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METHOD

Adjoined Conceptual Domains in the Bilingual Poetry of Pablo Picasso

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Picasso started writing poems in April, 1935 during a period of personal crisis. This shift to literature is predicated on an assumed irreducible conflict between new verbal expressions and his established visual composition. Picasso's texts provide a window into the artist's mind that is separate from his own artistic creations—which makes them extremely relevant. This paper investigates two aspects of Picasso's poetry. First, how Picasso used subtle differences between the lexical realization of concepts in French and Spanish: the two languages he used to compose his poems. And Second, how he explored the potential overlap between semantic categories for concepts associated with co-occurring words. When these linguistic phenomena are examined carefully, it becomes clear that the lexical combinations that Picasso implemented in his poems were far from arbitrary.

Keywords: Picasso; bilingual; poetry; conceptual domains; semantic categories

Picasso a commencé à écrire des poèmes en avril 1935, pendant une période de crise personnelle. Ce passage vers la littérature se fonde sur le conflit irréductible supposé entre de nouvelles expressions verbales et sa composition visuelle établie. Les textes de Picasso nous donnent un aperçu de ce qui se passe dans la tête de l'artiste qui est séparé de ses propres créations artistiques – ce qui rend ces textes extrêmement pertinents. Cet article enquête sur deux aspects de la poésie de Picasso. Premièrement, la manière dont Picasso a employé des différences subtiles entre la réalisation lexicale de concepts en français et en espagnol, les deux langues dans lesquelles il a écrit ses poèmes. Deuxièmement, la manière dont il a exploré le chevauchement potentiel entre des catégories sémantiques pour des concepts associés aux mots coexistants. Après un examen approfondi de ces phénomènes linguistiques, il s'est avéré clair que les combinaisons lexicales avec lesquelles Picasso a composé ses poèmes étaient loin d'être arbitraires.

Mots-clés: Picasso; bilingue; la poésie; domaines conceptuels; catégories sémantiques

Introduction

Even scholars quite familiar with the artist Pablo Picasso ignore that he embarked upon a successful writing career in 1935, writing poems in both Spanish and French, and that he published them in some of the most prestigious literary journals of the period.

Our study of Picasso's bilingual poetry proceeds from the argument that verbal expression and visual composition in the Spaniard are related, beginning with his cubist visual compositions which already contain verbal elements (words, titles, labels, and even fragments of newspapers), and continuing through his exploration of surrealism not only in his art but also in his poems, which employ strongly visual word arrangements, as well as graphic elements and techniques derived from the visual arts. By demonstrating how Picasso explored the relationship between verbal and visual components in two different media (visual art, poetry), this study will not only contribute to digital humanities scholarship, but also to discussions about the relation between verbal and visual media, intermediality, and ekphrasis, in studies of modernism and the avant-garde and more generally in literature, art history, and cultural studies. An additional goal of our investigation is to understand the semantics of Picasso's poetry by analyzing the semantic domains that he operated with. This second aspect of our research is related to the first as we discover that his style was inspired by collage, in both his verbal and visual compositions. One reason for the predominance of collage in Picasso's output might be linked to what Elza Adamowicz (1998) has suggested in reference to the various techniques of cutting, assembling, and pasting the parts involved in making up the kinds of collage, visual and verbal, constructed by the Surrealists. She proposes that one of the goals of collage was the undermining of "established narratives" and of organic wholes by employing "subversive processes of substitution and displacement."

With regards to the semantics of Picasso's poetry, our analysis aims to show correlations between concrete concepts as identified by certain lexical terms and different languages, which becomes particularly interesting in the case of a

bilingual poet such as Picasso. On first inspection, we had noticed that psychological concepts (such as, MADNESS) are handled preferably in French; while more physical references to his immediate surroundings (such as, SCORCH) are circumscribed to Spanish terms. However, in cases where both languages (Spanish and French) are used to communicate a similar concept, Picasso chooses Spanish when he intends to apply a more folkloric tone (such as, MAGGOT). To carry out a more detailed analysis, we developed computational tools to examine how Picasso used subtle oppositions between words within specific concepts in both languages to build his poems. Using the extracted list of concepts, we were able to highlight and identify the interconnections between his poems in different languages. Another aspect of his poetry that we analyzed is whether those words Picasso placed together belonged to a restricted conceptual set, so that their interconnection, while not obvious to the viewer/reader, must have been somewhat determined in Picasso's "view" of reality. It is that determined interconnection which Picasso saw that we propose to explore with this study. In other words, we want to get closer to Picasso's "vision" of the world through his poems (understanding vision as something produced by the text, rather than a psychological state) in order to investigate how that "vision" may differ from what he depicted in his graphic works.

Illustrative examples

For purposes of illustration, we will use two poems from 1935, one in Spanish and one in French with brackets identifying inserted elements marked as such by Picasso.

7 decembre XXXV (**Figure 1**)

poca vergüenza tiene el [cristal]
el que hacen correr la voz mentirosa [de la liebre]
si su capa no flota atada al palo roto
de [su] barca – que [ni el] carajo [de su cresta] podrá
ya [nunca] más reírse [de la cuerda que cuelga] del farol
– si no fuera –
– el azar el que manda –
y la forma arbitraria de la

sombra afilada [por] la seda
 [de su] beso el estribo – y aún [así] y todo [y a pesar]
 [de que ahora] encerrado [ya está] entre los cuatro
 muros del grano de la uva –
 – sus ganas de
 cantarse al compás de
 la gota de luz de la cazuela
 [que se está todo el día] de rodillas y delante del
 trapo [tan] sucio que gotea –
 el amor sentado en un rincón
 de la cocina se entretiene cortándose
 las uñas
 (Bernadac and Piot 1989, 54–57)

14 Décembre XXXV (**Figure 2**)
 sur le dos de l' immense tranche
 de melon ardent –
 arbre morceau de fleuve –
 table à rire –
 sous la menace de l' aile qui
 serre pour le plaisir de voir
 expirer entre ses dents –
 distraite de son ennui –
 un [brin] d' herbe –
 les deux petits boutons de prunus
 tombés si bas –
 s' embrassent depuis deux ou trois jours
 énervés par les pleurs –
 de la petite fille –
 (Bernadac and Piot 1989, 65)

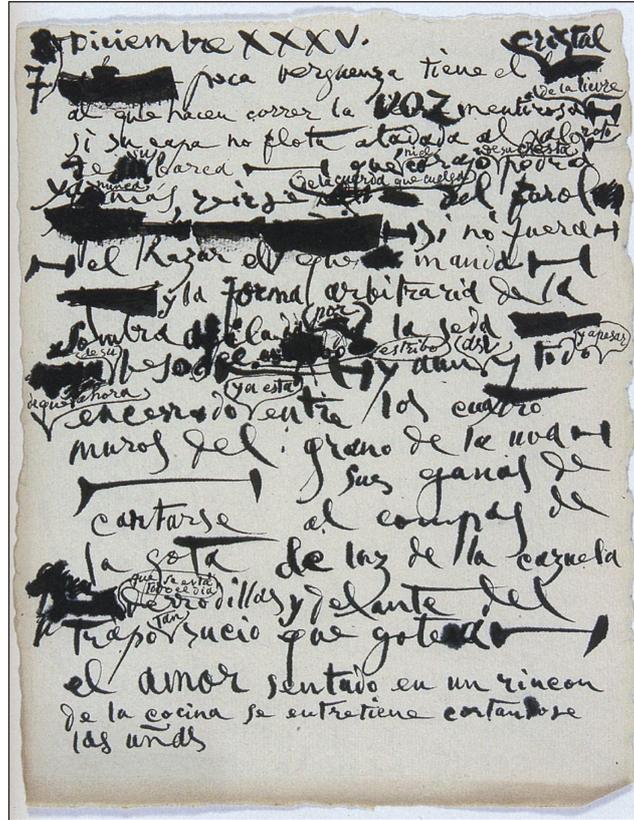


Figure 1: Poca vergüenza (1), December 7, 1935. Musée Picasso, Paris. OPP.35: 068.

Poetry and collage

As mentioned earlier, Picasso's approach to poetry is directly linked to his innovations in the plastic arts. During synthetic cubism, Picasso started incorporating verbal language into his pictorial compositions. In these cases, the verbal elements were intended to play a visual role; but simultaneously they introduced a verbal dimension into a previously purely pictorial domain. As Kozloff (1973) has declared, with the arrival of *collage*, the main focus changed to the combinatorial process, transforming picture making into an analogical construction. Pictorial language, like poetic language, became multileveled, refusing to accept an absolute interpretation of reality.

Krauss (1999) has identified this as the birth of the nonreferential plastic sign. The advent of collage introduced a free visual signifier within pictorial space,

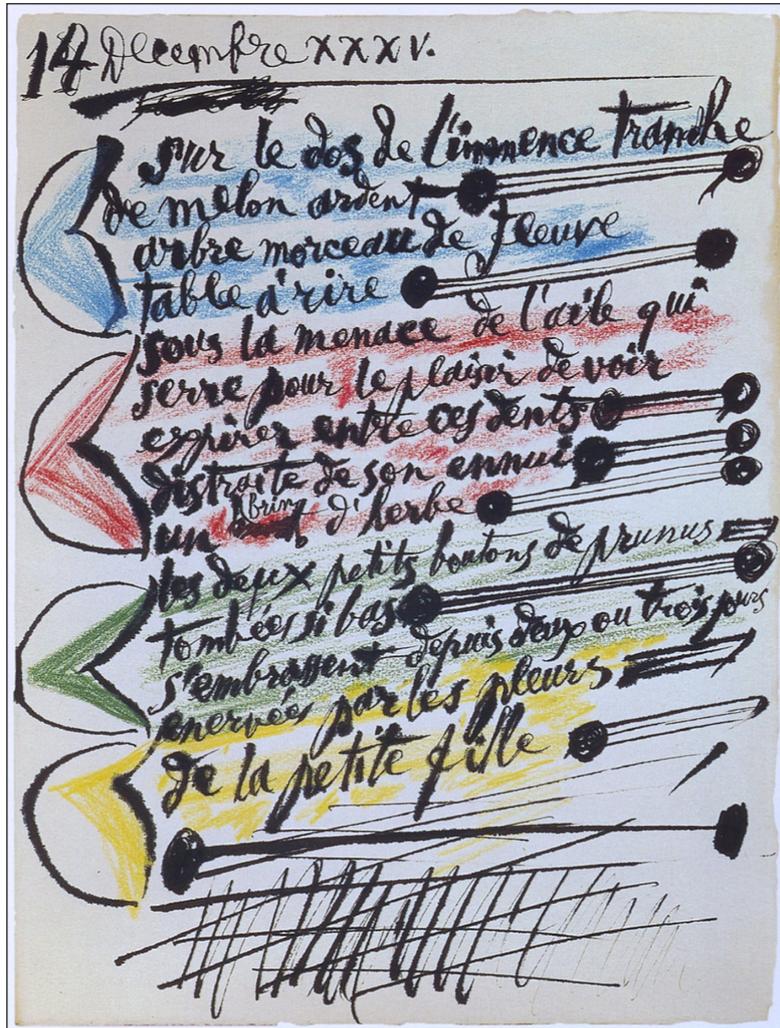


Figure 2: Sur le dos (1), December 14, 1935. Musée Picasso, Paris. OPP.35: 076.

independent of any fixed referent. As the reference of pictorial constituents is no longer understood in positive terms, being instead interpreted as relative within the system, their meaning becomes purely a function of that system. By bringing real objects into the picture, Picasso additionally managed to circumvent representation. As a result, different realities coexisted at multiple levels, fusing into a whole.

In the late 1920s, with the arrival of surrealism, Picasso's pasted elements which had by now almost fully integrated into the cubist composition, combining his prior

acknowledgment of their arbitrariness with a new recognition of their capacity for establishing a magical presence in his art. He suddenly started integrating in his paintings objects that were close to himself, such as a torn piece from his own shirt, a cloth that had been used as a household utensil, decorative feathers from his wife's hat, etc.

In his poetry, Picasso reverses the order he had established in cubism. If words had been integrated in paintings to highlight the linguistic value of pictorial expression, now words gain in physical presence and exert their magical power over the reader, much like real objects had incorporated into the surrealist compositions. Words and phrases are distributed on the page as if they were pictorial signs, entering into relations with other visual elements such as dashes, blotches, brackets, etc. Phrases link to each other in fluctuant, reversible attachments, intentionally left tentative and ambiguous, open to potential deletions and insertions as the poems undergo revisions, just as pieces of paper had been precariously pinned to the support in the cubist *collage* and were left opened to the possibility of being removed. Furthermore, as was the case with *papier collés*, lexical items do not lose their physical presence as they enter the realm of signification; they are equally valid as material elements, providing tonality and rhythm to the lines of the poem, as the color and texture of the pasted papers did in the cubist composition. To Louis Parrot he had declared: "Poems? ... When I began to write them I wanted to prepare myself a palette of words, as if I were dealing with colors. All these words were weighed, filtered and appraised" Rothenberg and Joris (2004: xv). Very few of his poems remain in their pristine state. As in his plastic works, Picasso was constantly searching, attempting to uncover through the medium of language that which could not otherwise be revealed.

Preliminary analysis

One of the first things one notices as one skims over the lines of the poem is the persistence of connectors such as "que" and "de" which lose the subordinating effect they have in conventional grammatical constructions to be transformed by Picasso into adjunctive elements, allowing readers to connect one object to the next, in multiple ramifications.

The inserted constituents (identified in italics below) equally correspond for the most part to adjuncts. Furthermore, the phrases between dashes fall within the same category of adjunctive elements. In all these cases, the constituents contribute to the overall interpretation of the poem, but they do so in a non-hierarchical manner. Having superseded the domain of the nucleus by their reiterative adjunctive nature, they are free to alter the meaning of any element in the sentence by linking tentatively and simultaneously to any nucleus, complement or adjunct in the sentence.

[_{IP} poca vergüenza tiene el [_{NP} *crystal*₂] [_{NP2} el que hacen correr la voz mentirosa₃ [_{PP3} *de la liebre*]]] – [_{CP} si su₂ capa no flota atada al palo roto de [_{AP} su₂] barca₄] – [_{CP4} que [_{DP} *ni el*] carajo [_{PP} *de su cresta*] podrá ya [_{AP} *nunca*] más reírse [_{PP} *de la cuerda que cuelga*] del farol] – [_{CP} si no fuera el azar₁ el que manda₁] – y [_{CP} la forma arbitraria de la sombra afilada] [_{PP} *por*] [_{NP} la seda] [_{PP} *de su*] [_{NP} beso] [_{NP} el estribo] V₁ – y [_{AP} aun [_{AP} *así*] y todo [_Y] [_{PP} *a pesar de que*] [_{AP} *ahora*] encerrado₂ [_{AP} *ya*] [_{VP} *está*]₂] entre los cuatro muros del grano de la uva] – [_{NP} sus₂ ganas de cantarse al compás de la gota de luz de la cazuela] – [_{PP} [*que se está*]₂ *todo el día*] de rodillas y delante del trapo [_{AP} *tan*] sucio que gotea] – [_{NP} el amor sentado en un rincón de la cocina se entretiene cortándose las uñas]

[_{PP4} sur le dos de l'immense tranche de melon₁ ardent] – [_{NP1} arbre] [_{NP1} morceau de fleuve] – [_{NP1} table à rire] – [_{PP1} sous la menace de l'aile₂ qui serre pour le plaisir de voir expirer entre ses dents] – [_{AP2} distraite de son ennui] – [_{NP3} un [_N *brin*] d'herbe] – [_{NP} les deux petits boutons de prunus₄ tombés si bas] – [_{VP4} s'embrassent depuis deux ou trois jours énervés₄ par les pleurs₅] – [_{PP5} de la petite fille]. (Bernadac and Piot 1989, 54–57)

In current syntactic theory, adjuncts are modifiers which freely attach at a higher level in the sentence and provide circumstantial information pertaining to the nucleus of the phrase and its relation to both complement and specifier. In contrast to complements and specifiers, adjuncts are constituents which may be found in iteration, and their relation to the nucleus of the phrase is usually ambiguous. In Picasso's case, we see that the different adjunct phrases interact

with other constituents in the poem in strings of metaphoric confrontations shown by coindexation.

[CP Spec [C' C [IP Spec [I' I [VP [VP Spec [V' V complement]] adjunct]]]]]
[DP Spec [D' D [NP [NP Spec [N' N complement]] adjunct]]]

The adjuncts are also purposely left differentiated by Picasso (often placed at a different level, or in the margins, etc.), as if they were footnoted “afterthoughts” to the already validated text. In fact, it is sometimes quite a task for the editor of these poems to decide exactly where the added text must be incorporated, as the writer intentionally leaves this detail ambiguous. The reader is free to choose whether to follow the suggested insertions or to continue with the original text, ignoring the later additions. One interesting thing about this poem is how Picasso has inserted dashes in multiple places to indicate some sort of segmentation of the text. When one analyzes the position of the bracketed syntactic constituents in the poem, one notices that they also, for the most part, correspond to adjunct phrases.

The adjunct phrases build metaphoric concatenations, being interlinked through chains of coindexations with restricted semantic domains (shown above by coindexation). Thus, in the second poem we find: (1) nature setting: *tranche de melon – arbre – fleuve – table – brin d’herbe – deux petits boutons*; (2) positive emotion: *ardent – rire – tombés – s’embrassent*; (3) negative emotion: *menace – aile – serre – plaisir de voir expirer – dents – ennui – énervés – pleurs de la petite fille*.

In spite of the adjunctive nature of Picasso’s poetry, it becomes clear that the words he employed were still intended to interact with each other in clearly delineated semantic domains. Readers are expected to rediscover these preexisting interconnections of cooccurring words distributed on the page in non-verbal organization. Given these semantic interconnections, it is important to classify the concepts behind the words Picasso used and determine how these concepts may then group around specific semantic categories.

In this respect, there are similarities between Picasso’s poetics and the writings of Gertrude Stein. Randa Dubnick discusses a progression from “syntax” to “lexicon”

in Stein's literary career, which she divides into two kinds of linguistically consistent obscure styles. Stein herself called them "prose" and "poetry", respectively. When Stein stated that the central unit in her "prose" is the sentence, and that functional verbs, prepositions, and conjunctions (which hold the functional structure of the sentence together) are important in this style, she was referring to Jakobson's (1956) horizontal axis of language (or syntagm), where the units are related *in praesentia* vs. the vertical axis (or paradigm) which creates word associations that are founded on a commonality in conjunction with or in contrast with each other, and deals with word selection (cf. Dubnick 1984: 6). Aside from the syntagmatic plane, the elements which have a similarity are mentally conjoined and thus create associations within which one can see many relationships. The terms are thus united "in absentia".

In her early work, Stein underlines the metonymic aspect of the sentence (the value of functional syntax), while simultaneously minimizing the lexical vocabulary, not merely in quantity, but also in its degree of specificity. As it is primarily based in syntax, it stresses the use of verbs, adverbs, and conjunctions, while at the same time it reduces the vocabulary, discarding referential nouns in favor of pronouns and gerunds. The resulting style depends almost entirely on functional syntax, using mainly connective words, such as functional prepositions and conjunctions. This produces sentences containing words that rely on other words for their significance, thus reducing how it is affected when the operation of "selection" is hindered. Central words may then be deleted or replaced by abstract anaphoric substitutes, while concrete and specific nouns and verbs can then be substituted for more generic terms. Functional categories, like pronouns and pronominal adverbs, or words serving merely to establish the context—such as connectives and auxiliaries—tend to survive.

From "prose", with an enhanced syntax and a constrained lexicon, Stein progressed towards "poetry" with an emphasis on lexical vocabulary and a reduced functional syntax, shifting focus—in Jakobsonian terms—from the linguistic operation of "combination" (horizontal axis) to that of "selection" (vertical axis) where the lexicon dominates (see Dubnick 1984: 28). If in her early portraits, Stein had freed herself of narrative and presented perceptions one moment at a time, these perceptions had been edited, selected, and generalized so that the person could be "analyzed"

in his/her essential reality. The physical world is experienced as immediate in each present moment. What we find in her later style, by contrast, is a concentration upon “objects that existed in her mind”. She perceived that the object was immersed in a continuum of sound, color and association, which she intended to reconstitute in writing. Consequently, a book like *Tender Buttons* has a less abstract vocabulary in that it contains many more concrete nouns, sensual adjectives, and action verbs than does her earlier style. Dubnick notes that Stein’s writing gradually shifted from orderly analysis of reality to the immediate perception of the world, dealing increasingly with the lexicon itself; with mental images associated with words (signifieds), and with the qualities of words as things in themselves (signifiers) (see Dubnick 1984: 32).

The new freedom in using words were manifested in a richer, more sensual vocabulary, which contrasts with the spare vocabulary of her earlier work. The evocative power of the word called for a more “decorative” approach. Freed from concerns with generalizing and classifying, Stein began using concrete nouns, sensual adjectives, and specific verbs. This more obscure style (as Picasso’s synthetic cubism) concentrates on the signifying element as a thing in itself and on the art object in its own right as an opaque surface—of paint and pasted paper or of words. Special attention is paid to the signifying element (the word) for its own sake.

In Stein’s association of mental constructs (signifieds), she uses relations based on both contiguity—defined by James (1950) as association of objects habitually found together in time and space, and identified by Jakobson (1956) as metonymy—and on similarity—which he identifies as metaphor. The operation of association is stressed not only in images and concepts (semantics), but also in the qualities of the words as words (phonology). By forcing the reader to pay attention to the word, Stein revitalizes the lexicon. The poet doesn’t ignore the meanings of words, as so many critics alleged; but by presenting each word in an unusual context, she directs attention not only toward its phonology but also toward its semantics, and the interaction between both levels. This then forces the reader to grapple with each word one at a time. H/she must confront the lexicon and its connection with the rest of the grammar with a sense of bewilderment, wonder, and discovery. Thus, one could conclude that this poetry’s final goal is to rejuvenate language at its core.

Stein and Picasso's concentration on the nature of vocabulary as an essential component of the grammar matches the linguist Ray Jackendoff's (2002) interest in psychological and neurological questions about the lexicon, about what linguistic items are stored or memorized as units, and about what relationships can exist between one stored item and another, or between them and linguistic expressions that are constructed "on the fly" from their constituent words in working memory. Jackendoff's *Representational Modularity* promotes the lexicon from the periphery of linguistic theory to its very center. It appears that both Stein's second abstract style and Picasso's synthetic cubism exploited a similar type of intuition for aesthetic purposes.

Background and former analysis

For some time now, we have taken different approaches to analyze Picasso's artworks (Meneses, Furuta, and Mallen 2008), his poetry (Meneses et al. 2008) and its semantic content (Meneses and Mallen 2017) within the context of the Online Picasso Project (Mallen 2019). For the semantic content of the words in the poem, we analyzed the semantic concepts behind each word irrespective of the language used, linking concepts with English translations of relevant concepts. Given the acknowledged semantic interconnections between words Picasso explored in his poetry, we classified the uncovered concepts in order to determine how they could be grouped around specific semantic categories using Wordnet as reference (Miller 1993). Additionally, we created Web-based interfaces to view these semantic relationships, which in turn were also linked to a bilingual concordance of terms.

The next thing we did is group the concepts we had identified into semantic categories. A semantic category (Taylor 2003) is a linguistic term that recognizes that languages tend to divide up the spectrum of concepts differently. Using the bilingual lexicon derived from Picasso's poetry (Audenaert et al. 2007), we devised a mechanism to extricate the set of semantic domains in his literary creation using the English translations for the Spanish and French terms as our basis (**Figure 3**).

Next, we tried to establish whether there was a predominance of certain semantic categories in one of the two languages Picasso used. We discovered that this was indeed the case. For instance, Picasso is more inclined to refer to food items

Words	Categories	Count
A	VERB.POSSESSION VERB.PERCEPTION VERB.CONSUMPTION VERB.CREATION VERB.BODY	33
A.B.C.		1
ABANDONNE	NOUN.ATTRIBUTE VERB.POSSESSION VERB.COGNITION	2
ABANDONNENT	NOUN.ATTRIBUTE VERB.POSSESSION VERB.COGNITION	3
ABANDONNÉ	NOUN.ATTRIBUTE VERB.POSSESSION VERB.COGNITION	3
ABANDONNÉE	NOUN.ATTRIBUTE VERB.POSSESSION VERB.COGNITION	4
ABANDONNÉES	NOUN.ATTRIBUTE VERB.POSSESSION VERB.COGNITION	1

Figure 3: Screenshot of the user interface displaying words and their corresponding categories in French.

and everyday objects in his Spanish poems. On the other hand, given the influence French Surrealist writers exerted on him, his French poems concentrate on more abstract concepts involving politics, religion and sexuality.

As a follow-up to our previous research, this paper investigates (1) how Picasso used subtle differences between the lexical realization of concepts in two languages as he composed his poems in French and Spanish; and (2) how he explored the potential overlap between semantic categories for concepts associated with co-occurring words. When these linguistic phenomena are examined carefully, it becomes clear that the lexical combinations that Picasso implemented in his poems were far from arbitrary. As preliminary examples of (1) and (2), we note that for the concept KILL, Picasso used four words (and their morphological derivatives) in French, but only one word in Spanish; and that for co-occurring concepts FAN and WING there is an intentional overlap under the semantic category NOUN.ARTIFACT. In the following section, we will describe our methods and expand on our analysis of these linguistic phenomena with further details.

Analysis of concepts and semantic domains

The repository of 604 poems and 3 plays and the semantic categories for the 6,600 Spanish words and 8,100 French words in the Online Picasso Project are stored in a MySQL database (“MySQL” 2018). This database has tables and relations that divide the writings into poems, pages, and lines. The poems are reconstructed using standard join operations—allowing the terms and lines to be retrieved along with additional metadata such as title, section, and line number.

We exported the tables of the MySQL database into a SQLite database (“SQLite Home Page” 2018). We did this to be able to manipulate and access the individual records locally. Then we used Python (van Rossum 1995) to perform a series of transformations to the records and. We then used the lxml library (“Lxml – Processing XML and HTML with Python” 2018) to output the transformed poems into XML files—which freed us from the constraints of using a relational database. We then used BeautifulSoup (Richardson 2015) to parse the resulting XML files and Plotly (“Modern Visualization for the Data Era” 2018) to create graphs and visualizations from them.

With the tools we have developed, we examined how Picasso used subtle oppositions between words within specific concepts in French and Spanish to build his poems. We analyze these contrasts further in order to determine how concepts are either demarcated or left open in his poems. The first question we asked deals with how Picasso used concepts depending on the language of the poem. We determined that concepts like BEAT, BREAK and CATCH, among others, tend to be expressed in Spanish; while concepts like BURN, CARRY or RAISE, among others, are verbalized in French. **Figure 4** shows concepts grouped by language with a threshold of 15 combined occurrences.

Second, we examined how different lexical categories are used depending on the language of the poem—which is shown in **Figure 5**. We noted that concepts like BREAK or CARRY are conveyed as verbs; as do BITE or JUMP, although less so. A concept like END is articulated merely as a noun.

Next, and because of their prevalence in the concepts, we examined the verb morphologies by language. We observed that there is a large number of past

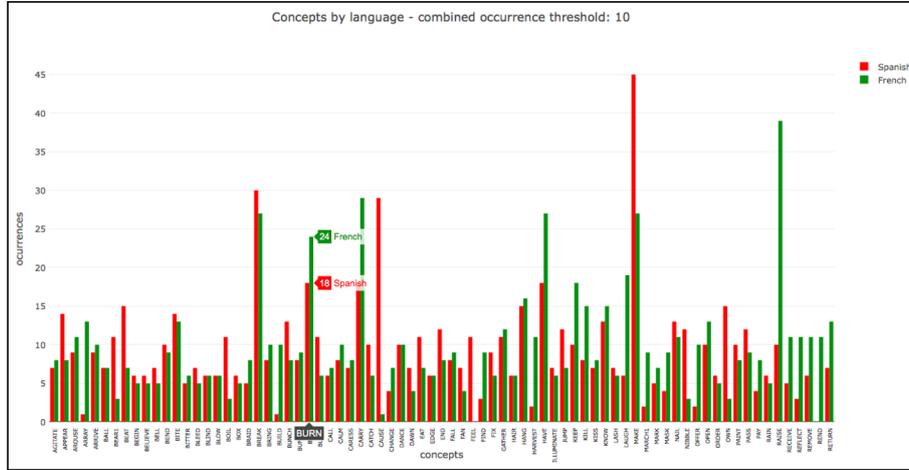


Figure 4: Concepts in Picasso's poetry grouped by language with a threshold of 15 combined occurrences.

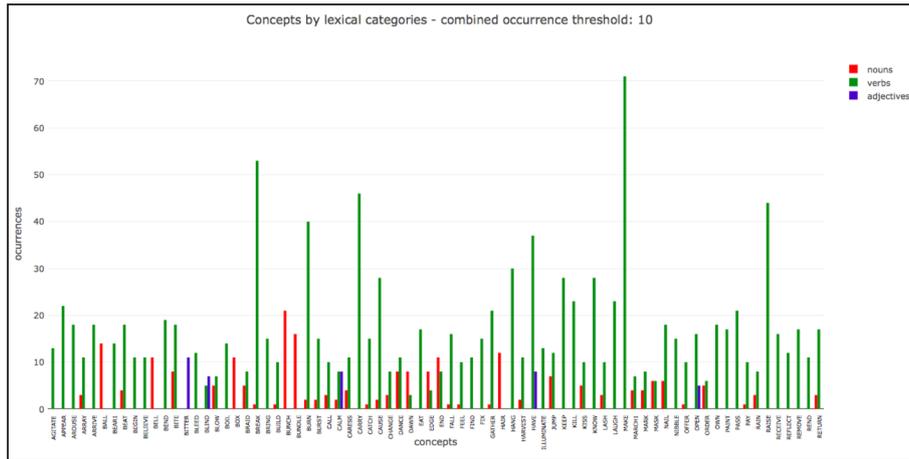


Figure 5: Concepts and lexical categories in Picasso's poetry. The categories shown have a combined threshold of 15 or more occurrences.

participles (347 French, 163 Spanish), as well as present participles, although in this case it is mostly in French with 120 instances. Other predominant morphologies are present tense of transitive verbs in the third person (144 French, 127 Spanish), present tense of intransitive verbs in the third person (36 French, 33 Spanish) and infinitives of transitive verbs (75 French, 54 Spanish). Transitive verbs are more dominant than intransitive verbs over all; and present tense is more dominant than past tense. **Figure 6** shows a comparison of verb morphologies by language.

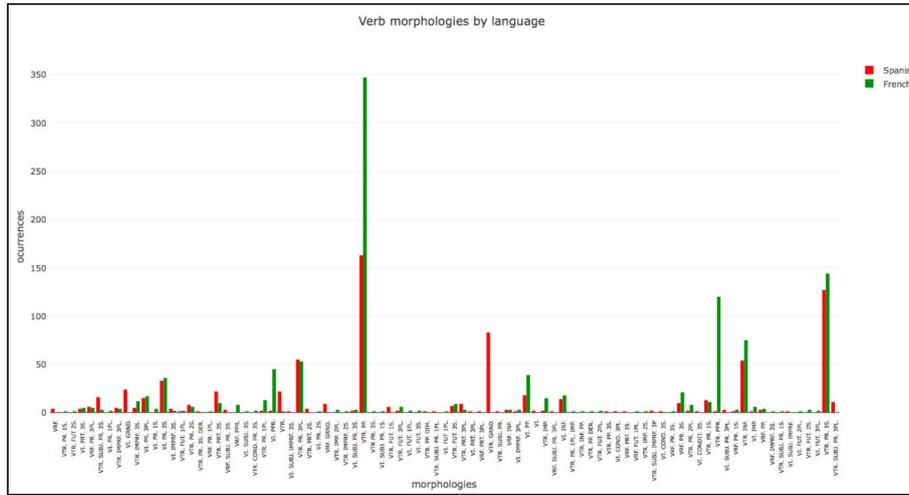


Figure 6: Verb morphologies by language in Picasso’s poetry.

Finally, we analyzed how the semantic categories are used depending on the language of the poem. The question we raised is whether there is a preference for certain semantic categories in Spanish over French. We linked each concept with its different semantic categories. Based on what languages are associated with specific concepts, we then determined if a correlation existed with certain semantic categories as well. We discovered that Spanish is predominant in the semantic category NOUN.EVENT. French, on the other hand, dominates throughout, but significantly in the semantic categories VERB.CHANGE, VERB.MOTION, VERB.STATIVE, VERB.SOCIAL, VERB.COMPETITION, VERB.POSSSESSION, VERB.COMMUNICATION, VERB.COGNITION. **Figure 7** shows a comparison of the semantic categories by language in Picasso’s poetry.

By isolating the semantic categories Picasso worked with we may start to get a clearer picture of how words in his poems relate to each other. Of course, these results are only preliminary since we have not yet classified all the concepts into distinct semantic categories and even those we have completed will have to be further refined.

And yet we already see that some of the existing semantic categories are linked to a higher number of concepts than others. For example, we find a high number of nominal artifacts in his poems. Some are related to art, such as engraving, fashion, festoon, illumination, image, impression, imprint, ornament, paint, paintbrush, painter, painting, palette; others related to war, such as armor, axe, blade, bomb,

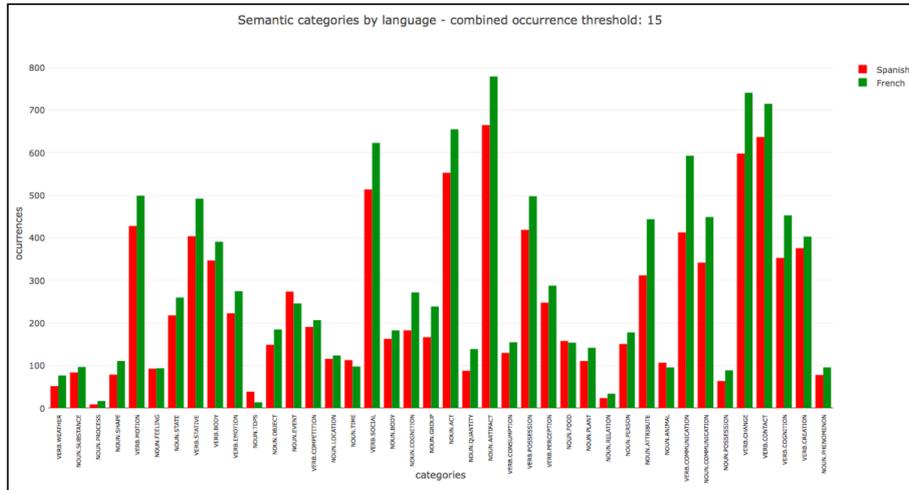


Figure 7: Semantic categories by language in Picasso’s poetry. The categories shown have a combined threshold of 15 or more occurrences.

bow, bugle, bullet, camouflage, fighter, gallows, gauntlet, knife, knight, rampart, rapier. These may appear antagonistic, but in Picasso’s world there is a close relation between destruction in war and creation in art. Not surprisingly for a painter and writer, nominal communication is another frequent semantic category, with such concepts as advance, advice, agreement, alert, allusion, alphabet, ambiguity, announcement, answer, argument, art, articulation, canticle, fable, language, news, nonsense, note, noun, outcry, parable.

With the tools we have developed, we may examine how he used subtle oppositions between words within specific concepts in French and Spanish to build his poems. An example of his choice of words may be found in the concept KILL. Picasso used four words (and their morphological derivatives) in French for this concept: “abattent” (KNOCK), “égorge”, “égorgeant”, “éborgée”, “éborgées” (SLIT); “éteignant”, “éteindre”, “éteint”, “éteinte”, “éteints” (EXTINGUISH); and “tue”, “tuer”, “tuera”, “tuez-le” (SLAY). These words impose a clear lexical demarcation within that concept. For Spanish, however, Picasso chose one single word (and its morphological derivatives) for that same concept: “matar”, “mataran”, “mate”, “maten”, “mato”. That is, he left the concept more ambiguous.

An opposite situation occurs with the concept ANGUISH, where three words (and their morphological derivatives) are used in Spanish: “angustia”, “angustias”

("passive"); and "congoja", "congojas"; or "acongoja" ("active"). Here Picasso chose words that further specified the patient's role in the feeling, clearly demarcating the concept in its lexical implementation. In French, however, he used only one word: "angoisse(s)".

We analyzed these contrasts further in order to determine how concepts are either demarcated or left open in his poems. Where word-concept relations overlap in Spanish and French, common conceptual domains are established between the two languages. Where word-concept relations differ substantially, we would have differing conceptual domains in the two. This new approach may be able to answer the question of why Picasso chose to write in a specific language about some specific content. **Figure 4** shows a screenshot of the user interface displaying the relationship between the NOUN.PERSON semantic category, the ACTOR concept and their related words in Picasso's poetry.

The above generalizations are based on a sample of the data so far explored. We see further confirmation of some of these semantic tendencies in the two illustrative poems we have included. In the first poem, Picasso chooses "vergüenza" for SHAME (another possible lexical realization of this concept would have been "lástima", which he uses elsewhere. He also chooses "cristal" for GLASS, which has as alternative realization "vidrio". The specific choice could be triggered by the semantic category NOUN.FEELING which both "vergüenza" and "cristal" share, but that "vidrio" lacks. In addition, both "vergüenza" and "cristal" have negative connotations of a painful emotion that responds to a sense of failure which needs to be covered up. These insinuations are missing from "lástima" and "vidrio". The sense of cover up is extended with subsequent expressions in the line: "correr la voz" (GOSSIP) and "mentirosa" (LIAR). These two concepts in turn share the semantic category NOUN.COMMUNICATION with equally negative connotations. Many more such correlations can be identified in the poem between major cooccurring lexical categories, highlighted in bold.

[_{IP} poca **vergüenza** tiene el [_{NP} **cristal**]₂] [_{NP2} el que hacen **correr la voz**
mentirosa [_{PP} *de la liebre*]]] – [_{CP} si su **capa** no **flota atada al palo roto** de

[_{AP} *su* **barca**] – [_{CP} que [_{DP} *ni el*] **carajo** [_{PP} *de su* **cresta**] podrá ya [_{AP} *nunca*]
más **reírse** [_{PP} *de la* **cuernada que cuelga**] **del farol**] – [_{CP} si no fuera el **azar**
el que **manda**₁] – y [_{CP} la **forma arbitraria** de la **sombra afilada**] [_{PP} *por*]
[_{NP} la **sedra**] [_{PP} *de su*] [_{NP} **beso**] [_{NP} el **estribo**] V₁ – y [_{AP} aun [_{AP} *así*] y todo
[*y*] [_{PP} *a pesar de que*] [_{AP} *ahora*] **encerrado**₂ [_{AP} *ya*] [_{VP} *está*] entre los cuatro
muros del grano de la uva] – [_{NP} *sus* **ganans de cantarse al compás** de
la **gota de luz de la cazuela**] – [_{PP} [*que se está*₂ *todo el día*] de **rodillas** y
delante del **trapo** [_{AP} *tan*] **sucio** que **gotea**] – [_{NP} el **amor sentado** en un
rincón de la cocina se entretiene cortándose las uñas]. (Bernadac and
Piot 1989, 54–57)

In the second poem we observe similar correlations. The words “melon” (MELON) and “arbre” (TREE) share the same semantic category NOUN.PLANT. While “melon” and “fleuve” do not appear to link to similar semantic categories, their relation to “tranche” and “morceau” associates both lexical entries as the latter two partitives have quite a few of semantic categories in common: NOUN.POSSSESSION, NOUN.OBJECT, NOUN.ARTIFACT, NOUN.FOOD, VERB.CONTACT. Of special relevance are the last two, as they allow “fleuve” (RIVER) to enter in a relation not only with “melon” (as food), but also with “sur le dos” through a “contact” connotation. The semantic category NOUN.FOOD also shared with the following “table” (TABLE) allows the latter to link to both “fleuve” and “melon”. The odd combination “table à rire” containing “rire” (LAUGH) comes from the expression “assise à table à rire” which is associated with the semantic category NOUN.COMMUNICATION and hence overlaps with the word “menace” (THREAT) immediately after which falls under the same semantic category.

[_{PP4} sur le **dos de l’immense tranche de melon**₁ **ardent**] – [_{NP1} **arbre**] [_{NP1}
morceau de fleuve] – [_{NP1} **table à rire**] – [_{PP1} sous la **menace** de l’**aile**₂ qui
serre pour le plaisir de voir expirer entre ses **dents**] – [_{AP2} **distracte** de son
ennui] – [_{NP3} un [_N **brin**] d’**herbe**] – [_{NP} les deux **petits boutons de prunus**₄
tombés si bas] – [_{VP4} *s’embrassent* depuis deux ou trois **jours énnervés**₄ par
les **pleurs**₅] – [_{PP5} de la **petite fille**]. (Bernadac and Piot 1989, 65)

As in the Spanish poem, many more such semantic correlations can be identified in the poem between major cooccurring lexical categories, highlighted in bold.

Conclusions

Among the generalizations that we can make from this data is that Picasso prefers verbs that may be accompanied by complements. This confirms our thesis that one of the essential features of Picasso's poetry is the interdependence of concepts, where meaning is not defined separately, but in the combinatory interplay between multiple words. The complements serve to expand and, at time, alter the expected content of the individual lexical items. We also notice that the action expressed in his poems tends to be in the present tense. This is again a confirmation of Picasso's poetic style, where the involved action of the reader of the poem in the present is crucial in determining the meaning of the lines.

Concerning the preference of certain concepts in one language or another, we have already identified some patterns; however, more data would need to be analyzed before coming to solid conclusions. The same applies to the correlation between certain semantic categories and the specific concepts associated with a certain language. When it comes to conceptualizing nominal events, Spanish is the predominant language. Conversely, for verbal concepts involving change or motion, as well as social relations, French was the dominant language. This is particularly noticeable when verbal concepts pertaining to communication are involved. Future research will serve to further confirm these preliminary observations.

Our final goal is to group the uncovered semantic categories into adjoined conceptual domains: macro categories that would get us closer to main semantic domains that Picasso operated with. Again, we know that Picasso's style, both in his visual and his verbal compositions, was very much inspired by collage. An interesting feature is that those elements he placed together belonged to a restricted set, so that their interconnection, while not obvious to the viewer/reader, must have been somewhat determined in Picasso's "view" of reality. It is that determined interconnection that Picasso saw that we want to explore with our study of the semantic categories in Picasso's poetry. In other words, the purpose of our work is to

get closer to Picasso's "vision" of the world through his poems in order to investigate how that "vision" may differ from what he depicted in his graphic works.

Competing interest

The authors have no competing interests to declare.

Author contributions

Enrique Mallen: wrote the paper, proposed the analysis, collected and contributed data.

Luis Meneses: wrote the paper, designed and performed the analysis.

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