Male	91	37	48	20	21	8	37	15	17	7	28	11	4	2	246	48
Total	155	30	108	21	66	13	67	13	27	5	72	14	13	2	508	100

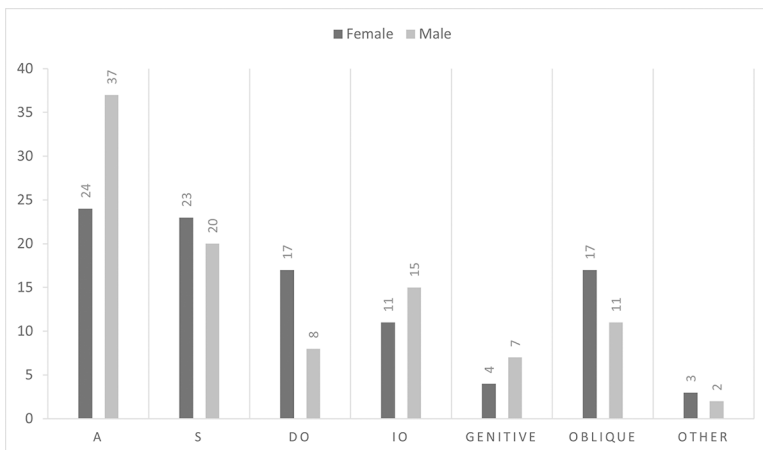


Figure 1. Percentage of grammatical role by referent gender (for A and DO, $p < .05$; all others, n.s.).

(3) Male A

*El virrey desta Nueva España me **dio** una carta de buestra magestad*
 ‘**The viceroy** of this New Spain **gave** me a letter from you’
 (DLNE, doc. 24)

(4) Female DO, male A

Y él le dezia que no hera pecado, y **la amenazava** diciendo que callase,
 que tambien **açotarian a esta testigo**
 ‘And he told her that it wasn’t a sin, and he **threatened her**, telling her to
 shut up, that they would **beat this witness** [her], too’
 (DLNE, doc. 54)

Though women are less likely than men to appear as A in two-participant situations in this corpus, they are just as likely to appear as S in one-participant constructions. It is here we can take a closer look at transitivity as a representational tool. When women appear as grammatical subjects—in situations with only one participant or with more than one—are the contexts in which they act more or less transitive? Given females’ propensity to appear as DO and not as A in this corpus, we would hypothesize that their roles as grammatical subjects would be less transitive. In Hopper and Thompson’s terms, then, we would expect lower perfectivity, realis, kinesis, and object affectedness. This is, indeed, what we find.

Aspect

As Hopper and Thompson (1980:252) explained, in imperfective aspect, the transferal of an action to the patient “is only partially carried out.” Thus, grammatical subjects in imperfective contexts—here overwhelmingly female—are less effective in (completing) their actions than are subjects of perfective actions—here more often male. In Table 5 and Figure 2, which show aspect among subjects by subject gender, we see that women subjects are significantly more likely to appear in imperfective contexts, as in (5), at 42%, versus 9% for males.³ Male subjects are more likely to appear in all other aspects, significantly so in the case of Perfect ($p = .0027$) and contexts unmarked for aspect ($p = .0163$).

(5) Female subject with imperfective aspect

*Y preguntandole este testigo que por qué **llorava**, la susodicha le respondió que **llorava** su mala ventura*

Table 5. Aspect among subjects by subject gender (imperfective, $p = .0000$; perfect, $p = .0027$; unmarked, $p = .0163$; perfective, n.s.)

	Perfective		Imperfective		Perfect		Unmarked		Total	
	N	%	N	%	N	%	N	%	N	%
Female	32	25	52	42	5	4	35	28	124	47
Male	47	34	12	9	21	15	59	42	139	53
Total	79	30	64	24	26	10	94	36	263	100

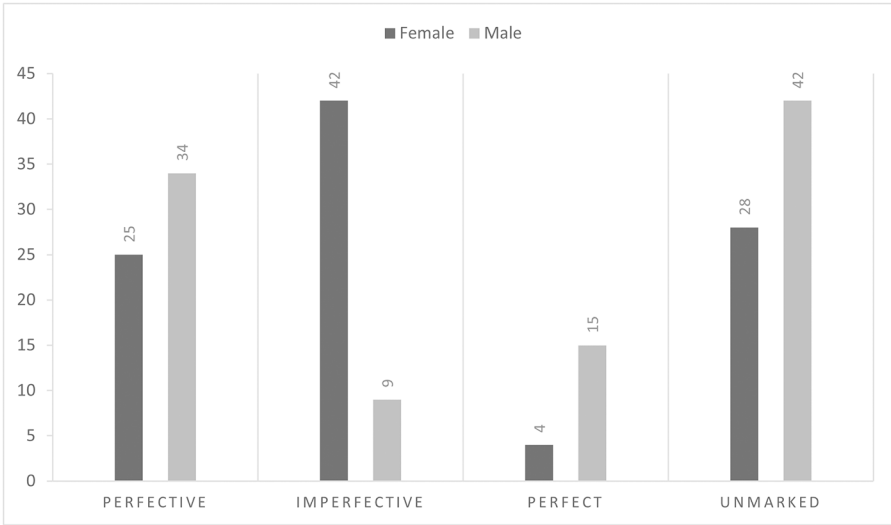


Figure 2. Percentage of aspect among subjects by subject gender (for imperfective, perfect, and unmarked, $p < .05$; perfective, n.s.).

‘And this [male] witness asking her why **she was crying**, the abovementioned women replied que **she was crying** about her bad luck’
(DLNE, doc. 55)

Table 6 shows the results for aspect according to object gender. Here, again, females are more likely to occur in imperfective contexts. This could mean that female Os are less likely to have energy transferred to them completely. However, given the results for object affectedness given below (in which female objects are more highly affected), this is not the most likely explanation. Perhaps the results for aspect, both for subjects and objects, point toward a backgrounding of women’s experiences, as imperfective contexts tend to encode backgrounded information (Hopper, 1977). This also aligns with the significant difference among subjects in Perfect contexts, which have more male subjects, as the Perfect is generally associated with current relevance (and thus less likely to be backgrounded).

Table 6. Aspect among objects by object gender (imperfective, $p = .0193$; all others, n.s.)

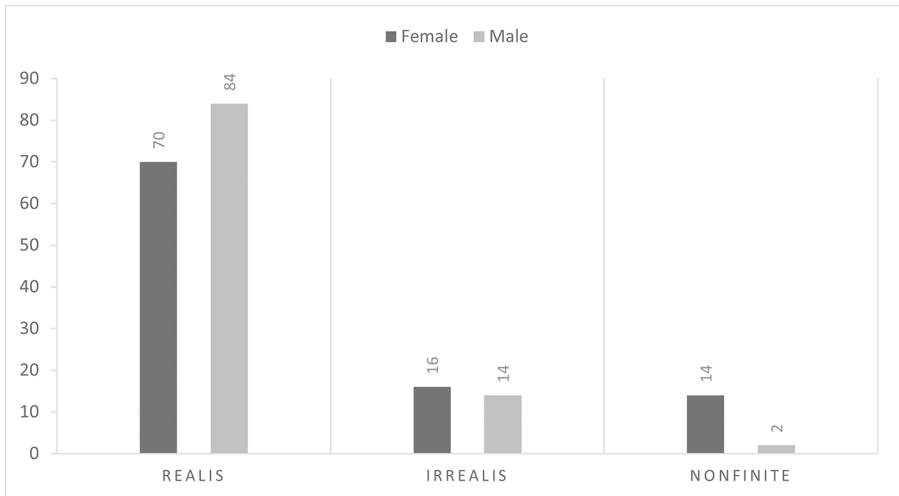
	Perfective		Imperfective		Perfect		Unmarked		Total	
	N	%	N	%	N	%	N	%	N	%
Female	14	19	12	16	9	12	40	53	75	56
Male	14	24	2	3	6	10	36	62	58	44
Total	28	21	14	10	15	11	76	57	133	100

Mood

Irrealis events, events that did not happen or that occur only in a non-real world, are “obviously less effective” (Hopper & Thompson, 1980:252) than realis events. Here,

Table 7. Mood by subject gender (for realis, $p = .0065$; nonfinite, $p = .0004$; irrealis, n.s.)

	Realis		Irrealis		Nonfinite		Total	
	N	%	N	%	N	%	N	%
Female	87	70	20	16	17	14	124	47
Male	117	84	19	14	3	2	139	53
Total	204	78	39	15	20	8	263	100

**Figure 3.** Percentage of mood among subjects by subject gender (for realis and nonfinite, $p < .05$; irrealis, n.s.).

male subjects are significantly more likely to occur in realis contexts, as in (6), at 84%, versus 70% for females ($p = .0065$; Table 7, Figure 3).

(6) Male subject, realis

Y vieron que en estorvar mj camjno se me hazía mucho agravio
 ‘And **they** saw that blocking my way caused me much grief’
 (DLNE, doc. 12)

Women subjects, on the other hand, are significantly more likely to occur in contexts unmarked for mood (i.e., nonfinite contexts), at 14%, versus 2% for males ($p = .0004$). These contexts are often gerunds, and the information given about the woman is backgrounded, as in (7). This interpretation is consistent with the findings for aspect, in which female subjects and objects are more closely associated with imperfective contexts, which also tend to be backgrounded (Hopper, 1977).

(7) Female subject in a nonfinite context

porque parecía mal siendo moça andar por los caminos y calles y campos,
*especialmente **teniendo** una hija donzella de doze o treze años.*

‘because it looked bad, **being** a girl, to walk around the roads and paths and country, especially **having** a young daughter of 12 or 13 years of age.’
(DLNE, doc. 53)

For objects, mood showed no significant correlation with gender.

Object affectedness

The difference between female and male grammatical subjects becomes even clearer when we turn to object affectedness. First, looking at O affectedness by the gender of A, the greater the affectedness, the stronger the association with higher transitivity. These results are shown in Table 8 and then synthesized into a dichotomous measure in Figure 4, for all As by A gender. Here we see that when the A is male, only about half ($n = 48/91$, 53%) of the objects are left unaffected. On the other hand, when the A is female, the O is unaffected nearly three-quarters of the time ($n = 47/64$, 73%), representing a significant difference ($p = .0093$).

Table 8. Affectedness of O by A gender (for not affected, $p = .0092$; somewhat affected, $p = .0125$; highly affected, n.s.)

	Not affected		Somewhat affected		Highly affected		Total	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Female	47	73	12	19	5	8	64	41
Male	48	53	34	37	9	10	91	59
Total	95	61	46	30	14	9	155	100

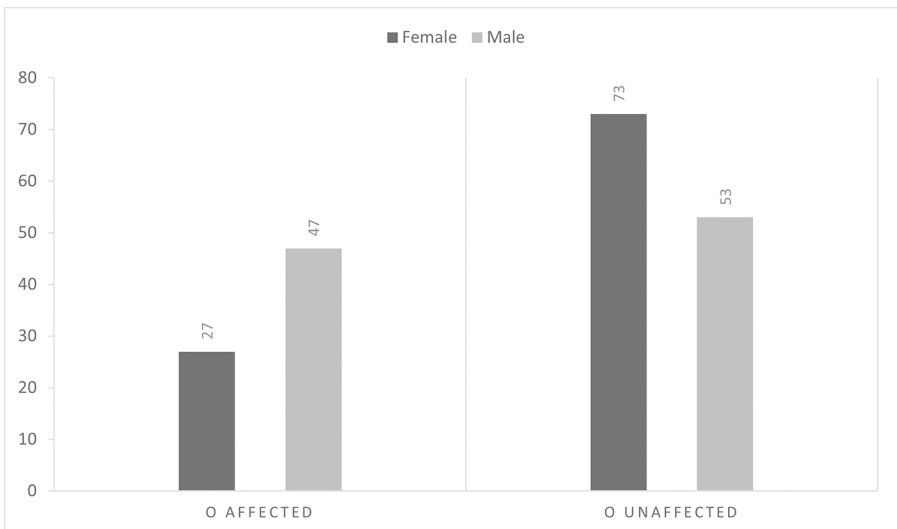


Figure 4. Percentage of affectedness of object by agent gender ($p = .0093$).

This suggests that even in the apparently most powerful grammatical position, A, females are represented as having less effect on the world around them. Interestingly, two of the five examples (40%) in which a female A has a highly affected O are reflexive constructions, such that the A is also the O, as in (8).

(8) Female A and O in reflexive construction, highly affected O

Y se fue a una imagen de Nuestra Señora, y se dava en los pechos.

‘And she approached an image of Our Lady and was **hitting herself in the chest**’

(DLNE, Doc. 55)

In only one context—which is described twice in the text and was thus counted twice in the study—do we see a physical act of violence committed by a woman against a man (9).

(9) Female A with highly affected male O

Preguntado sy por cabsa de averse echado carnalmente éste que declara con la dicha Catalina, la dicha su madre Leonor Alvarez, despues que lo supo, arrojó a éste que declara una picadera, diziendole que por qué avia desonrada a su hija

‘Asked if, because this witness had had carnal intercourse with the said Catalina, the said mother Leonor Alvarez, after she found out, **threw a small pecking hammer at this witness**, asking him why he had dishonored her daughter’

(DLNE, Doc. 20)

Indeed, the typical female A looks much more like the A in (10), who is, notably, the same woman who purportedly threw the pecking hammer.⁴ In some cases, the female A is in fact a highly affected subject and behaves semantically more like a patient, as in (11).

(10) Typical female A

Preguntado qué hijas tenja la dicha Leonor Alvarez, dixo que dos, una casada e otra <una> donzella.

‘Asked what daughters **the aforementioned Leonor Alvarez had**, he said two, one married and the other unmarried’

(DLNE, Doc. 20)

(11) Female A with unaffected O

los pueblos que fueron tasados en manta, que al principio eran pequeñas cuando començaron a tributar, y agora azenselas dar tan grandes que son más diez que no veynte de las que davan al principio. Y aun en la anchura dellas an crecido tanto, que las mujeres rreçiben notable daño y travajo en tesello, y ase allado malparir por ello.

‘the towns that were taxed in textiles, which at first were small when they began paying tribute, now they they make them give them such large ones that it is more like ten and not the twenty that they were giving in the beginning. And their width has even grown so much that **the women receive**

notable pain and labor in weaving it, and some have been found to miscarry from this.’

(DLNE, doc. 24)

Moving on to look at O affectedness by the gender of O, shown in Table 9, one significant difference emerges: female Os are more likely to be highly affected ($p = .0310$).

Table 9. Affectedness of O by O gender (or highly affected, $p = .0310$; all others, n.s.)

	Not affected		Somewhat affected		Highly affected		Total	
	N	%	N	%	N	%	N	%
Female	20	27	28	37	27	36	75	56
Male	17	29	30	52	11	19	58	44
Total	37	28	58	44	38	28	133	100

Alarming, there seems to be a trend within the context of high affectedness in the case of female referents. The verbs that occur with these female O include the following: *acometer* ‘commit’ (euphemism for rape), *alzar* ‘lift up,’ *amenazar* ‘threaten,’ *aporrear* ‘beat (with a club),’ *azotar* ‘flog,’ *casar* ‘marry (off),’ *castigar* ‘punish,’ *corromper* ‘corrupt’ (rape), *deshonrar* ‘dishonor’ (rape), *echar a galeras* ‘throw to the galleys,’ *estupar* ‘rape,’ *hacer venir* ‘make come’ (migration), *hacer violencia* ‘do violence (against)’ (i.e., rape), *llevar* ‘take’ (twice, taking a woman somewhere; once, God taking through death), *llevar (su virginidad)* ‘take (her virginity)’ (i.e., rape), *morder* ‘bite,’ *pasar* ‘pass’ (pushing a woman through an open window after sexual relations), *sacar* ‘take out’ (kidnapping two female Indians from a monastery), *tomar* ‘take’ (stealing from a woman), *tomar (de los brazos)* ‘grab by the arms,’ *traer* ‘bring’ (twice, migration), and *traer (de brazo)* ‘drag by the arm.’ Indeed, 12 of the 21 verbs (57%) used to describe highly affected female Os involve direct physical and/or sexual violence against women.

In contrast, the verbs that occur with a highly affected male O include *acrecentar* ‘grow’ (in reference to labor for indigenous people), *apretar* ‘squeeze’ (in business), *enviar* ‘send’ (twice, two Christians kidnapped by indigenous people; twice, sending someone somewhere), *hacer (tratamiento)* ‘treat’ (poor treatment of indigenous people), *hacer alzamiento* ‘rise up against,’ *ocupar* ‘use’ (using indigenous men for labor), and *traer* ‘bring’ (migration). A notable number of highly affected male O were indigenous people.

Kinesis

Finally, kinesis shows a similar pattern, seen in Table 10 and Figure 5, with physical action being associated with male grammatical subjects (12) and less physical action with females (13).

(12) Kinesis with male subject

determinó de yr todavia el dicho viaje de las Higueras y sacó de aquí çiento y veynte de caballo

‘he decided to still go on the said trip to Hilgueras, and **he took out** one hundred twenty horses from here’

(DLNE, doc. 1)

(13) Lack of kinesis with female subject

*entendiendo que **tenia neçesidad de comida**, tenia cuydado de llevarle cada dia la comida en un paño*

‘understanding that **she would need food**, he took care to take her some food in a dish every day’

(DLNE, doc. 53)

Table 10. Kinesis by subject gender ($p = .0353$)

	No kinesis		Kinesis		Total	
	N	%	N	%	N	%
Female	91	73	33	27	124	47
Male	85	62	54	38	139	53
Total	176	67	87	33	263	100

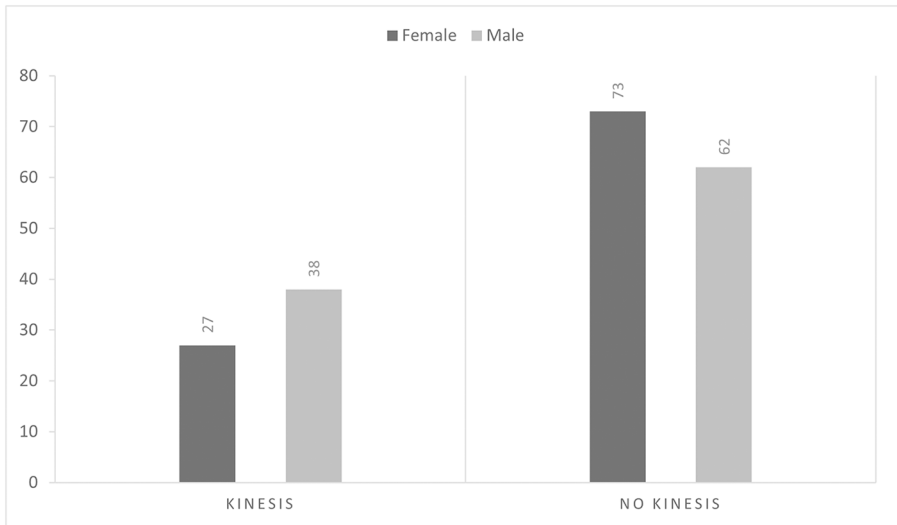


Figure 5. Percentage of kinesis by subject gender ($p = .0353$).

Nonsignificant factors

The factors found to have no significant effects were object individuation, punctuality, volitionality, and polarity. I will discuss them here briefly, as some, particularly object individuation and punctuality, show some interesting tendencies that might achieve statistical significance with a larger sample size. In most cases, the tendency points toward higher transitivity with male subjects than with female subjects.

Nonetheless, the tendencies are just that—tendencies—and cannot serve as further robust evidence of gender differences in transitivity patterns in these data, given their lack of statistical significance.

Individuation of object

In Table 11, we see that female As in these data have a higher rate of individuated objects (17%) than do male As (9%). This is the only case in which we see a (nonsignificantly) higher transitivity with female subjects than with males. Interestingly, however, Hopper and Thompson (1980:253) characterized individuated O contexts as highly transitive because “there is likely to be a focus of attention on the effect of the event” on the O, “or perhaps on both participants.” In this light, this might suggest that, in these data, when a female does act as A, the focus is more likely to be on the O than on her role in the action. However, this difference is not significant.

Table 11. Individuated O by A gender ($p > .05$)

	Individuated		Total
	<i>N</i>	%	<i>N</i>
Female	11	17	64
Male	8	9	91

Punctuality

Punctual actions, “with no obvious transitional phase between inception and completion” (Hopper & Thompson, 1980:252), are associated with higher transitivity, as their effect on the patient is more pronounced. In Table 12, we see that male subjects are slightly more likely than female subjects to engage in punctual actions in these data, at 64% and 56%, respectively.

Table 12. Punctuality by subject gender ($p > .05$)

	Punctual		Total
	<i>N</i>	%	<i>N</i>
Female	69	56	124
Male	89	64	139
Total	158	60	263

Volitionality

Highly volitional contexts are considered to indicate greater transitivity, as the effect on the patient is seen to be greater if the A acted purposefully (Hopper & Thompson, 1980). Table 13 shows that male subjects are slightly, though not significantly, more likely to appear in volitional contexts than are female subjects, at 64% and 59%, respectively. The results for this measure, which can be taken as a partial measure of agency

(not coded), echo the results for grammatical role, which also suggest more robust agency being attributed to male subjects. However, the nonsignificant results for this factor may in fact be further support for Fauconnier's (2011) argument, based on a review of 150 languages, that non-volitionality is not necessarily correlated with reduced transitivity.

Table 13. Volitionality by subject gender ($p > .05$)

	Volitional		Total
	<i>N</i>	%	<i>N</i>
Female	73	59	124
Male	89	64	139
Total	162	62	263

Affirmation

This parameter, which measures affirmation and negation, or polarity, is similar to the mood parameter in that negated contexts are understood to be lower in transitivity. Here we see almost no difference between female and male subjects, with 6% and 4% negated contexts, respectively, as seen in Table 14.

Table 14. Polarity by subject gender ($p > .05$)

	Positive		Negative		Total
	<i>N</i>	%	<i>N</i>	%	<i>N</i>
Female	117	94	7	6	124
Male	133	96	6	4	139
Total	250	95	13	5	263

Writer sex and representation

Thus far, we have seen that, in this corpus, third-person female referents seem to be associated with weaker transitivity than their male counterparts. This begs the question: Is this simply because it is a male perspective found in the majority of these texts? Indeed, only 10% of the data represent testimonies or letters from females. Table 15 and Figure 6 offer a better sense of how the speaker or writer's gender affected the representation of women.⁵ In Figure 6, we see that women and men's treatment of women referents is distinct. Most notably, female writers/speakers are more likely to portray women as A in their grammatical role and slightly less likely to portray them as S or DO. Given the small dataset for female writers, these differences are not statistically significant. Nonetheless, they are suggestive.

If we then remove female writers from the equation, as in Table 16 and Figure 7, which show only male-authored texts, the significant discrepancy in gender representation in A and direct objects becomes even clearer, with men represented as A nearly

Table 15. Female referents' grammatical role by writer/speaker sex ($p > .05$ for all measures)

Writer sex	A		S		DO		IO		Genitive		Oblique		Other		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Female	15	29	8	16	7	14	8	16	3	6	8	16	2	3	51	100
Male	49	23	52	25	38	18	22	10	7	3	36	17	7	3	211	100
Total	64	24	60	23	45	17	30	11	10	4	44	17	9	3	262	100

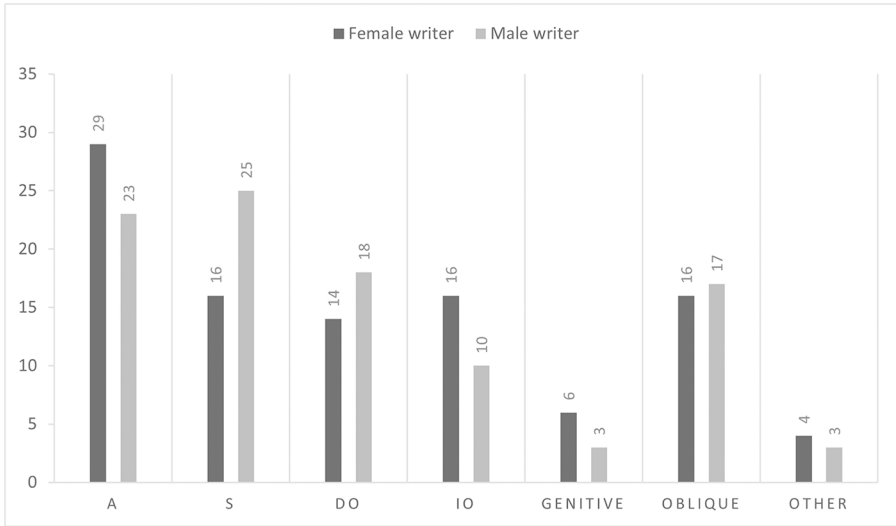


Figure 6. Percentage of female referents' grammatical role by writer/speaker sex ($p > .05$).

twice as often as women, at 37% and 23%, respectively, and women being more than twice as likely to appear as DOs, at 18%, versus men at 8%. Interestingly, women are also more likely—though not significantly so—to be represented in men's texts as S. It is important to remember that S, unlike A, carries out no transfer of action. Thus, those in the S role, like the female subjects in Nair and Rosli's (2013) study of children's literature, are not actually being accorded a position of power.

Table 16. Referents' grammatical role by gender in male-produced texts (for A, $p = .0015$; for S, n.s.; for DO, $p = .0026$; for IO, n.s.; for gen, n.s. [$p = .0860$]; for obl, n.s. [$p = .0811$]; for other, n.s.)

Ref. gender	A		S		DO		IO		Genitive		Oblique		Other		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Female	49	23	52	25	38	18	22	10	7	3	36	17	7	3	211	100
Male	91	37	48	19	21	8	37	15	17	7	28	12	4	2	246	100
Total	140	31	100	22	59	13	59	13	24	5	64	14	11	2	457	100

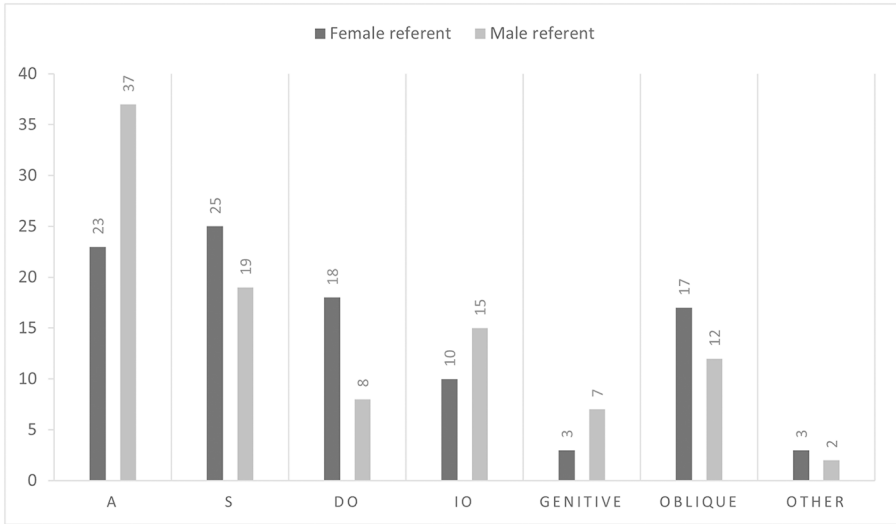


Figure 7. Percentage of grammatical role by referent gender in male-authored texts.

Nonetheless, these significant differences in overall representation should not be taken to mean that these 16th-century men never portrayed women as powerful. One notable exception can be seen in Document 7, with excerpts in (14) and (15).

(14) *vuestra majestad embió presidente y odores [sic], y agora ay éstos y más: presidenta e oydores, que éstas se han sentado en los estrados reales, estando ellos presentes, y han juzgado contra ellos, y dieron por sentencia que se casasen por la disolución de sus personas. Y certifico a vuestra majestad que propriamente éstas tienen el cargo de la justicia [...]. Los que bien han de negociar y quieren favor del presidente e oydores a ellas ocurren primero porque no se les niega cosa.*

‘you sent a [male] president and [male] judges, and now they are here and more: a [female] president and [female] judges, and these women have sat in the royal tribunals, the men being present, and they have judged against them, and sentenced them to get married for the dissolution of their persons. And I certify to you that these women are indeed in charge of justice [...]. Those who must negotiate and want the favor of the president and judges go to them [these women] first because they are denied nothing.’

(DLNE, doc. 7)

In the same document, the male author describes a Spanish woman-led monastery in the city of Texcoco (25 km northeast of present-day Mexico City) in which indigenous women, who, although they are not *bellas* ‘beautiful’ and are not nuns *por ser como son indias* ‘because they are Indians,’ preach outside their church and teach others about

Catholicism. Interestingly, this letter writer also describes how his own masculinity has been questioned due to his sympathy for the indigenous people (16).

(16) *Y asi el guardian de Tamanalco me hizo grand conçiencia dello [...]. Y porque en alguna manera yo lo reprehendi al presidente, y que no lo disimularia, hizo burla y escarnio de mj.*

‘And so the guardian of Tamanalco made me very aware of it [the mistreatment of the Indians] [...]. And because in a way I reprehended the president for it, and I wouldn’t hide this, [the president] mocked and derided me.’

(DLNE, doc. 7)

Thus, we see that even in 16th-century Mexico, there was some room for women to exert their will and for men to acknowledge such women’s value and power.

Discussion and conclusions

The quantitative analysis of transitivity presented here, based on Hopper and Thompson’s (1980) structural and semantic definition, shows that female subjects were significantly associated with imperfective contexts, nonfinite constructions, akinesis, and low affectedness of the object—all markers of low transitivity. A summary of the results can be seen in Table 17.

Table 17. Association of measures of higher transitivity by subject gender

Measure	Female	Male
Two or more participants		✓
Affected O		✓
Realis mood		✓
Kinesis		✓
Perfective aspect		(✓)
Punctuality		(✓)
Volitionality		(✓)
Individuated O	(✓)	
Affirmation		(✓)

Note: A checkmark indicates that this gender occurred at a significantly higher rate with this measure. A check mark in parentheses means that the difference was not statistically significant.

At the same time, female Os were more strongly associated with being highly affected (see Table 9), on the one hand, while being backgrounded in imperfective contexts on the other (see Table 6). These gender differences align with the findings of Torres Cacoullos (2018), who found, in a quantitative study of early Spanish, that females were less likely than males to occur as subjects, and therefore characterized the expressed female pronoun *ella* ‘she’ as designating referents that were “less topical” (102) than their male counterparts. In the current study, for the most part, especially in texts by male writers, women were represented as inactive, inert, and powerless.

The quantitative application of Hopper and Thompson's (1980) model of transitivity to corpus data has drawn attention to a somewhat novel approach to gender in sociolinguistic studies, with a focus not only on speaker gender but also on referent gender. This echoes my previous work, which showed that female and male speakers' morphosyntactic choices were influenced by both their own and their referents' gender (Aaron, 2004). The results of this study also point to the intimate link between social structures and morphosyntactic variation, in line with Arnaud (1998), who found that the 19th-century rise of the English progressive, which correlated with the psychosociological factor of interlocutor intimacy, showed gender differences. Because transitivity measures several elements of the relationship between the A and the O and of the nature of actions, its analysis can lead to more nuanced interpretations of the representation of social actors. The usefulness of such analysis seems particularly acute with data in which certain actors tend to be textually muted, such that their social situation or perspective is decentralized. Quantitative transitivity analysis offers a path toward replicable sociolinguistic studies of representation across the centuries and in many languages.

Notes

1. Document 19 was excluded because it was a version of document 18, written only days later.
2. The total word count for the male referents takes into account the 10-token cap used to extract male referents from the corpus. For each document with more than 10 male-referent tokens, the words were counted up to the end of the sentence from which the final token from that document was extracted. If a document provided fewer than 10 male-referent tokens, all words in the document were counted.
3. These figures represent grammatical subjects (A and S) only, so occurrences in which referents appeared in other grammatical roles are not included in the totals.
4. This translation was gleaned from Ivey, Thurber, and Escobedo (1990).
5. The documents used to examine the representation of men did not include any female writers or speakers.

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