Typographetics of Urban Spaces

The Indication of Discourse Types and Genres Through Letterforms and Their Materiality in Multilingual Urban Spaces

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Abstract. The present study is a contribution to research on typographetic meaning-making and the social dimensions of typographic acts in multilingual and multiscriptural urban spaces. Writing in cityscapes materialises various types of texts and forms of discourse. The central assumption is that the form and materiality of these written texts contribute to their communicative significance.

This paper is concerned with the way in which typographic resources are used to indicate discourses, index genres and become socially relevant. The research is linked to the joint project *Signs of the Metropolis* at the University of Duisburg-Essen and the Ruhr University Bochum in Germany and is based on a database of 25,523 tagged and geo-referenced images.

A multi-method approach has been applied between typography and sociolinguistics that introduces an analytical framework of parameters for studying the graphetics of lettering in urban space. The results from the application of the framework are presented in a foundational analysis of different discourse types (regulatory, infrastructural, commercial, transgressive, and commemorative), including a comparison of different city districts in the Ruhr Metropolis. Furthermore, it provides an analysis on decorative typefaces in Turkish language texts in shop signs in Duisburg-Marxloh; and presents results from a case study on genres, analysing the (typo)graphetic characteristics of signs in different shop types.

1. Typography in Urban Space

Urban spaces are covered with (mostly short) texts. They mark places, are deictic, and give orientation to people moving through those spaces. Written marks indicate ownership, issue prohibitions, and regulate the behaviour of individuals. Inscriptions in public spaces advertise and seduce; they compete for the attention of passers-by. Likewise, they are means of remembrance, tools of resistance, symbolic representatives of

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power spheres (Coulmas, 2009), and agents in the struggle for visibility and recognition (Blommaert, 2013).

The materiality, form, and positioning of letters in urban spaces are produced by a variety of authors with different goals. Government agencies, global corporations, local shop owners, graffiti sprayers—they all select from a range of graphic resources to communicate their messages. They design letterforms or choose from a myriad of fonts, select materials, and sign types, decide on colour, size, mounting height, and illumination, the integration of the letters into the architectural context, and create dense visual surfaces. These choices can be individual or, as in the case of traffic signs, subject to national standardisation (Figure 1).

Language is the means by which people present themselves and relate to each other (Spitzmüller, 2013). This also applies to materialised, typographically designed language in urban spaces—no matter whether created by professionals or laypeople. Not only the content of the texts but also their form allows sign producers to express how they see themselves, how they want to be perceived, and whom they address. Written inscriptions in built environments are indicators of identity that show social positioning, differentiation, or affiliation to something.

By choosing connotatively strongly charged typographic forms, values, and attitudes can be communicated (Järlehed, 2015, Spitzmüller, 2015). Likewise, the choices of specific graphetic resources indicate communicative actors, reception contexts, and thematic localisations (Wehde, 2000, Spitzmüller, 2013). Thus, the choices of languages and the (non-)visibility of writing systems can be regarded as acts of assimilation or exclusion or of localisation and inclusion (Backhaus, 2007).

2. Typo/graph[et]ics: A Definition of Terms

The terminology relating to the research of the form and materiality of writing and its communicative meaning overlap and vary between disciplines, perspectives, and points in time. This section identifies the central reference points for the observations made in this paper and indicates how the terms "typographic" and "graphic" as well as "typographetic" and "graphetic" are used in this text.

Spitzmüller coins the term "graphic variation" and uses it instead of "typography" in his research on the relationship between the printed word and social practices because the term "typography" is not used consistently and is not "actually linguistic terminology" (Spitzmüller, 2013, p. 9, our translation). Järlehed and Jaworski, as two of the first embarking on the research of the communicative meaning potential of letters in urban space, use the term "typographic landscaping" and by that emphasise the "processual, experiential, and embodied practices involved in typographic meaning-making" (Järlehed, 2015, p. 119). Pesca-

FIGURE 1. Photographs of a variety of signs in public space in the Ruhr Metropolis in Germany. All images in this paper are from the Ruhr Metropolis survey areas. Almost all of them derive from the *Signs of the Metropolis* data base (image collection 2013/14) unless indicated otherwise.

tore Frisk and Pauwels, 2019 follow Järlehed's and Jaworski's terminology in 2019 when they write about "typographic landscapes as an ecosocial semiotic system" (ibid., p. 1). This phrasing positions the typographic landscapes in close proximity to the extensive field of research on "linguistic landscapes" (Landry and Bourhis, 1997, Gorter, 2006, Backhaus, 2007, Shohamy and Gorter, 2009, Coulmas, 2009, Blommaert, 2013).

Meletis in his text *Graphetik* (2015) demands that "[r]esearch that deals with the form and materiality of writing [*Schrift*] should—regardless of its disciplinary origin—be labelled (at least additionally) as graphetical research in order to bring together findings and enable comprehensive theory-building or—in other words—the establishment of graphetics." (Meletis, 2015, p. 183, our translation) The present paper follows this request.

Haralambous defines "typographetics" as "[t]he study of the printed representation of language." (Haralambous, 2020, p. 15) as one subject matter in a list of 18 topics that are relevant to the study of Grapholinguistics, "the discipline dealing with the study of the written modality

of language." (ibid. 12) He continues: "Typography is only half a millennium old, but it is in part responsible for the fabulous technological and social advances of this period. Typography has developed its own codes [...]. As a subdiscipline of graphe[mt]ics, typographe[mt]ics becomes a subdiscipline of linguistics: the creative power of typography, scrutinized with scientific methods." (ibid. 15)

In the past, typography exclusively meant printing with movable letters made of metal or wood in a letterpress process (Meggs and Purvis, 2006, p. 64). Today, however, the term has expanded significantly beyond its original use and covers all activities of creating type as well as the composition of letters and further graphic elements in all production techniques, materials, and on all surfaces imaginable—both by laypeople and professionals alike. As Spiekermann puts it: "The generic term typography refers to the activities of designing typefaces and arranging type and other elements on a page. This page can also be a screen or a building wall." (Spiekermann, 2008, p. 409, our translation) This text is written in this broad understanding of typography.

The term "typographetics" can signify a bridge between the two disciplines, typography and linguistics, which are deeply connected in their subject matter and from whose joint efforts much can be expected for the further development of research on the communicative meaning of the written representation of language.

Based on a broad understanding of the term typography and the fact that at times the terms "typography" and "graphetics" can be understood as synonyms (cf. Meletis, 2015, p. 96), this paper takes a joint approach. The terms "typographic" and "graphic" are used here when the emphasis is on typography as a social practice and activity of sign producers. Since typography is a subdiscipline of graphic design, the term "graphic" is used to signify a broader level of analysis of holistic graphic artefacts (as opposed to considerations of typography in graphic artefacts) or to refer to the graphic discipline as such.

The terms "typographetic" and "graphetic" are used when the emphasis is on the communicative production of meaning. In parallel and as suggested by Haralambous, "typographetic" is used as a subdiscipline of the more general "graphetic" (cf. Haralambous, 2020, p. 15).

3. Context and Objectives

3.1. Research Context

My ongoing doctoral thesis with the working title "Typographic Landscapes—Social Dimension of Typographic Activity in Urban Spaces" aims at developing an analytical framework to investigate how sign-producers use typographic resources to create communicative meaning

in multilingual and multiscriptural urban spaces. The objective is to bring together typographic and sociolinguistic perspectives on the common subject of language in built environments. The project focuses on analysing what the materiality and formal gestalt of language contribute to its creation of social meaning in the human activity of sign-making in public spaces.

A foundational analysis applies the developed analytical framework to different discourse types (Scollon and Scollon, 2003). Following the findings in this foundational analysis, my thesis includes case studies in four areas of social dimensions: genre, ideology, identity, and stereotypes. The case study on genres examines the thematic localisation of shop types through (typo)graphetic resources in urban spaces. The case study on ideologies investigates the expression of values and attitudes in political stickers, as well as the use of connotatively highly charged type styles, such as blackletter. The case study on identity focusses on social positioning and the creation of cultural identities by the use of graphic means. The case study on stereotypes analyses cultural stereo(type)s in scriptural forms, and script system mimicry (cf. Wachendorff, 2018).

3.2. Objectives of this Paper

This paper aims at answering three subordinate questions of the overall research project on how typographic resources are used to create communicative meaning in multilingual and multiscriptural urban spaces:

1. Which are the relevant parameters for the examination of the typographetics of lettering in urban spaces?
2. How do the discourse types differ? Moreover: How do they differ between neighbourhoods with unique characteristics?
3. How do certain types of shops in urban spaces differentiate in their use of typographic resources?

With regard to the second question, the hypothesis is that the discourse types function as reception contexts and social patterns and differ, in part significantly, in the described typographetic parameters. Following this hypothesis, it could be assumed that possible prototypical combinations of graphic parameters in each discourse type give off an indication of the type of information passers-by are encountering. This visual indication might structure the expectations of the recipients of the texts in urban space even from some physical distance. Moreover, if there are significant differences between various parts of cities, this would signify that the typographetic characteristics indicate something about its inhabitants, their businesses, and the social structure of the community.

With regard to the third question, the hypothesis is that retail shops show specific typifications in their visual appearance and use of graphic

resources to indicate communicative actors and product groups. Moreover, specific genres use different typographic means to achieve their communicative goals.

4. Research Backdrop, Data, and Methods

4.1. Research Backdrop

My doctoral research is linked to the research project *Signs of the Metropolis* that investigates the 'visual multilingualism' of the Ruhr area. Visual multilingualism is apparent in all forms of non-moving text in public space ranging from traffic signs, commercial displays, advertising billboards to graffiti tags and stickers. The structure of the project is multidisciplinary with collaborating researchers from the fields of linguistics, sociology, urbanism, and integration sciences.[1] One central aspect of this multi-method approach is the evaluation of the role multiple languages play for acts of identity creation (cf. Wachendorff, 2016; 2019), multiculturalism, social belonging, and social recognition (Ziegler et al., 2018).

4.2. Research Location

The research takes place in the Ruhr Metropolis in North Rhine-Westphalia in Germany (Figure 2). It is the biggest locality of labour migration in Germany, due to three major migration phases from 1850 until today[2], which makes it a very diverse and multilingual area. The project database, generated between 2012 and 2013, shows 53 different languages and 14 different script systems. The region has undergone

1. The Research Project *Signs of the Metropolis—Visual Multilingualism in the Ruhr Area* at the University of Duisburg-Essen and the Ruhr University Bochum is funded by the MERCATOR Foundation (GZ MERCUR: Pr-2012–0045) and ran from 08/2013 to 12/2017. Prof. Dr. Evelyn Ziegler headed the project. Co-Heads were Prof. Dr. Heinz Eickmans, Prof. Dr. Ulrich Schmitz, Prof. Dr. Klaus Peter Strohmeier, and Prof. Dr. Hacı-Halil Uslucan.

2. Between 1850 and 1915, due to industrialisation, more than 500,000 workers were recruited from Silesia, Masuria, Russia, and Austria-Hungary to the Ruhr area to work in the newly founded coal mines and steelworks. During the second migration phase after World War II (between 1950 and 1973) about 20 million workers from Italy, Turkey, Portugal, Spain, and former Yugoslavia relocated to Germany. The third migration phase continues until today. Due to multiple global incidents, an average of 400.000 people migrate to Germany every year (Cindark and Ziegler, 2014, p. 1). Germany registered over one million refugees in 2015. Based on the federal allocation system, the largest percentage of refugees is attributed to the federal state of North Rhine Westphalia (21%). (Asylum statistic Dec. 2015, German Federal Office for Migration and Refugees.)

major structural change. In 1850 there were approximately 300 mines in the Ruhr area, operating at high productivity for over a century. The coal crisis, which began in the 1960s, eventually led to the closure of all mines, the last of which was closed 2018.[3]

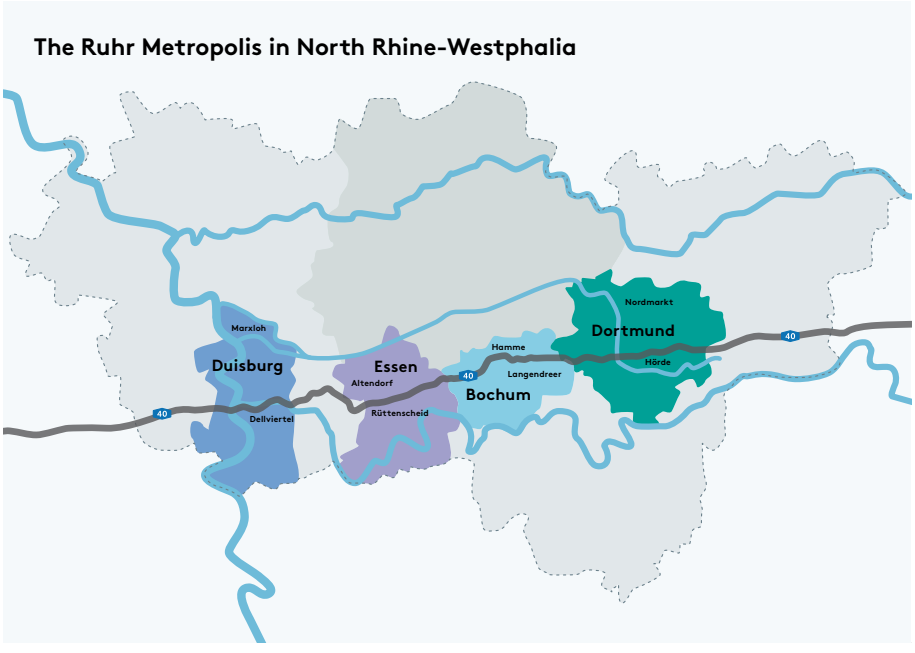

FIGURE 2. Map of the survey areas Duisburg, Essen, Bochum, and Dortmund in Germany.

4.3. Data

The research group gathered a corpus of 25,523 photographs of fixed inscriptions in eight streets in four cities (Duisburg, Essen, Bochum, and Dortmund) in 2013 and 2014. The eight urban districts have been selected on the basis that they form combinations of residential and commercial areas (cf. ibid., p. 38f). The survey of one street in the North and a corresponding one in the South of each city allows a comparison of the northern and southern districts divided by the A40 motorway,

3. Cf. http://www.ruhrkohlenrevier.de/histozechen.html, https://www.spiegel.de/wirtschaft/bottrop-letztes-stueck-steinkohle-an-frank-walter-steinmeier-uebergeben-a-1245133.html (retrieved 30.09.20).

nicknamed the "social equator" (Kersting, Meyer, Strohmeier, and Terpoorten, 2009, p. 142). The nickname derives from the fact that the educational levels, rents, and per capita income are lower in the North than in the South and that the districts differ in their social structure as well as ethnic and linguistic diversity (cf. ibid. 145).

4.4. Database

In each of the districts, every single text item visible along one street has been photographed individually, geo-referenced, and then tagged in a database (Figures 3 and 4). There has been no restriction concerning size, materiality, or provenance of the discrete text items. They range from an embossment of a 6pt sized *DIN* on the side of a dustbin to building-high graffiti letters, and from small handwritten notices fixed with scotch tape on a local shop door to high-gloss advertising billboards of international brands. All 25,523 photos have been tagged by the following categories: location, languages, information management (which part of a multilingual text is translated?), text and image combinations, types of discourses (commercial, transgressive, regulatory, infrastructural, and commemorative), type of institution (such as restaurant, shop, political party), size of the sign, material (sticker, plate, signpost, printed, painted, embossed, engraved), and typography (type styles: serif, sans-serif, slab-serif, scriptural, display/decorative, and blackletter); all of which eventually allows to search for precise combinations of parameters in order to analyse the data. The data analysis presented in this paper is based on the *Signs of the Metropolis* database.

4.5. Research Methods

Overall my doctoral research deploys a combination of research methods, consisting of quantitative and qualitative analyses of image and interview data. In this paper, the results from the quantitative and qualitative visual image analyses comprise eleven parameters in different sample sizes. This analysis includes all 25,523 images, except for the two parameters, colour and material, that are based on a structured randomised sample analysis with 552 images, between 100 and 181 in each discourse type.[4]

4. The parameters colour and material were not included in the original conception of the database. They were tagged subsequently in a structured randomised sample analysis of 552 images (spread over the entire data base), as it takes more than eleven weeks per parameter to tag 25,523 images (when 60 seconds are needed per image).

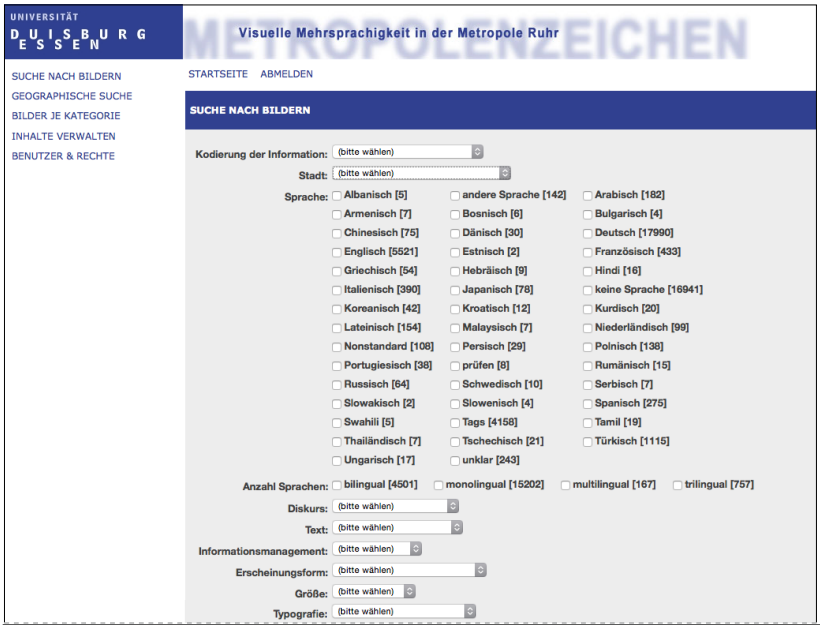

FIGURE 3. The *Signs of Metropolis* database tagging page.

FIGURE 4. A *Signs of Metropolis* database results page.

5. Theoretical Approaches

Two theoretical approaches are applied here for the foundational analysis as well as the case study of genres in shop types: One is the concept of discourse types by Scollon and Scollon (2003) which categorises different text types and their functions and helps to grasp and describe the diversity of writing in urban space. The other approach is based on genre-related concepts that help to understand how forms represent communicative functions of texts in order to create meaning. A closer look at the two perspectives and how they are connected reveals the following basic aspects.

5.1. Discourse Types

Scollon and Scollon (ibid.) have identified four discourse types for the visible signs and texts in urban spaces: The regulatory, infrastructural, commercial, and transgressive discourses. Regulatory signs are the ones announcing rules and prohibitions the compliance of which can be enforced by law, as, for instance, in the case of traffic signs. Infrastructural signs inform the public and organise the infrastructure, such as timetables at train stations or signs indicating institutions like schools. Commercial signs refer to shops, companies, and advertising. All shop signs, advertising posters, billboards, and price tags belong to this category. Transgressive signs are applied in an unauthorised way and superimpose the other discourses, such as graffiti and stickers (cf. ibid., p. 181). In the *Signs of the Metropolis* project (Ziegler et al., 2018, p. 78f) a fifth discourse type was added: the commemorative discourse, which commemorates people, dates, or events in an urban space, such as name plaques on monuments (Figure 5).

FIGURE 5. Sample images for the discourse types in the *Signs of the Metropolis* data corpus.

5.2. Genres

The concepts related to genre are a very different approach which promises to be useful when looking at visual artefacts. For, although

"all of us know intuitively that generic classifications never quite work" (Briggs and Bauman, 1992, p. 132), "the realities in and amongst which we live are not transparently conveyed to us but are mediated by systems of representation" (Frow, 2015, p. 20). Genres can be understood as reception and production patterns (cf. Bauman, 2001, p. 58) which give access to "form-function-meaning-interrelationships" (Briggs and Bauman, 1992, p. 143) of designed artefacts. They provide conceptual orientation frameworks and variable sets of prototypical elements that communicative actors use to create discourse (cf. Hanks, 1987, pp. 670, 681) and to position themselves socially (cf. Spitzmüller, 2013, p. 237f). The point that Delin, Bateman, and Allen are making for typographically designed print documents is equally applicable to typographically designed texts in urban space; when the authors point out: "the documents look different, and contain different language forms, because they are intended to do different things" (Delin, Bateman, and Allen, 2003, p. 55). Central to the genre concept are the characteristics of visible patterns (Wehde, 2000, p. 119) and repetition (Briggs and Bauman, 1992, p. 148). In fact, the repetition of combinations of visible patterns (cf. ibid.) of graphetic resources leads to similar interpretations that can constitute genres (cf. Spitzmüller, 2013, p. 247). Therefore, genres are links to previous, following, or simultaneous expressions and discourses of a similar kind, likewise for links to other places, peoples, positions, and times (Briggs and Bauman, 1992, p. 147f).

What makes genre construction in the analysis of social dimensions of typographetic artefacts in urban space so intriguing is the fact that meanings are discursively produced and interpreted. Genres are constantly (re)created in shared experiences of repetitive attributions to recognisable and interpretable visible forms. However, due to the fact that inventories of knowledge, social spaces, knowledge of languages and writing systems, geographical references, cultural and historical experiences, typographical socialisation, values and attitudes all diverge between people who produce and read graphic signs (cf. Spitzmüller, 2013, p. 245), there is always a fragmentary remnant—something that remains open. Genres have peculiarities, riddles, a scope for interpretation, a need for request, contextualisation, and translation. This combination of significant unity and meaningful openness makes genres in urban spaces a means of reflection on communicative goals, social positions, and identities.

It must be noted that genre is an intricate field of investigation because references are complex, fixed taxonomies never fit in full and can even be dangerously reductionistic. Most importantly: No single graphic resource relates to any definite meaning. Typographic artefacts need to be analysed in context. Nevertheless, the visible urban landscape is a visually mediated world in which patterns are formed, and genres can be thought of as visual patterns that provide sign recipients a degree

of orientation in urban space. The focus is on the question of what sign producers and recipients do with certain combinations of typographic resources in a certain setting in order to create discourse.

5.3. The Combined Approach

What both approaches have in common is that both, the foundational analysis on discourse types as well as the case study on genres, look at prototypical typographetic elements that form patterns in the data. In this sense, the concepts are connected. In the foundational analysis, the search for repeated patterns occurs on a very substantial level distinguishing discourse types and indicating different text functions. In the case study on shop types, the investigation focusses on how prototypical typographic elements create genres in different product and service sectors.

Nonetheless, discourse types and genres are different things, or better, they have been created to do different things and solve different problems. Possibly, discourse types, genres, text types, and graphic parameters can be understood as a cascading structural model of thought and not as a fixed sequence of specific occurrences that are firmly bound to one another. Some graphic realisations (such as stickers, for example) occur in many discourse types, genres, and text types. However, they are significantly more common in some and do not occur at all in others. The details of this will be presented in the results.

6. Analytical Framework

Eleven parameters are defined for the analysis of typographic artefacts in urban spaces in order to investigate how discourse types, genres, and text functions differ in their graphic appearance. Some of the parameters such as languages, script systems, and sign types include all individual occurrences found in the *Signs of Metropolis* data corpus—and are therefore in some respects already results. Other parameters such as type styles, sizes, colours, or mounting height are set categories that combine individual occurrences into larger groups. This paper will focus on presenting the results of the following parameters: discourse types, languages, script systems, type styles, colours, and materials. Furthermore, it presents an integrated comparison of the northern and southern neighbourhoods of the Ruhr cities.

I. Location of the Sign (8)[5]

Four streets in the North: Duisburg-Marxloh, Essen-Altendorf, Bochum-Hamme, Dortmund-Nordstadt;

Four streets in the South: Duisburg-Dellviertel, Essen-Rüttenscheid, Bochum-Langendreer, Dortmund-Hörde.

II. Discourse Type (5)

Regulatory, Infrastructural, Commercial, Transgressive, Commemorative.

III. Languages (53)

Albanian, Amharic, Arabic, Armenian, Azerbaijanian, Bosnian, Bulgarian, Catalan, Chinese, Croatian, Czech, Danish, Dutch, English, Estonian, Finnish, French, German, Greek, Hebrew, Hindi, Hungarian, Icelandic, Igbo, Indonesian, Irish, Italian, Japanese, Korean, Kurdish, Latin, Lingala, Malaysian, Nepali, Non-standard, Norwegian, Persian, Polish, Portuguese, Romanian, Russian, Serbian, Shona, Sinhalese, Slovakian, Slovenian, Spanish, Swahili, Swedish, Tamil, Thai, Turkish, Ukrainian.

IV. Script Systems (14)

Arabic, Cyrillic, Devanagari, Ge'ez, Greek, Hangul (to write Korean), Hanzi/CJK characters (to write Chinese), Hebrew, Kanji-Kana-Hiragana (to write Japanese), Latin, Malayalam, Sinhalese, Tamil, Thai.

V. Type Styles (7)

Serif, Sans-Serif, Slab-Serif, Scriptural, Blackletter, Decorative, (plus actual handwriting in tags and graffiti).[6]

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5. This figure refers to the number of categories in this parameter in the present study (8 = eight city districts).

6. For the foundational analysis of the discourse types, a simple classification of type styles was used for reasons of feasibility in the tagging of the 25,523 images. It is based on a reduced version of the DIN classification (Nr. 16518/1964) (cf. Schauer, 1975) considering the five main groups differentiated by "form" as described by Willberg (2001, p. 49) plus two other groups: decorative and actual handwriting. For more in-depth investigations into specific aspects of typeface use and connotations, it will be necessary to differentiate each of these groups further. It would be useful to consider the differentiation by "style" (dynamic, static, geometric) (ibid., p. 49) or to implement an even more fine-grained system as suggested by Pool (2017; 2020),

VI. Size (4)

> 100, < 100, < 10, < 1 square metre.

VII. Colours (14)

Primary colours: Red (R), Blue (BL), and Yellow (Y); secondary colours: Green (G), Orange (OR), Purple (PU); achromatic colours: White (W), Black (BK), and Grey (GR); mixed colours: Brown (BR) and Pink (P); emulated material colours: Silver (SI) and Gold (GO); actual Material Colour (MC) (e.g., lettering in metal, stone, or wood).

VIII. Materials (14)

Plastic, Foil, Metal, Paper, Paint, Fabric, Glass, Tiles, Stone, Plaster, Enamel, Wood, Screen, and Light.

IX. Sign Type (50)

Handwritten letters (3): Handwriting, Signwriting, Facade painting/ Graffiti;

Composed letters (4): Paper cut-out, Mosaic lettering, Stencil lettering, Embroidery;

Printed letters (8): Printed on Paper, Cardboard, Fabric, Enamel, Metal, Plastic, Adhesive foil, Stickers;

Moulded letters (2): Relief lettering, Debossed lettering;

Subtractively formed letters (5): Cut-out lettering, Stone-carving, Wood-carving, Glass-engraving, Metal-engraving;

Additively formed letters (7): Metal casting, Inlay lettering, Three-dimensional letters hollow, Three-dimensional letters solid, Wrought-iron lettering, Rendered lettering (in plaster), Modular plastic plug-in systems;

Illuminated and movable letters (21): Illuminated three-dimensional lettering, Lightboxes, Facade lightbox bands, Sign boxes, Cantilevers, Cubes, Slide Lightboxes, Vitrines, City-light-poster, Advertising pillars, Pylons, Advertising towers, or mast systems, Roof lettering, Neon signs,

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incorporating type width (condensed—extended), weight (ultra light—ultra bold), italic angle (upright—italic), serifs (serif/sans serifs), in the case of serifs: the shape of the serifs (small, fine, pointed, strong, half), and serif curves (none, outside, inside), the overall stroke contrast (low—high), and type of contrast (expansion/static—translation/dynamic).

Glass-only neon signs, Analogue information boards, Digital information boards, LED signs, Screen displays, Fabric coverings, Large-scale facade advertising.[7]

X. Integration Into the Architectural Context and Mounting Height

In order to analyse the integration of the typographic signs into the architecture, the placement of the signs in the built-up space is considered in two ways: On the one hand, the material integration, meaning the physical connection with the built-up structure. On the other hand, the visual integration, looking at how the design of the written information takes the surrounding facade proportions, materials, and colours into account. These two perspectives provide indications of the degree of the "semiotic intrusion" (Scollon and Scollon, 2003, p. 113). Furthermore, this parameter discusses the indexicality of signs, their production of meaning through the place of montage (cf. ibid., p. 30).

XI. Graphic Composition and Density of the Visual Surface

The graphic composition is analysed with the concept of visual literacy along some of the pairs of opposites developed by Dondis (1973, p. 16): balance versus instability, symmetry versus asymmetry, regularity versus irregularity, unity versus fragmentation, reduction versus complexity, static versus dynamic, subtlety versus expressiveness, consistency versus variation, flatness versus depth (layering), singularity versus confrontation. The density of the visual surface is analysed based on the concepts of *horror vacui* by Gombrich (1984: 80) and *amor vacui* by Mortelmans (2005, p. 21). Furthermore, the design principles of "chunking" (Lidwell, Holden, and Butler, 2003, p. 40) and "grouping" (Elam, 2004, p. 10) of information on visual surfaces are considered, grounded on the research by Cowan (2000) stating that the short-term memory of most viewers can process four elements (plus/minus one) most efficiently.

Sample Size

The first six parameters are tagged and quantitatively analysed based on all the 25,523 images of the *Signs of the Metropolis* database. The parameters colour and material are tagged and analysed in a randomised sample study across the entire database with a sample size of 100–181

7. The 50 sign types (or lettering) found in the *Signs of the Metropolis* data corpus where clustered, termed, and described based on the work of Stötzner (2000, p. 34), Haslam (2011), and Fischer et al. (2007). The very best has been done to find the equivalent English terms.

images per discourse type. The last three parameters are analysed qualitatively based on all 25,523 images. The parameter sign type is sampled across the entire database, the typical occurrences clustered in every discourse type and systematically visually analysed. The integration into the architectural context and mounting height, as well as the graphic composition and density of the visual surface, are discussed in a qualitative analysis of prototypical examples after reviewing the complete database.

7. Results: Discourse Types

This foundational analysis focusses on the apparent typographetic differences in the five discourse types in the Ruhr area. The objective is to identify whether heaped occurrences and prototypical combinations of graphic resources are linked to the communicative objectives in the discourse types. Following the presentation of the overall occurrence of discourse types, the language and script system distribution, the results on the use of type styles, colours, materiality, and sign types are presented. Subsequently, the graphic composition and integration of the signs into the architectural context as well as the differences between northern and southern neighbourhoods are discussed.

7.1. Occurrence, Language, and Script System Distribution

7.1.1. Overall Occurrence

The overall distribution of the 25,523 images in the five discourse types shows that most signs are—as to be expected—commercial with 49.2%. Less expected, the transgressive signs are the second largest group, with 38.99%. This result is insofar surprising as the authorities impose fines for transgressive signage—if one is caught in the act. The next two largest groups are the infrastructural signs with 6.7% and the regulatory with 4.95%. The by far smallest group are the commemorative signs with only 0.16%.

7.1.2. Language Distribution

Fifty-three languages occur in our data. However, considering that primary school children in Essen speak more than 100 first languages altogether (cf. Baur, Chlosta, Ostermann, and Schroeder, 2004, p. 98), this means many languages are lived and spoken in the Ruhr area that are not visible on the walls (cf. Schmitz, 2018, p. 153). About 66% of the

texts are German, 20% English, 4% Turkish. All the other 50 language occurrences together make up 10%.

Regarding the language distribution, the commercial discourse type is the most multilingual showing 42 of all the 53 languages in our data set, with 32.43% of the texts in non-German languages. The infrastructural and regulatory discourse types are overwhelmingly in German: 85.2% of the infrastructural and 93.7% of the regulatory signs are in German. The infrastructural discourse type—the discourse organising all the public infrastructure from schools and kindergartens to state organs and institutions—only shows 17 languages and regulatory signs only six languages. The transgressive signs are again more versatile and show 30 languages. 34.4% of the transgressive texts show English texts and only 56.2% German texts. The commemorative signs show six languages, of which 24% are non-German (Figure 6).

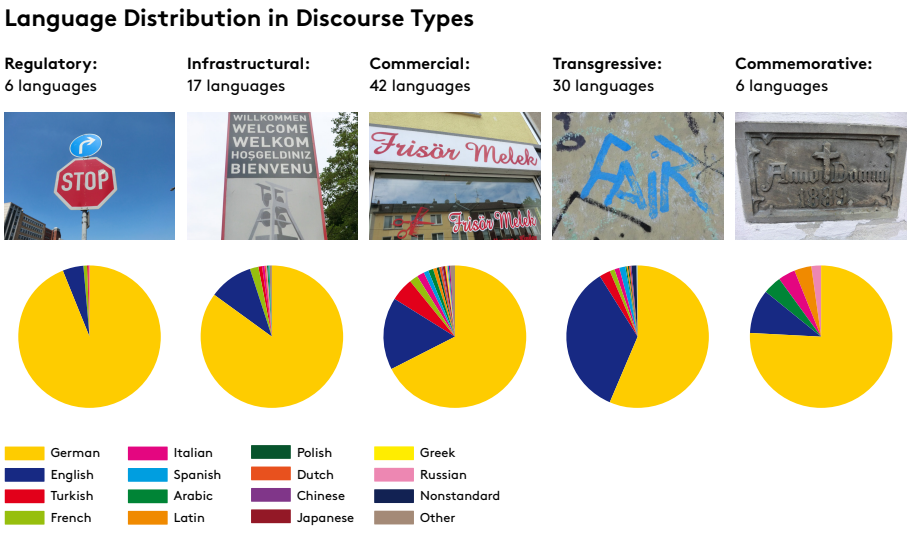


FIGURE 6. The language distribution in the discourse types in the *Signs of Metropolis* data.

7.1.3. Script System Distribution

There are 14 script systems in our data. The 13 script systems beyond Latin make up only 1.2% of our entire data set. 98.82% of all texts are in the Latin script. Arabic is the most common script after Latin, it accounts for 0.45% of all occurrences, and 0.7% comprise all the other 12 script systems. For the most multilingual region and biggest migration

area in Germany, this is a surprisingly low and not very multifaceted outcome. The greatest occurrence of 0.8% of scripts beyond Latin is again in the commercial discourse type, which shows that multiscripturality in our data is strongly linked to trade. Multiscriptural signs appear mostly in signs of food markets, restaurants, and translation agencies. Regulatory signs show 0%, infrastructural 0.03%, transgressive 0.2%, and commemorative 0.01% script systems beyond Latin.

7.2. Type Styles, Colours, Materiality, Sign Types, Graphic Composition, and Integration of the Signs into the Architectural Context

In the following section, the five discourse types will be looked at individually. The results of the used type styles, colours, materials, and sign types, as well as some insights into the graphic composition and the integration of the signs into the architectural context, will be presented in summaries. It is important to note that the photographed items often show more than one colour or type style, so that the total occurrence does not add up to 100%.

(In Figures 7–11 we use the following notation conventions: Type style abbreviations: Sans Serif typefaces (Sans), Handwriting in tags and graffiti (Handw.), Decorative typefaces (Decor.), Slab-Serif typefaces (Slab), Blackletter (Blackl.). Material abbreviations: Fabric (Fabr.), Plaster (Plas.), Enamel (Enam.). Colour abbreviations: White (W), Black (BK), Red (R), Blue (BL), Yellow (Y), Green (G), Orange (OR), Purple (PU), Brown (BR), Pink (P), Grey (GR), Silver (SI), Gold (GO), Material Colour (MC).)

7.2.1. Regulatory Signs: Sans Serif Typefaces, Primary Colours, and Metal

The regulatory signs (Figure 7) announce rules and make laws visible in urban space. In our data, they do this for 98% in sans serif typefaces. The top-down governmental communication is not only monolingual in German and monoscriptural in Latin; it is also mono sans serif; usually, with one type style per item. Sans serif typefaces are formally reduced to the essentials in line with the regulatory text content: without unnecessary decorative elements. The most prevalent typeface in the group of sans serif type styles is the *DIN* font, which is specified in the road traffic regulations for public signage in Germany and can be found in all expected contexts in regulatory (and infrastructural) signs.

Looking at colour, it is surprising that regulatory signs almost exclusively use primary colours (blue, red, and yellow), as well as black and white. The colours are assigned to a specific warning, directional, and regulatory function.

Concerning the graphic composition, the regulatory discourse type is remarkable for its reduction, symmetry, and statics. The majority of the signs show great balance, regularity, and consistency. The low information density reduced colourfulness and the lack of layering results in the flatness of the visual surfaces. With regard to the compositional richness, the regulatory signs, by and large, show the lowest density with few focal points on the visual surfaces.

The analysis of the materiality shows that the different discourses in urban space markedly use different materials to communicate their contents. Three of the five discourse types show different primary materials to realise their messages. Regulatory information stands out in so far that about 80% of it appears on metal signs. In addition to the dominant 'metal plate parade', there are nine other sign types, which is not a wide variety compared to the overall 50 different sign types found in our data.

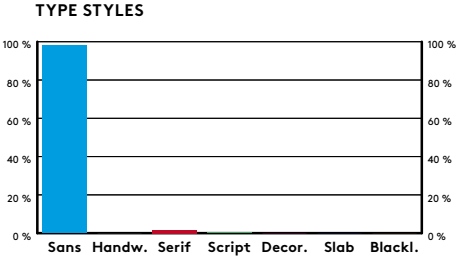
Concerning the integration of the signs into the architectural context, most signs in the regulatory and infrastructural discourse type belong to one of two groups: On the one hand, signs that are mounted on metal posts independently of buildings in the urban space show accordingly a low level of material and visual integration. They do not take into account the colours, materials, and building proportions of the built environment and form a 'forest of signs' specific to Germany. On the other hand, many signs are placed directly on objects and places of relevance, which are materially firmly integrated but visually stand out very conspicuously from the surrounding space, such as "Danger"-signs on high-voltage electrical boxes. The semiotic interference of these two groups is high; they regulate and organise community life. The smooth running of the urban infrastructure and the functioning of the transport system depends on their visibility and legibility. Their appearance and, in case of traffic signs, their height of two metres at which they are installed, is regulated by law. Human lives may depend on the visibility and functionality of this group of signs. In other countries, this high standardisation of regulatory signs can be quite different or is generally lower.

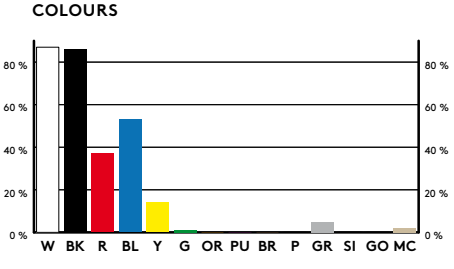
7.2.2. Infrastructural Signs: Sans Serif Typefaces, Primary and Secondary Colours, Metal, Plastic, and Paper

The infrastructural signs (Figure 8) inform the public and organise the infrastructure. Similar to the regulatory, the infrastructural discourse type shows an astonishing 99% of sans serif typefaces, and most signs only use one typeface.

In terms of colour, the infrastructural discourse type adds the secondary colours (green, orange, and purple) to the primary colours (blue, red, and yellow), as well as black and white. The colours in the infrastructural discourse type are again part of a functional and convention-

Regulatory Signs





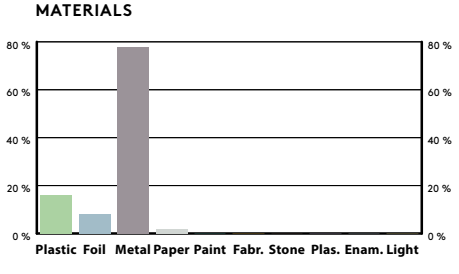


FIGURE 7. The images show regulatory signs in the Ruhr Metropolis. The graphs show the distribution of type styles, colours, and materials in the regulatory discourse type.

alised system and have explicit semiotic tasks: Red can be found on prohibition and danger signs, blue on most regulation signs, blue and yellow on directional signs, brown on tourist signs, all additional traffic signs are in black and white.

In terms of graphic composition, the infrastructural discourse type shows very different visual surfaces. Some signs are significantly reduced and static, similar to most regulatory signs, with high symmetry, regularity, and consistency. Other signs, like timetables or city maps, show higher complexity and irregularity. Concerning the abundance of the visual surface, the infrastructural discourse type also shows a low density of focal points in the majority of cases.

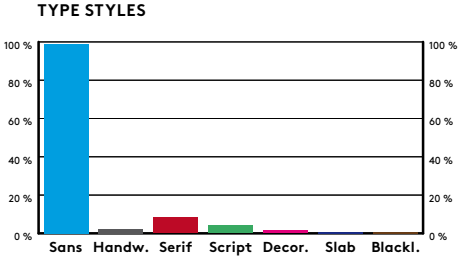
In the analysis of materiality, the infrastructural signs represent a wider range than regulatory ones. Besides metal signs (which make up more than 30%), many texts are realised in plastics, on paper, or in adhesive foil. The infrastructural discourse shows considerable diversity with 30 out of 50 sign types, including many printed letters on metal, paper, plastic, and foil, a large group of moulded letters, a few movable and illuminated letters (such as pylons, and different information boards).

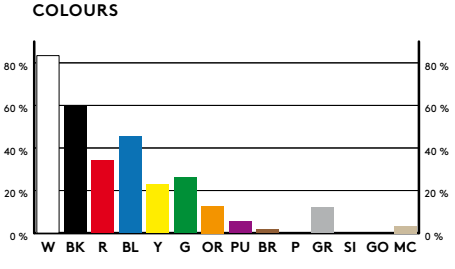
Concerning the integration of signs into the architectural context, most signs in the infrastructural discourse type also belong to one of the two groups previously described for the regulatory discourse type: Independent signs on metal posts as well as signs permanently mounted at the locations of their relevance. In addition, there is a third group, however, that interacts with the architectural environment in a completely different way. These texts on institutions such as courts, schools, or community centres are highly individual and sensibly integrated into the built environment in a material, visual, and thematic way. The lettering appears to be precisely designed to match the colours, materials, facade proportions as well as the historical periods and areas of responsibility of the institutions. They visibly communicate stable, long-lasting values, but they do not have to advertise or compete for the attention of walk-in customers. Nor does the life-saving intervention depend on their instant recognisability. Therefore, a citizens' office can elegantly mark its entrance with grey letters on grey stone, whereas a fire-fighter water access, visually much less integrated, requires a bright red text on a white background with a strong red frame.

7.2.3. Commercial Signs: All Type Styles, a Wide Range of Colours, Foil, Paper, Plastic, and Light

Commercial signs (Figure 9) announce shops and companies, advertise products and services, and tempt consumption. Here we find the widest variety of type styles: In addition to 84% sans serif typefaces there are 27% serif, 18% scriptural, 9% decorative, 2% blackletter, and 2% slab serif typefaces, and 6% actual handwriting. Most of the signs show more than

Infrastructural Signs





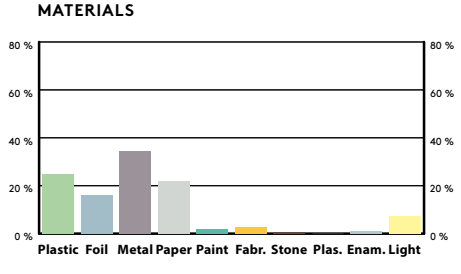


FIGURE 8. The images show infrastructural signs in the Ruhr Metropolis. The graphs show the distribution of type styles, colours, and materials in the infrastructural discourse type.

one type style, on average, 1.5 typefaces per sign. Commercial signs advertise, seduce, and compete. They indicate varying product groups and communicative actors and a variety of expressive typographic forms supports this endeavour.

Also concerning the use of colour, the commercial discourse type is the most multifaceted, with the broadest colour spectrum and the most occurrences of an average of 3.3 colours per sign. In addition to primary and secondary colours, a wide variety of mixed colours can be found, such as brown and pink, as well as silver and gold. This colour diversity is equivalent to the diversity of languages, script systems, and type styles. It serves the purpose of distinction, genre indication, and the achievement of individual communicative goals.

In terms of graphic composition, many commercial signs show high complexity, dynamism, and expressiveness. Layering and variation function as driving compositional principles in advertising. Concerning the richness of the visual surface, the commercial discourse type often shows visual surfaces that correspond absolutely to the four (plus/minus one) principles (cf. Cowan, 2000). Some very reduced visual surfaces create social distinction or sublimity through emptiness (cf. Mortelmans, 2005). Likewise, there are very dense, crowded visual surfaces, particularly when entire shop fronts are understood as one visual surface. The comparison of the discourse types shows that abundance, superimposition, density, and proximity of the graphic elements on the visual surface can be found especially in commercial (as well as transgressive) signs. The question arises whether selling and seducing attempts to create intimacy and familiarity through typographic proxemics. The density of graphic elements might correlate with the desired closeness to the customer. In opposition to this, the regulatory and commemorative types of discourse create distance, demarcation and authority through much clearer and emptier visual surfaces.

In the investigation of materiality, the commercial discourse type shows 36% adhesive foil, 32% paper, 25% plastic, 7% light signs and hardly any metal. This range is reflected in the sign types found. Commercial signs show the broadest spectrum with 48 of 50 sign types. On the one hand there are the most extensive occurrences of paper prints, foil inscriptions, stickers, and handwritten notes. On the other hand, all the big, cost-intensive, illuminated and moving lettering techniques (from neon signs to lightboxes, building high hoardings, and digital billboards), which do not occur in the commemorative, transgressive, or (with a single exception) in the regulatory discourse type can be found in the commercial signs. Correspondingly, most of the characters that are larger than 10 m^2 are also found here. The commercial signs in urban space show the widest variety concerning their integration into the built-up environment. The visual integration is often lower and the semiotic interference higher, since the attention of the sign recipients

is intensively sought, under highly competitive pressure. This group of signs, like the regulatory group, wants to be clearly visible, but not for safety reasons, but to seduce.

The massive diversity observed on the design of visual surfaces inshop signage raises the question to what extent high and low visual/material integration is related to factors such as laypeople versus trained graphic design, social strata, neighbourhoods, geographical regions, product genres, and the goals of the communicative actors. (Whereby, it became clear in the broader data analysis that it is not the money spent that makes a sign functional, aesthetic, and effective in urban space, but rather the appropriate means of expression in relation to the communicative needs and contexts under consideration of the architectural surroundings.)

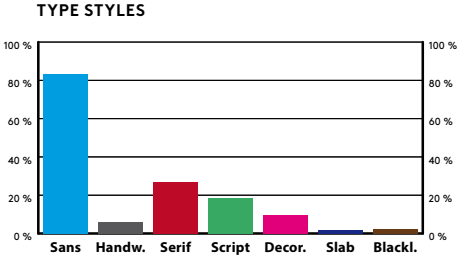
In terms of indexicality, the commercial discourse type differs greatly from the regulatory and infrastructural one. In addition to texts that develop their meaning from the particular location of their montage, such as the names and labels of the shops, services, and products that can be purchased exactly at the place where the sign is attached, there is a second group of advertising spaces which refer to events or products that are not connected to the place of the attachment of the sign whatsoever.

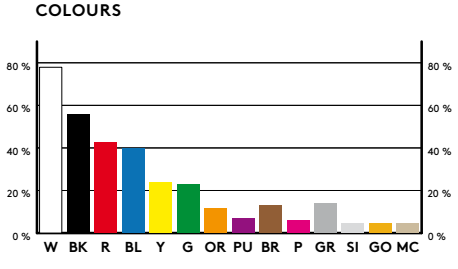
7.2.4. Transgressive Signs: Handwriting and Decorative Typefaces, a Wide Range of Colours, Stickers, and Paint

Transgressive signs (Figure 10) superimpose, they interfere with or fight against other discourses (and sometimes advertise without permission). Like the commercial discourse, transgressive signs show a huge variety of scriptural forms, particularly decorative typefaces. 57% of the items show handwriting in tags and graffiti, 39% sans serif, 18% decorative, 9% serif, 8% scriptural, 7% slab serif, and 1% blackletter typefaces. The transgressive discourse expresses political attitudes, ideological positions, social concerns, scene affiliations, and rivalling sport club allegiances. This requires expressive and connotatively strongly charged letterforms. Creativity and individuality take precedence over legibility. Many stickers show more than one typeface, on average, 1.5 per item.

Similar to the commercial discourse, transgressive texts show a wide spectrum of colours. Concerning the graphic composition, transgressive stickers show the highest complexity in comparison to all other discourse types. The small space and the low demand for legibility on stickers often lead to intense layering, compositional dynamics, high variation, and expressiveness. The materiality of transgressive signs is spread out over two big and one small group: 52% adhesive foil (stickers), 45% paint (tags and graffiti), and 3% paper. With this high number of stick-

Commercial Signs





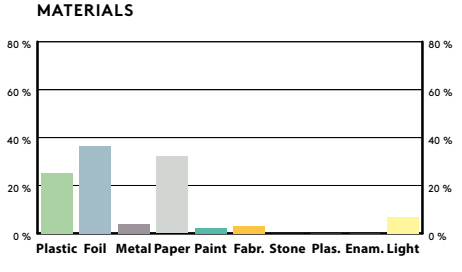


FIGURE 9. The images show commercial signs in the Ruhr Metropolis. The graphs show the distribution of type styles, colours, and materials in the commercial discourse type.

ers, the transgressive discourse has the largest group of tiny items, with 57% under 20 cm².

Transgressive signs are by design not visually integrated into the architectural context; they explicitly do not take into account surrounding facade proportions, materials, and colours, but resist and overwrite the given. They often aim for high visibility, but not for safety reasons (as in the regulatory and infrastructural discourse) nor to advertise products (as in the commercial discourse), but to mark the territory, express political positions, and social agendas and give visibility to subcultures as well as popular cultures. In that, few signs refer specifically to the location of their placement.

7.2.5. Commemorative Signs: Serif Typefaces and Blackletter, Lots of Material Colour, Metal, and Stone

Commemorative signs (Figure 11) materialise the memories of people, dates, and events in urban space. They occur in six of seven type styles, not showing any slab serif typefaces, however. With 5% they show the largest percentage of blackletter in memorial plaques on buildings and with 23% a high occurrence of serif typefaces, mainly in stone inscriptions. Remarkably, the commemorative discourse shows minimal colour overall. 49% of all items have the colours of the underlying materials, such as stone, cast iron, or plaster. This indicates that the culture and practice of remembrance is a subtle and quiet activity. Not only in this respect commemorative signs in urban space form a kind of visual antithesis to the loud, colourful, and attention-seeking commercial signs.

Many visual surfaces of commemorative signs are characterised by great balance, symmetry, regularity, and simplicity. Commemorative graphic surfaces often show static lines of centre aligned text. While regulatory signs cultivate the emptiness of the visual surface in order to achieve clear visibility, in commemorative visual surfaces, however, they seem to aim more at sublimity, quiet appreciation, and distinction from the other groups of signs.

Commemorative signs show a wide range of materials, amounting to uniquely high quantities in materials such as metal (26%), stone (10%), enamel (about 3%), and plaster (also 3%). The 13 sign types reflect these exceptionally high material occurrences: There are stone engravings, metal cast plaques, forged iron letters, stone mosaics, plaster reliefs, and facade paintings, all of which are very rare in all the other discourse types (or, such as stone inscriptions and plaster reliefs, do not occur at all). This suggests that certain materials and sign types in urban space can cross-refer to the kinds of texts and discourses that passers-by are facing in urban space. Furthermore, it shows how the materiality of signs and their value is linked to the functions of the text. In this case, the longevity of stone is associated with the intention of long-lasting memory.

Transgressive Signs

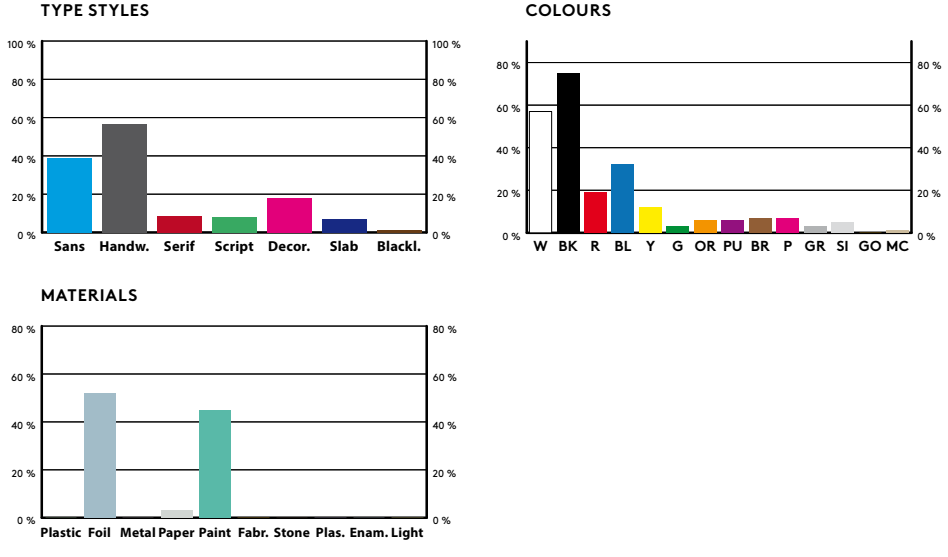


FIGURE 10. The images show transgressive signs in the Ruhr Metropolis. The graphs show the distribution of type styles, colours, and materials in the transgressive discourse type.

The relationship of commemorative signs to the architecture is singular. Many signs are inextricably integrated into the built-up space in an almost inseparably stable way. Likewise, the visual integration is extraordinarily high (and, correspondingly, the semiotic interference is low), as many signs are in material colour. Furthermore, a unique number of commemorative texts are not in the field of vision, but placed below waist height, on the floor, or above head height. Commemorative signs do not need to be clearly visible for safety reasons, nor do they compete with each other. Therefore, the practice of reminiscence can take place very discreetly and silently, in durable, uncoloured materials. Public discussions about the mounting heights of commemorative signs, whether commemorated people are "trampled underfoot," when signs are located in the ground[8] or whether one can encounter commemorated people "at eye level" in a stele[9] instead, are indications of the considerable importance of these design decisions.

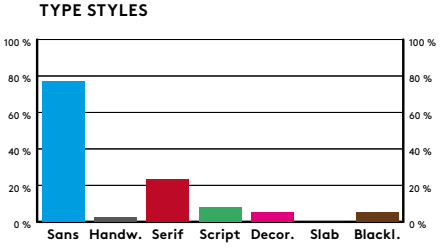
7.3. Interim Conclusion: The Discourse Types in Comparison

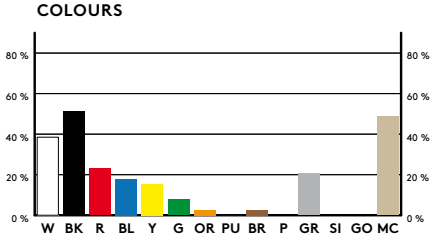
In conclusion, the results of the discourse type analysis so far suggest that, despite overlaps, different core materials and prototypical combinations of typographetic resources indicate discourses in urban space (Figure 11). In broad strokes, the regulatory discourse is characterised by many metal signs, black, white, and primary colours as well as sans serif typefaces, mainly the *DIN* typeface. The infrastructural discourse shows a lot of metal, plastic, and paper, as well as primary and secondary colours, and 99% of it remain in sans serif typefaces. The commercial discourse has the greatest diversity in languages and writing systems as well as in type styles, colours, and sign types, with the primary materials being foils, papers, and plastics. The transgressive discourse is the least diverse in sign types and materials (it occurs only in stickers and graffiti tags), but shows the widest variety in decorative typefaces and colours. The commemorative discourse displays high percentages of serif typefaces as well as the highest percentages of blackletter typefaces. With half of the signs in material colours, it is characterised by unique sign types such as cast metal, forged letters, and stone inscriptions. Accordingly, it becomes apparent that four out of five discourse types mainly use different materials to realise their messages: regulatory (metal signs), commercial (plastic, foil, paper), transgressive (stickers and paint), and commemorative (wrought iron, cast metal, stone).

8. Cf. Jakob Wetzel: Debatte um Stolpersteine: Gedenken, das entzweit. Süddeutsche Zeitung. 13. Oktober 2014. (https://perma.cc/D6Z3-XNNP) (retrieved 16 December 2020)

9. Cf. Myriam Siegert (12.11.2018): Gedenken an Nazi-Opfer, Wieder Debatte um Stolpersteine—32 neue verlegt. Abendzeitung München. (https://perma.cc/MUK3-34VM (retrieved 16 December 2020)

Commemorative Signs





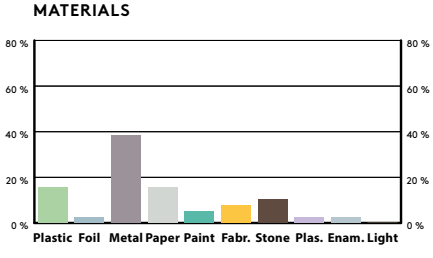


FIGURE 11. The images show commemorative signs in the Ruhr Metropolis. The graphs show the distribution of type styles, colours, and materials in the commemorative discourse type.

For each discourse type, certain combinations of graphetic resources are more common than in others. This finding reveals that the combinations are related to and serve the communicative goals of the sign producers in the respective discourses. The regulatory type of discourse requires standardisation, stringency, and clarity in graphic terms to ensure readability. The commercial discourse type requires a high diversity of typographic means to indicate goods and service providers under competitive pressure in a dense visual landscape. On the smallest canvases of transgressive stickers, the greatest creative freedom is enjoyed without limitations by legibility issues. Rich compositions, as well as connotatively strongly charged letterforms, are beneficial for the expression of political positions, social agendas, and scene affiliations. Commemorative signs show little colour, are firmly integrated into the architectural environment, and are made of extraordinarily durable materials that reflect intentions of long-lasting memory. Infrastructural signs are less prototypical and somewhere in the middle between standardised regulatory signs, commercial lightboxes and highly integrated, individual, valuable commemorative signs.

These prototypical typographic differences in the design of prohibitions, warnings, wayfinding, advertisements, protests, and memories indicate the groundwork as well as the meaning creation of typographetic resources in urban space. Since certain combinations of graphetic resources are more common in some discourses than in others, it can be assumed that these combinations give passers-by in urban space an indication of what kind of message they might be encountering. Furthermore, it can be assumed that the use of appropriate and customary graphic resources helps the sign producers to gain the sign recipients trust and understanding.

Beyond that, the graphetic differences analysed indicate in some respects that the classification proposed by Scollon and Scollon (2003) is valid. This very broad foundational analysis of discourse types, with more than 25,523 images, focusses mainly on aspects of the para- and micro-typographic level. For the following case studies with smaller sample sizes the meso- and macro-typographic levels (cf. Stöckl, 2004, p. 22f) are to be taken into greater consideration.

7.4. Differences Between Northern and Southern Neighbourhoods

7.4.1. Differences in Languages, Script Systems, Colours, and Type Styles

The comparison of the four northern and four southern districts reveals several significant differences (Figure 13). With regard to the distribution of languages, the North is more diverse. On the one hand, the northern districts have fewer monolingual occurrences. Furthermore, the two

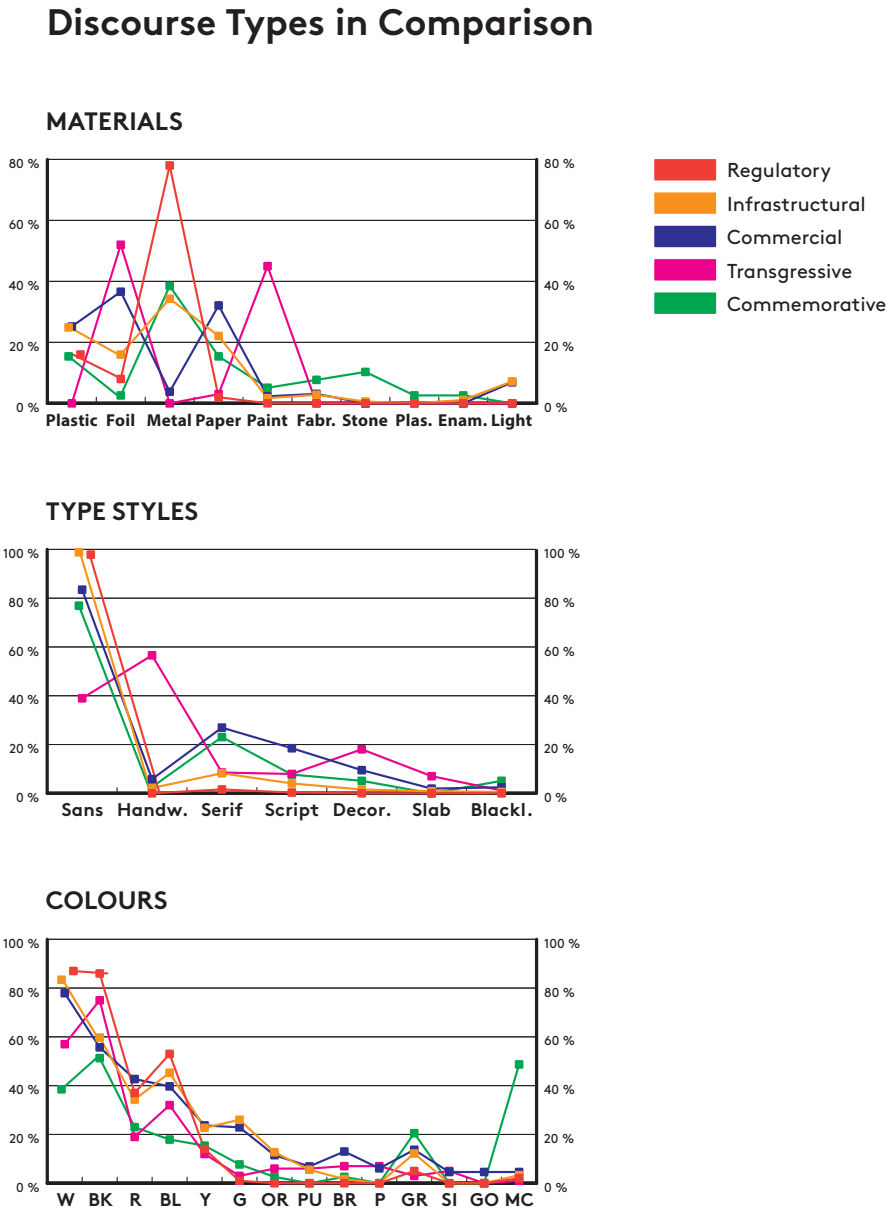


FIGURE 12. Three graphs showing the differences in the distribution of type styles, materials, and colours between the five discourse types in the Ruhr Metropolis.

largest language groups, German and English, are slightly less represented in the North. Accordingly, the North shows a greater number and variety of non-German and non-English texts (17.8%) in comparison to the South (12.4%). Western and southern European languages such as French, Italian, and Spanish are about twice as common in the South. In contrast, the more recent migrant languages such as Turkish and Arabic are about five times more common in the North (cf. Ziegler et al., 2018, p. 65). Overall, of the 53 found languages, 44 are visible in the North and 41 in the South.[10]

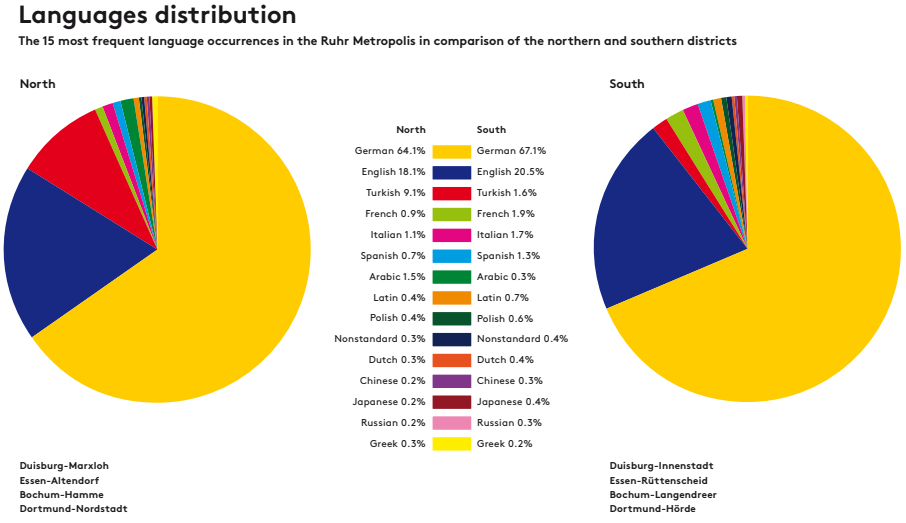


FIGURE 13. The different distribution of the 15 most frequent language occurrences in the Ruhr Metropolis based on a comparison of the northern and southern districts.

In the distribution of writing systems, the North shows texts in 13 script systems, which is just one more than the South. However, 58.4% of the occurrences of script systems beyond Latin are located in the North, thus offering more script system diversity. Strikingly, the writing systems are distributed very unevenly: Arabic is found at a rate of 92.72% in the North; Hànzì, Kanji/Hiragana/Katakana, and Hangul for

10. The North has no Igbo, Irish, Lingala, Malay, Norwegian, Shona, Swahili, Thai, and Hungarian. The South has no Albanian, Amharic, Armenian, Azerbaijani, Bulgarian, Estonian, Finnish, Indonesian, Catalan, Nepali, Sinhalese, and Ukrainian. However, the occurrences of these languages in the respective region of comparison are also small, ranging from one to 13 occurrences.

writing Chinese, Japanese, and Korean are jointly found in the South at a rate of 77.9%. Hànzì, Kanji/Hiragana/Katakana, and Hangul are mainly found in Chinese, Japanese, and Korean restaurants, that are almost exclusively located in the southern neighbourhoods (Figure 14).

Concerning type styles, the regulatory signs show no difference between North and South, as all occurring examples are set in sans serif typefaces. In the infrastructural signs, the South is slightly more diverse, with more decorative, blackletter, sans serif, and slab serif typefaces as well as more handwriting. In the commercial signs, the North shows a greater diversity compared to the South with more serif and decorative typefaces. With an additional small plus of blackletter and serif typefaces, the North shows more diversity in the commercial signs, which is the largest discourse type in our data. In the transgressive signs, the South is more diverse, as more stickers are being placed there (particularly in Essen-Rüttenscheid), and stickers show a high diversity of typefaces. In the commemorative discourse, the North is more diverse again, with more decorative and blackletter typefaces as well as more handwriting.

In a comparison of colour occurrences in the commercial signs, which are the largest group, the North shows higher occurrences in 11 of 14 colours (all colours except black, grey, and material colour) and is hence more colourful and diverse than the South (Figure 15).

The visible differences in the graphic parameters seem related to the social structures of the districts. As research by Ziegler et al. (ibid.) shows, the North as a whole, especially in the neighbourhoods of Duisburg-Marxloh and Dortmund-Nordstadt, have the greatest diversity in the population. The two districts show the largest groups of non-Germans and dual nationals (72.8% in Duisburg-Marxloh and 55.7% in Dortmund-Nordstadt) and the highest diversity index of 0.8 (cf. ibid. 49). The diversity index (according to Simpson, 1949, p. 688) indicates the extent of the diversity of the population in a particular area, whereby "1" represents maximum diversity and "0" represents none (cf. Ziegler et al., 2018, p. 51). Essen-Rüttenscheid is least characterised by migration, with the proportion of German nationals at 86.1% (cf. ibid. 49) and the diversity index at the lowest of 0.2 (cf. ibid. 51).

The data analysis shows that the North is graphically as colourful and diverse as its population structure. In the northern more multicultural quarters a broader range of visual strategies is used. One might conclude that the urban space reflects in its graphic signs which social groups inhabit and cultivate a space. It can be stated that in our data, cultural and linguistic diversity is associated with visual and typographic variance.

Three things stand out in particular in a North-South comparison: (1) The commercial discourse type in the North is more diverse in colours and typefaces. It seems interesting to take a closer look at the shops and their visual strategies that create this diversity. (2) The Duisburg-

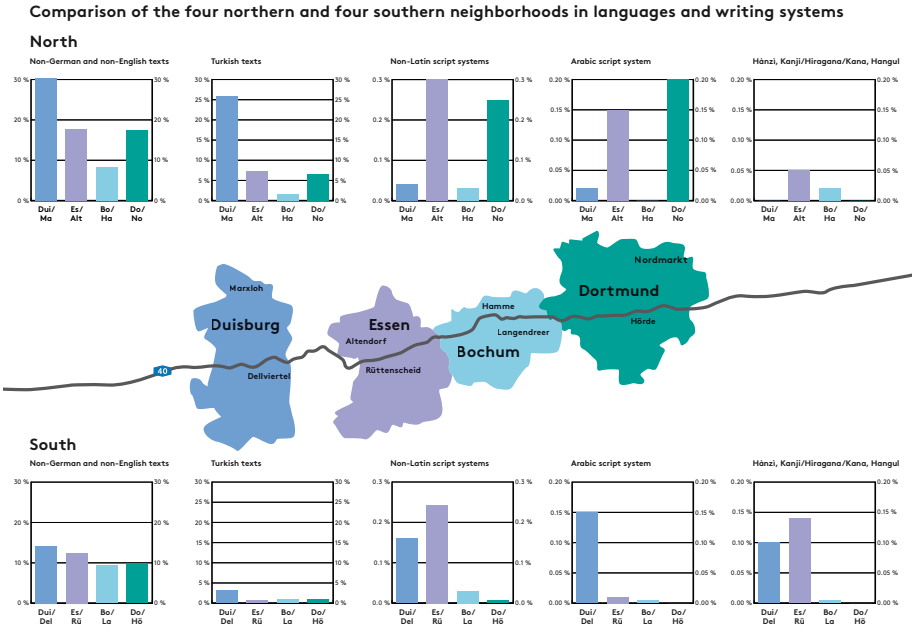


FIGURE 14. Comparison of the northern and southern neighbourhoods with respect to selected languages (non-German, non-English and Turkish texts) and selected script systems (Arabic, Hànzì, Kanji/Hiragana/Kana, Hangul).

Marxloh district, with the most non-German and Turkish texts, also shows by far the largest group of decorative typefaces. It seems worth exploring whether there is a meaningful correlation between these results. In the following, these two notable findings, which have emerged from the data, will be examined in more detail.

7.4.2. Possible Explanations for the Increased Diversity in the North

The results from the comparison of the northern and southern neighbourhoods show that the North is more diverse in the languages and script systems as well as in type styles and colours in the commercial discourse type. However, this result was by no means to be expected. For it could have been reasonably anticipated that the South is more diverse, as it has the expansive shopping districts (for instance in Essen-Rüttenscheid), where various elaborate retailers try to distinguish themselves under competitive pressure. Greater colour and typographic diversity could have been expected in the South as well. However, the graphic plurality in commercial signs is typical of the North. There are two possible explanations for this.

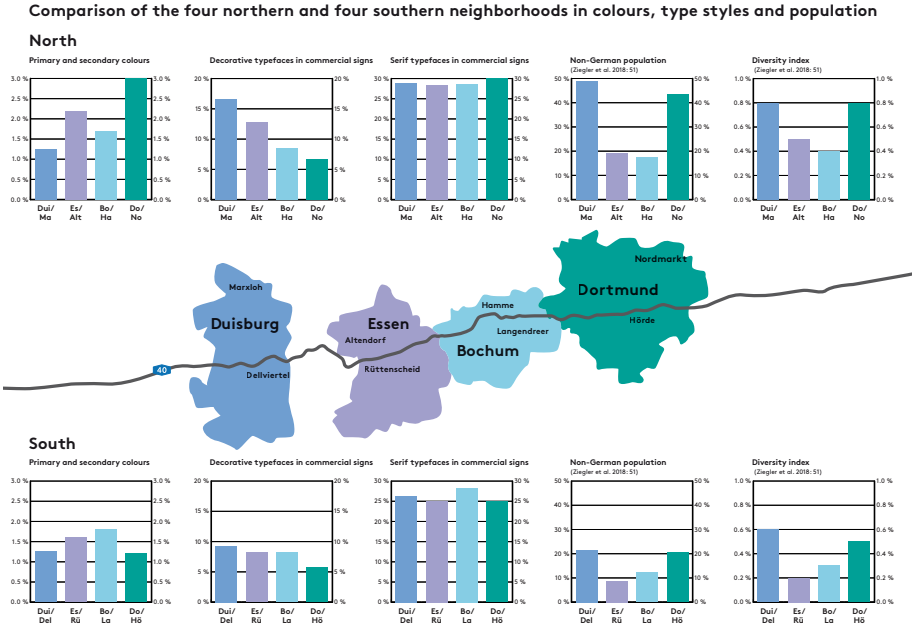


FIGURE 15. Comparison of the northern and southern neighbourhoods with respect to primary and secondary colours, decorative and serif typefaces in the commercial discourse type, non-German population, and diversity index.

Looking at the kind of shops that are located in the different neighbourhoods, it becomes apparent that there are more owner-operated retail shops in the North and more international chains in the South (Figure 16). It shows that owner-operated shops are characterised by more individual approaches to sign making; hence the North is more diverse. Accordingly, the visual appearance of individually owned small grocery shops, for example, is much more multifaceted in colours and type styles as well as languages and script systems. Whereas the big international chains very consciously tend to develop systematic, reduced, neutralising, "one look pleases all" approaches that in times of increasing "blandisation"[11] tend to become more similar.

However, this seems to be only half of the explanation. When looking at fashion shops, it turns out that owner-operated retail shops in the North are still more diverse than owner-operated shops in the South (Figure 17). Therefore, it is not only small shops as opposed to big chains that account for the difference here, nor laypeople design (in

11. http://www.eyemagazine.com/feature/article/normcore-inferno (retrieved 30.09.20).

small shops) against the design of marketing strategists who develop the design of big brands. Thus, it might be that some shop owners in the North follow different aesthetic ideals when creating typographic spaces (which are to be explored from an epic perspective in interviews with the sign makers), an aspect which moves us on to the next observation.

Grocery shops in the North

Grocery shops in the South

FIGURE 16. Small individual grocery shops in the North showing more visual diversity than big chains in the South.

Owner-operated fashion shops in the North

Owner-operated fashion shops in the South

FIGURE 17. Individual fashion shops in the North show more visual diversity than individual fashion shops in the South.

FIGURE 18. A selection of decorative typefaces in Turkish language texts in Duisburg-Marxloh, top left to bottom right: (a) Hairdresser (Typeface: *Victorian*, Letraset Type Studio, 1970s (Letraset 1978: 156)), (b) Cafe (Typeface: Similar to *Bookman*, based on *Antique Old Style No. 7*, 1858, A. C. Phemister, part of the Letraset Collection (Letraset 1978: 22)), (c) Restaurant (Typeface: *Victorian*, Letraset Type Studio, 1970s (Letraset 1978: 156)), (d) Cafe (Typeface: *Algerian*, Stephenson Blake, 1902, part of the Letraset Collection (Letraset 1978: 110)), (e) Bakery (Typeface: *Arrus*, designed for Bitstream by Richard Lipton in 1991), (f) Music school (Typeface: *Fontleroy Brown NF*, a so-called 'retro' font designed by Nick Curtis, released in 2009). Information on the typefaces *Bookman*, *Algerian* and *Arrus* (cf. `https://fontsinuse.com` (retrieved 30.09.20)), *Fontleroy Brown NF* (cf. `https://www.myfonts.com/fonts/cheapprofonts/fontleroy-nf-pro/` (retrieved 30.09.20)).

7.4.3. Decorative Typefaces in Turkish Texts in Duisburg-Marxloh

Comparing the northern and southern neighbourhoods an extraordinarily high number of decorative typefaces in Turkish language texts in the Weseler Straße of Duisburg-Marxloh emerged from the data. Checking again all the decorative typefaces in the data set it becomes apparent that most of the ones in Turkish language texts in Duisburg-Marxloh are unique; they do not exist in any other language or location in our data (Figure 18).

There is a variety of 20th century British and American advertising typefaces, many of them revived for Letraset in the 1960s and 1970s; however, there are also some newer typefaces. A fair number of them have swashes and ornamental elements that could be understood as em-

FIGURE 19. Decorative typefaces in Turkish language texts in signs of wedding dress shops in Duisburg-Marxloh, top left to bottom right: (a) "Topkapı Gelinlik" (Topkapi Wedding Dresses) (Typeface: *Pretorian* (Letraset 1978: 87)), (b) "Stil" (Typeface: *Arnold Böcklin* (Letraset 1978: 16)), (c) "Bayar" (Typeface: *Roberta*), (d) "Milano" (Typeface: *Revue* (Letraset 1978: 90)), (e) "Dikelim" (Typeface: *Arrus*), (f) "Gelinlik & Abiye" (Wedding and Evening Dresses) (Typeface: *Titania*, Hass, 1906) (cf. `https://fontsinuse.com/typefaces/70908/titania-haas` (retrieved 30.09.20)), (g) "Braut Karakaşlar" (Typeface: *Tango* (Letraset 1978: 154)), (h) "Tesettür Giyim" (Body-covering clothing) (Typeface: *Harlow* (Letraset 1978: 129)), (i) "Gelinlik/Brautmoden" (Typeface: *Horizon*, based on the Star Trek Logo 1966) (cf. Yves Peters: Typography – The Final Frontier. The Fonts of Star Trek. Link: `https://www.fontshop.com/content/the-typography-of-star-trek` (retrieved 30.09.20)).

ulating something of a calligraphic tradition (reminiscent of Turkey's script reform from Arabic to Latin in 1928), but mainly they look ornamental in the style that was popular in the 1960/1970s. The question is: What is the correlation between the highest number of Turkish language texts and the highest number of decorative typefaces in this part of town?

The Miracle of Marxloh

The decorative typefaces are applied in different shops such as bakeries, cafes, and hairdressers. However, most of them are used in signs of wedding dress shops (Figure 19). To contextualise this, it is worth considering the history of the bridal gown industry in Duisburg-Marxloh: When the coal mines and steelworks started closing in the 1970s, the district was affected by major structural changes for the years to come. To escape from misery, the community invented a new industry, which is wedding dress tailoring. There are 25 wedding dress shops and about 27 adjunct business (without gastronomy) such as bakeries, hairdressers, photo studios, and invitation card printers on the intersection of Weseler Straße, Kaiser-Friedrich-Straße and Kaiser-Wilhelm-Straße with customers coming from all over Europe (cf. Gorres, Sucato, and Yıldırım, 2010, p. 246).

The Typefaces

Looking at the typefaces, it occurs that some of them have been used widely in famous 1960s and 1970s Turkish movie posters.[12] Let us have a closer look at the typefaces used in the bridal fashion shops and their use in film posters in the four following examples.

Pretorian

The wedding dress shop "Topkapı Gelinlik" on the Weseler Straße in Duisburg-Marxloh (Figure 20) uses the typeface *Pretorian* horizontally in the words "KUYUMCU," "TOPKAPI," "GELİNLİK" as well as vertically framing the door in the words "JUWELIER" and "ABENDKLEIDER". (The shop name "Topkapı Gelinlik" at the top is set in *Cooper Black*.) *Pretorian* is an early 20th-century British typeface, released by the foundry P.M. Shanks and Sons, Ltd., The Patent Type Foundry in London, and received by Letraset as rub-down type in 1976[13] ("Letraset Katalog" 1978, p. 87). *Pretorian* is used multiple times[14] for the title designs in movie posters such as *Sultan Gelin (The Sultan's Bride)* 1973, *Ölmeyen Şarkı (The song that does not die)* 1977, *Kibar Feyzo (Gentle Feyzo)* 1978 or *Aşkın Gözyaşı (Tears of Love)* 1979.

Arnold Böcklin

The wedding dress shop "Stil" (Figure 21) uses the art nouveau typeface *Arnold Böcklin*. It is named after the Swiss artist Arnold Böcklin

12. Many thanks to Gülşah Edis Kış for the reference to film posters and the fruitful discussions on the use of typefaces in the city of Istanbul.

13. Cf. `https://fontsinuse.com/\index{typeface}typefaces/26150/pretorian` (retrieved 30.09.20).

14. The online archive of the "Center for Turkish Cinema Studies" (`www.tsa.org.tr`) shows 12 movies using *Pretorian* between 1960–1979. (retrieved 30.09.20).

FIGURE 20. Top left to bottom right: "Topkapı Gelinlik" Wedding Dress Shop in Duisburg-Marxloh, Movie Posters: *Sultan Gelin* 1973, *Ölmeyen Şarkı* 1977, *Kibar Feyzo* 1978, *Aşkın Gözyaşı* 1979.

FIGURE 21. Top left to bottom right: "Stil", Movie Posters: *Gülizar* 1972, *Gülizar* 1972 (Detail), *Oğlum Osman* 1973, *Eksik Etek* 1976.

(1827–1901) and was released by the foundry Otto Weisert in Germany in 1904.[15] With its organic and flowery shapes, it had a considerable revival in the 1960s and 1970s and was adopted by many dry-transfer manufacturers such as Letraset ("Letraset Katalog" 1978, p. 16). It appears on multiple Turkish movie posters in the 1970s such as *Gülizar* 1972, *Oğlum Osman (My son Osman)* 1973, and *Eksik Etek (The Missing Skirt)* 1976.

Roberta

A further exceptional Art Nouveau-style typeface is used in the vertical sign of the wedding dress shop "Bayar" on the Weseler Straße in Duisburg-Marxloh (Figure 22). The typeface called *Roberta* is designed by Bob Trogman in 1962/63 and released by the foundry FotoStar in the USA. The letter shapes were either inspired by wood type initials Trogman spotted in a Belgian magazine[16] or a Belgian restaurant sign.[17] *Roberta* is again a popular font in the 1960s and 1970s movie posters, such as *Ezo Gelin (The Bride Ezo)* 1968, *Aşk Sepeti (The Love Basket)* 1972, *Para (Money)* 1972, and *Şaban Oğlu Şaban (Saban the Son of Saban)* 1977.

Revue

Another notable example is the typeface *Revue* designed by Colin Brignall for Letraset England, released in 1968[18] (ibid., p. 90). It appears on a fashion shop for men's evening wear "Milano" (Figure 23) as well as in offer notices on the window panes of bridal fashion shops[19] on the Weseler Straße in Duisburg-Marxloh. *Revue* is also the font used in the title design of a movie titled the *Inatçı Gelin (The Stubborn Bride)* in 1965, and *Mutlu Ol Yeter (Be happy, that is all I want)* 1981.

The Typographic Representation of the Miracle of Duisburg-Marxloh

It appears that the shop owners use these intriguing, lively, and manifold typefaces here to create something particular. Most of these movies that show typefaces also used on signs in wedding dress shops in Duisburg-Marxloh already indicated in their titles that they evolve

15. Cf. `https://fontsinuse.com/\index{typeface}typefaces/1142/arnold-boecklin` (retrieved 30.09.20).

16. Cf. `https://drtype.wordpress.com/2013/05/27/origin-of-roberta-font/` (retrieved 30.09.20)

17. Cf. `http://www.fontbros.com/families/roberta/styles/fancy-caps` (retrieved am 30.09.20).

18. Cf. `https://fontsinuse.com/\index{typeface}typefaces/3485/revue` (retrieved am 30.09.20).

19. Seen on the Weseler Straße in Duisburg-Marxloh at "ag collection" in September 2020.

FIGURE 22. Top left to bottom right: "Bayar" Wedding Dress Shop in Duisburg-Marxloh, Movie Posters: *Ezo Gelin* 1968, *Ezo Gelin* 1968 (Detail), *Aşk Sepeti* 1972, *Para* 1972, *Şaban Oğlu Şaban* 1977.

around love and lovers overcoming all kinds of obstacles. Like most romantic comedies particularly in that period, they are concerned with "finding the one" and ultimately marriage (*Ölmeyen Şarkı* 1977, *Eksik Etek* 1976, *Aşk Sepeti* 1972, *İnatçı Gelin* 1965). They are also concerned with the search for happiness by leaving the countryside and moving to big cities (*Aşkın Gözyaşı* 1979, *Kibar Feyzo* 1978, *Mutlu Ol Yeter* 1981)—i.e., the dream of escaping from poverty. Furthermore, some films address the situation of Turkish labour migrants in Germany, the travelling back and forth between Turkey and Germany, the contact with German culture, Turkish-German love relationships, and the migrant work experience in Germany (*Oğlum Osman* 1973) as well as the challenges between young lovers, one of whom grew up in Europe and the other in Turkey (*Gülizar* 1972).

These typeface choices appear like a typographic representation of the miracle of Duisburg-Marxloh. They imply a specific historical, geographical, and contextual reference and are characterised by an interesting play with traditions. The typefaces combine connotations to hopes and dreams on multiple levels: The wonderous saving of Marxloh by inventing a new branch of industry, the dream of a fairy tale wedding that brides, grooms, and their family entourages might have, whilst shopping for evening attire for weddings, and the stories that are told in these movies, of love, of transcending into other spaces and, at times, of being

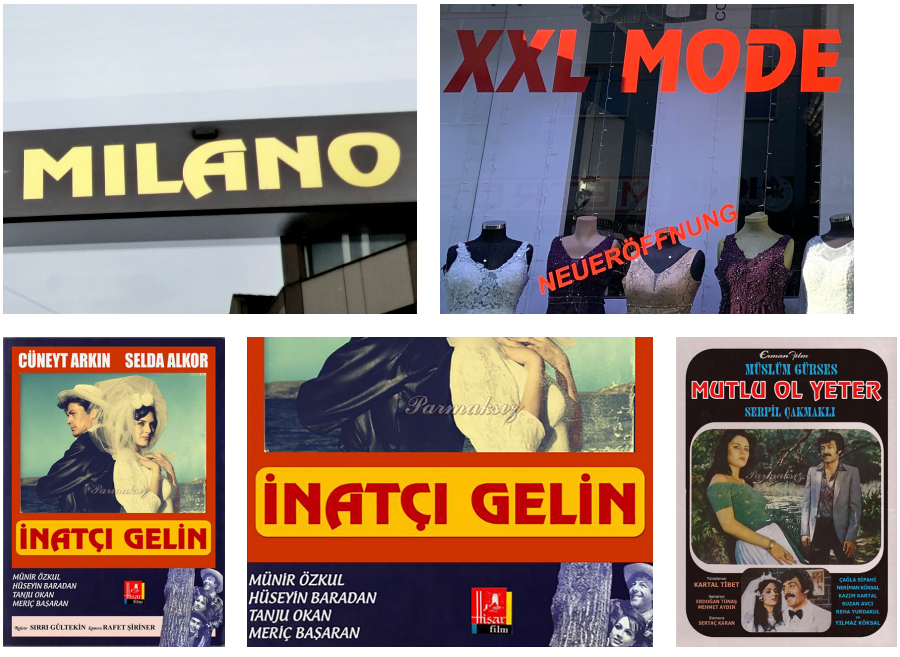


FIGURE 23. Top left to bottom right: Fashion shop for men's evening wear "Milano" and offer notice on bridal fashion shop "ag collection", Movie Posters: *Inatçı Gelin* 1965, *Inatçı Gelin* 1965 (Detail), *Mutlu Ol Yeter* 1981.

liberated from poverty. These hopes are resonating through the streets of a migrant community in Duisburg-Marxloh by means of the shapes of these letters.

To deepen and continue this research, some of the key questions should be: What is the signs producers' perspective, their motivations and communicative goals? To what extent are these typeface choices the result of a conscious decision? Do the shop owners explicitly and consciously make references to movies from the 1970s, or is it more a matter of a subconscious favouring of popular and iconic lettering of a specific time and place? To what extent are graphic designers or sign manufacturers involved in recommending typefaces and how consciously (concerning the history of the use of the typeface) are they making these recommendations? Are there any technical reasons for recommending certain typefaces over others (such as availability, software, production techniques)? These questions can only be answered in interviews with shop owners and sign producers (which will be the next step in my doctoral research).

8. Results: Shop Types

This case study focusses on the typographic genre indication through graphetic resources in different shop types in the Ruhr area. The objective is to identify how retail shops that offer various products and services differ in their typographic visual appearance to create distinction and recognition. It is assumed that different sectors use varying graphic resources in order to achieve their communicative objectives and indicate genres, and that typifications occur within certain groups.

The 12,556 commercial signs in the data set identify 711 individual shops. They form 30 shop types (e.g., jewellers, hairdressers, bakeries, dry cleaners, gambling halls) that are categorised into five topical clusters ((1) Retail Shops, (2) Beauty Services, (3) Grocery Shops, (4) Repair and Cleaning Services, (4) Entertainment Venues). The shops' graphetic characteristics are analysed in a detailed visual analysis on imageboards (Figures 24 and 25) of two shop types in each cluster with a minimum of 20 individual shops per type (35–75 images per shop type). The imageboard analysis focusses on the grouping and measuring of the occurrences of shop names, type styles, image motives, colour palettes, materials, and sign types.

FIGURE 24. Imageboard (sample slide) from the visual data analysis on type styles used in jewellery shop signs in the *Signs of the Metropolis* data.

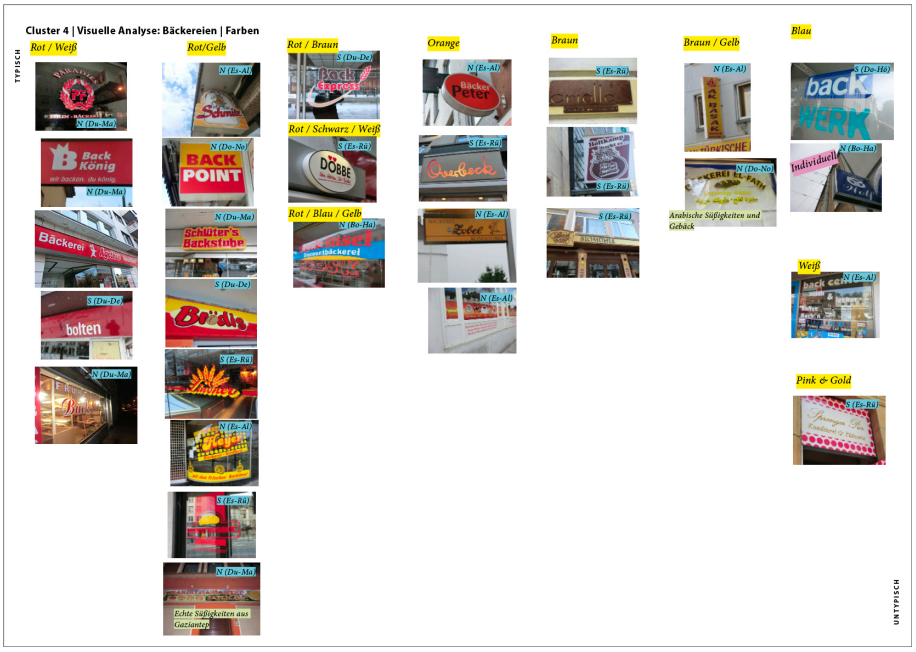


FIGURE 25. Imageboard (sample slide) from the visual data analysis on colours used in bakery signs in the *Signs of the Metropolis* data.

8.1. Heterogeneous Forms

The analysis reveals that some shop types show very diverse, heterogeneous visual strategies and hence cannot be differentiated by their graphetic characteristics alone. In contrast, others do show prevalent occurrences of typical visual characteristics which allow presuming that graphetic characteristics visually indicate certain shop types in urban space.

Shops that exist in high numbers in our data and appear to be the most diverse and heterogeneous in their visual strategies in the Ruhr area are 73 hairdressers, 114 fashion shops, and 28 grocery shops (Figure 26). They use a wide range of colours, sign types, and typefaces. Fashion shops use *Comic Sans* as well as gothic letter shapes and everything in between without a significant repeated occurrence of particular type styles. Hairdressers and grocery shops show equally versatile and colourful visual strategies.

FIGURE 26. Hairdressers, fashion shops, and grocery shops are three shop types that show very heterogeneous visual strategies in the *Signs of the Metropolis* data.

8.2. Homogeneous Forms

Other shop types, however, show prevalent occurrences of typical visual characteristics, such as 24 jewellery shops, 30 bakeries, and 21 gambling halls (Figure 27). The following is a brief description of the three shop types.

Of the 24 jewellery shops, 56% use a serif typeface in their central shop sign. Contrary to the dominance of sans serif typefaces across all discourse types in our data set, it is impressive how united the group of jewellers are in the prevalent use of serif typefaces in this context of valuable and expensive goods. This result coincides with the high use of serif typefaces in the study of jewellers' shops in Antwerp Belgium by Pescatore Frisk and Pauwels (2019, p. 12). To this very day serif typefaces still refer

FIGURE 27. Jewellers, bakeries, and gambling halls are three shop types that show more homogeneous visual strategies with prevalent occurrences of typical visual characteristics in the *Signs of the Metropolis* data.

to value, authority, power, and status (cf. Walker, 2014, p. 44), hinting at their origin and historical contexts of use as capital inscriptions (*Capitals Monumentalis*) in ancient Rome (cf. Sutton and Bartram, 1988, p. 5f). Letterforms carry connotations that convey their places and times of origin as well as early contexts of use. The communication of value and luxury in the visual design of jewellery shops is not only generated by the type styles alone but co-occur with the 48% use of the colour gold in the letters and by valuably and individually crafted luminous relief letters in 30% of the shops. 56% of the jewellery shops use no images.

Of 30 bakeries, 40% use a scriptural font in their central shop sign. Scriptural typefaces reference the movement of the human writing hand in the letterforms and thereby appear handmade, trustworthy, personal,

and tangible (cf. Brumberger, 2003, p. 210): Attributes that one equally wishes from a homemade breakfast roll. 87% of the bakeries use a combination of warm colours such as red, yellow, orange, and brown that can be linked to associations of heat, baking, oven, and bread. 75% of the bakeries show pictures like ears of corn, pretzels, and bread loaves. 87% use adhesive foils and lightboxes on their shops. It is apparent from our data that there is a prototypical visuality in bakeries in the urban space of the Ruhr area with multiple combinations of the most common graphic parameters in many shops. A scriptural typeface in red and yellow with picture elements such as ears, windmills, and pretzels on lightboxes and adhesive foils, should be a fairly reliable indicator for the nearest bakery for passers-by in the Ruhr Metropolis.

Of 21 gambling halls, 60% use a serif, a slab serif, or a decorative typeface in their central shop sign, 40% make a reference to American show typefaces, as used in the gamblers' paradise Las Vegas. There are serif typefaces (top image) whose outlines emulate glowing neon signs next to a photo of the waving cowboy, a landmark neon sign that is placed in front of the *Pioneer Club* in Las Vegas. There is a visual representation of marquee lettering[20] (central image) above a silhouette of the Las Vegas welcome sign.[21] And there are decorative serif typefaces (bottom image), which are reminiscent of 19th-century American wood type with Tuscan-styled serifs in the centre and lower part of the letters (Kelly, 2010, p. 87f). 50% of the signs are very colourful, showing more than three colours. Over 50% of the signs show pictures of, for instance, playing cards, dice, roulette tables, bills, and coins. The most common sign types are adhesive foils, cantilevers, and lightboxes. The styles, shapes, visual treatments and arrangements of the letters, the emulations of sign types as well as the colours and images are forming a genre by which this group of communicative actors repeatedly and unambiguously references gambling and, in particular, the geographic location of Las Vegas, without, however, mentioning the city's name.

8.3. Interim Conclusion: Shop Types

The results show that the shop types that use the most diverse strategies are in tendency the ones with the highest occurrences in numbers in our data: 73 hairdressers und 114 fashion shops. Using similar visual strategies appears to be regarded as beneficial solely to merchants and providers of similar products and services when the relative frequency

20. Cf. https://www.neonmuseum.org/the-collection/north-gallery) (eingesehen am 30.09.20).

21. Cf. https://www.rd.com/advice/travel/things-you-never-knew-about-the-las-vegas-sign/ (eingesehen am 30.09.20).

of this kind of shops is low, and when they are not in direct visual competition. Otherwise, the differentiation amongst each other seems to override the wish to be distinguishable as a group of dealers with a similar product range. Twelve hairdressers in one street do not want to look alike. In contrast, the only jeweller in one particular street might want to be recognised as the one and only by using all the visual cues typical of the genre in a most deliberate way.

Those shops which are fewer in numbers—such as the 24 jewellery shops, 30 bakeries, and 21 gambling halls—predominantly prefer a range of prototypical combinations of typographic means to communicate who they are and what they are selling. This indicates that graphetic resources can be central to the contextualisation, positioning and recognisability of communicative actors in urban space. Choices on type styles, colours, images, and sign types create genres in build-up environments, enable sign producers to achieve their communicative goals by reaching their audience—unless strong direct competition causes the retailer to focus less on the thematic genre and more on outdoing the direct visual competitors. Furthermore, if not in the immediate vicinity, it can be assumed that the formation of visual clusters between shop types and the repeated use of certain graphic resources lead to visual patterns that form perceptual expectations and graphic knowledge, with the effect of providing orientation to sign recipients.

9. Conclusion

This paper develops a framework of eleven parameters for the analysis of typographic artefacts in urban spaces in order to investigate how discourse types, genres, and text functions differ in their graphic appearance. The eleven parameters are (1) the geographical location of the sign in the city, (2) the discourse type of the message, (3) the languages used, (4) the script systems used, (5) the type styles used, (6) the size and positioning of the sign, (7) the colours used, (8) the materials used, (9) the sign types such as lightbox, adhesive foil, or stone engraving, (10) the integration into the architectural context and mounting height, and (11) the graphic composition and density of the visual surface.

In conclusion, the analysis of the discourse types based on the eleven parameters shows that each discourse type (regulatory, infrastructural, commercial, transgressive, and commemorative) is characterised by different accents and unique combinations with respect to the use of graphic resources. Four out of five discourse types mainly use various materials to realise their messages: Regulatory signs use metal; commercial signs use plastic, foil, and paper; transgressive signs use stickers and paint; and commemorative signs use a lot of iron, cast metal, and stone. Regulatory and infrastructural signs show sans serif typefaces in

98% of the cases, whereas commercial and transgressive signs show (up to almost 20%) serif, script, and decorative typefaces. Thus, it can be stated that, in our data, core materials, and prototypical combinations of typographic resources point, in some way or another, to discourses in urban space. Thereby the signs indicate the type of information passers-by are encountering. It can be argued that these usual contexts of use create reception patterns (cf. Spitzmüller, 2013, p. 241) and that the recurring combinations of graphic resources provide sign recipients with a frame of orientation (cf. Hanks, 1987, p. 681) in urban space.

The comparison of the northern and southern neighbourhoods reveals the indication of social spaces, for example, in the very uneven distribution of script systems: 92.72% of the Arabic scripts in the North and 77.9% of the Hànzì, Kanji/Hiragana/Katakana, and Hangul in the South of the Ruhr Metropolis. Furthermore, the data analysis shows that the North is graphically as colourful as its population structure is diverse. For instance, the use of type styles is more diversified in the North than in the South; particularly, in the predominant discourse type, the commercial signs, which are characterised by more serif and decorative typefaces. Moreover, the North shows higher occurrences in 11 out of 14 colours in commercial signs. Thus, a more diverse residential structure seems to be connected to a broader range of visual strategies. All in all, cultural and linguistic diversity becomes apparent as being linked to visual and typographic plurality.

A closer look at the outstanding results in the Duisburg-Marxloh district, where most non-German and Turkish texts, as well as the largest group of decorative typefaces, were found, reveals a meaningful relationship of these results in the typographic design of wedding dress shops, using typefaces that played a significant role on 1960s/70s movie posters. These processes relating to visual identity creation in making typographic connections to other places, previous times, and contexts of meaning (cf. Briggs and Bauman, 1992, p. 147) are worth a further in-depth exploration.

The analysis of the (typo)graphic appearance of 711 shops grouped in 30 shop types selling various products and services in five topical clusters ((1) Retail Shops, (2) Beauty Services, (3) Grocery Shops, (4) Repair and Cleaning Services, (4) Entertainment Venues) shows that the abundant and ubiquitous shops use very diverse, heterogeneous visual strategies and cannot be differentiated by their graphetic characteristics. In contrast, some of the smaller groups clearly show prevalent occurrences of typical visual characteristics, which means their typographic outfit indicates who they are and what they are selling.

The shop types with the most diverse strategies are the ones with the highest numbers of shops (hairdressers and fashion shops), which indicates that using similar visual strategies appears only beneficial when the relative frequency of a shop type is low. Otherwise, the differentia-

tion amongst each other seems to override the wish to be distinguishable as a group of dealers with a similar product range. Eight fashion shops in one street do not want to look alike. In contrast, one gambling hall in one street wants to be recognised as such by using all the visual cues typical of the genre in a deliberate way.

In the less ubiquitous shops, such as the jewellery shops, bakeries, and gambling halls, recurring combinations of genre-specific graphetic resources indicate the respective communicative actors and product sectors. As far as these shops are concerned, the typographic decisions that shop owners make can be taken, to a considerable extent, as a clue to who they are and what they are offering. This proves that typographic and graphic decisions in urban space have a unique ability to visually indicate communicative actors, point out and (re)create genres as well as to distinguish between traders and product groups.

Overall, this study shows that the form and materiality of written language are related to its communicative meaning and significance. Typographic decisions in urban spaces form visual patterns that offer orientation to potential sign recipients. The analysis of the graphetic resources used in cityscapes indicates communicative actors and socio-spatial structures since references to meaning travel with letterforms through times and places. This enables sign producers to use typographic resources to point to current and past contexts of use and create connotative spaces of significance.

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Appendix: Picture IDs in the Database

Figure 1. Picture IDs top left to bottom right: 5499, 13635, IMG_3711, 21843, 258, 1563, 0330, 9094, 1964. The top right image was taken by the author in a subsequent data collection 2019 in Essen-Rüttenscheid.

Figure 5. Picture IDs 12230, 20529, 17703, 19312, 1676.

Figure 6. Picture IDs 12230, 20529, 17703, 19312, 1676.

Figure 7. Picture IDs top left to bottom right: 319, 5404, 9745, 5121, 12230, 4361, 4476, 28486, 20817.

Figure 8. Picture IDs top left to bottom right: 5005, 423, 1316, 1198, 20529, 5506, 1215, 25148, 11951.

Figure 9. Picture IDs top left to bottom right: IMG_3709, 11259, 25234, 3586, 354, 4086, 19526, 25460, 26867. The top left image was subsequently collected by the author in 2019 in the Essen-Rüttenscheid collection area.

Figure 10. Picture IDs top left to bottom right: IMG_3574, 8175, 12698, 7905, 5830, 8892, 5717, 12282, 610. The top left image was subsequently collected by the author in 2019 in the Essen-Rüttenscheid collection area.

Figure 11. Picture IDs top left to bottom right: 1676, 4187, 9688, 26138, 11361, 17243, 2658, 15036, 14701.

Figure 16. Picture IDs top left to bottom right: 4089, 18108, 16751, 2197, 25351, 25384, 25005, 23961.

Figure 17. Picture IDs top left to bottom right: 4138, 16805, 16495, 16758, 24069, 26479, 26429, 24081.

Figure 18. Picture IDs top left to bottom right: (a) Hairdresser (16081), (b) Cafe (16152), (c) Restaurant (16797/IMG_0195), (d) Cafe (16725/IMG_0210), (e) Bakery (17078), (f) Music school (16062).

Figure 19. Picture IDs top left to bottom right: (a) “Topkapı Gelinlik” (16895), (b) “Stil” (16570), (c) “Bayar” (Bayar_Roberta_GSV_2008) (The photo of the shop sign “Bayar” in Weseler Straße 30, Duisburg-Marxloh was overlooked in the data collection 2013/14 and taken from the Google Street View recorded in September 2008.), (d) “Milano” (16555), (e) “Dikelim” (IMG_0315) (The photo of the shop “Podium” (Dikelim) in Duisburg-Marxloh was subsequently collected in 2020.), (f) “Gelinlik & Abiye” (16768/IMG_0282), (g) “Braut Karakaşlar” (IMG_0154) (The photo of the shop sign “Braut Karakaşlar” in Weseler Straße 42, Duisburg-Marxloh was subsequently collected in 2020 as it was overlooked in the data collection 2013/2014. However, it already existed in 2013/2014.), (h) “Tesettür Giyim” (16577), (i) “Gelinlik/Brautmoden” (16434).

Figure 20. Picture ID top left: “Topkapı Gelinlik” Wedding Dress Shop in Duisburg-Marxloh (16895, 16895_Detail). All movie poster images are retrieved from the online archive of the “Center for Turkish Cinema Studies” (www.tsa.org.tr) on 30.09.20.

Figure 21. Picture ID top left: “Stil” (Picture ID 16570, Stil_ArnoldBoecklin_GSV_2008) (The photo of the shop sign “Stil” in Weseler Straße, Duisburg-Marxloh on the facade above the cloth awning was overlooked in the data collection 2013/14 and taken from Google Street View recorded in September 2008.) All movie poster images are retrieved from the online archive of the “Center for Turkish Cinema Studies” (www.tsa.org.tr) on 30.09.20.

Figure 22. Picture IDs top left to bottom right: “Bayar” (Bayar_Roberta_GSV_2008). The photo of the shop sign “Bayar” in Weseler Straße, Duisburg-Marxloh was overlooked in the data collection 2013/14 and taken from Google Street View recorded in September 2008. All movie poster images are retrieved from the online archive of the “Center for Turkish Cinema Studies” (www.tsa.org.tr) on 30.09.20.

Figure 23. Picture IDs top left to bottom right: “Milano” (Picture ID 16555), “ag collection” (IMG_0181) (seen on the Weseler Straße in Duisburg-Marxloh in September 2020). All movie poster images are retrieved from the online archive of the “Center for Turkish Cinema Studies” (www.tsa.org.tr) on September 30, 2020.

Figure 26. Picture IDs top to bottom: Hairdressers (16673, 4763, 17713), fashion shops (14515, 19913, 26429), grocery stores (13913, 16751, 19526).

Figure 27. Picture IDs top to bottom: Jewellers (24017, 16421, 4034), bakeries (25544, 5553, 17533), gambling halls (1083, 1085, 26867).