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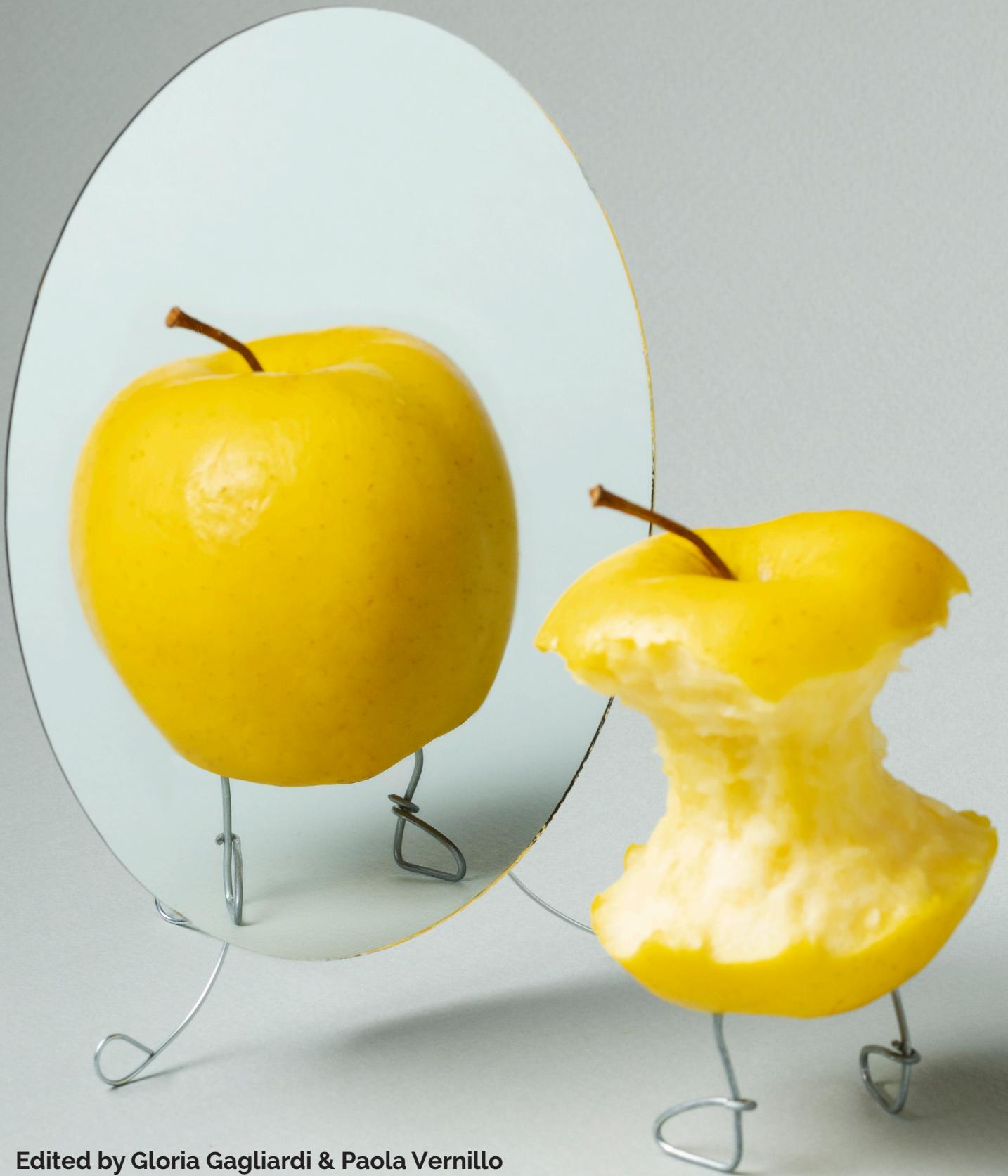
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# IPAN

Interdisciplinary Perspectives on Anorexia Nervosa

## Book of Abstracts



**Edited by Gloria Gagliardi & Paola Vernillo**  
Dept. Of Classical Philology and Italian Studies  
University of Bologna

Bologna, Italy | May 26, 2023

## **Book of Abstracts**

IPAN Conference

Interdisciplinary Perspectives on Anorexia Nervosa

Editors:

Gloria Gagliardi

Paola Vernillo

### Acknowledgments:

The conference has received financial support from the Department of Classical Philology and Italian Studies – University of Bologna and the RaAM Association (Researching and Applying Metaphor).



ALMA MATER STUDIORUM  
UNIVERSITÀ DI BOLOGNA  
DIPARTIMENTO DI FILOLOGIA CLASSICA  
E ITALIANISTICA

**RaAM**  
Researching & Applying Metaphor

## **FOREWORD**

IPAN (Interdisciplinary Perspectives on Anorexia Nervosa) is a one-day conference that will be hosted on May 26, 2023, by the Department of Classical Philology and Italian Study - University of Bologna (Italy), in collaboration with RaAM (Association for Researching and Applying Metaphors). The conference aims at fostering multidisciplinary exchange about research on anorexia nervosa (AN) and, more in general, on eating disorders (ED).

AN is a psychopathological gendered disorder characterized by disturbance in eating behavior, which manifests with dysfunctional routines, such as food deprivation, obsessive weight control, and compulsive physical exercise. Beyond the disordered eating behaviors, AN appears to be also characterized by inflexible thinking, rigid habits, disconnection from bodily experience, strong sensitivity to praise, anxiety, and perfectionism.

Interestingly, from a very linguistic point of view, evidence of the linguistic changes characterizing patients with eating disorders seems to be less clear and the overall picture more blurred.

In the last decade, a growing body of linguistic studies has been devoted to the investigation of linguistic changes in various clinical conditions. Yet only a limited number of works have been specifically conducted on the linguistic profile of patients with ED, and an even smaller number has specifically focused on AN. Today, not only many issues are still unsolved, but also several linguistic aspects of AN happen to be unexplored territory.

IPAN builds on this awareness. We believe, in fact, that this conference is an excellent opportunity to present and discuss ongoing research on AN/ED, both from theoretical and experimental viewpoints. It brings together experts, scholars, and students from different backgrounds and provides an invaluable environment for dialogue and integration. The conference collects contributions from all fields related to the study of AN/ED, including (but not limited to) Linguistics, Psychology, and Neuropsychiatry. The main topics of interest are the following:

- Linguistic profile of AN: morphosyntactic and lexical markers
- Conceptual representation of AN: abstraction deficits and concretism
- Relationship between altered body image and disordered eating
- NLP detection of online pro-ana and pro-mia communities
- NLP and altered linguistic patterns in AN
- Representation of ED in social media
- Analysis of voice disturbance in patients with ED

Even being only at its first edition, IPAN will welcome 17 presenters (3 keynotes, 6 oral presentations, and 8 posters) from 7 countries and 3 continents. We sincerely thank our keynote speakers and all the authors who contributed with their expertise, research, and ideas to the success of the event. We also thank the members of the

Scientific Committee, and the students from the Experimental Linguistics Lab (LLiS “R. Carati”), who helped with the organization of the conference. We are grateful to the Department of Classical Philology and Italian Study (University of Bologna) and RaAM association for their financial support (RaAM Research Grant 2022). We want to acknowledge Agenzia Comunicamente that helped us solve all the technical issues and provided continuous assistance throughout the event. Finally, we want to extend our thanks to all the participants in the conference (online and in person). We hope all of you can find this volume stimulating and inspirational.

Yours sincerely,

Gloria Gagliardi and Paola Vernillo  
*(on behalf of the Organizing Committee)*

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*KEYNOTE SPEAKERS*



## Massimo Cuzzolaro

### *Biosketch*

Massimo Cuzzolaro, psychiatrist, headed an outpatient clinic for eating disorders and obesity at the Department of Medical Pathophysiology at Policlinico Umberto I - Sapienza University of Roma until his retirement.

For over thirty years he taught Psychiatry and Clinical Psychology at the University of Roma Sapienza. He currently teaches as an adjunct professor in university Master's programs (Sapienza-Unitelma) and CME courses.

He was among the founders of the "Italian Society for the Study of Eating Disorders" (SISDCA) and served as its president.

He has conducted research in various areas of psychiatry and clinical psychology, documented by more than 350 scientific publications, including 12 books. He founded and edited for 25 years the journal "Eating and Weight Disorders" (Springer Nature).

## ANOREXIA NERVOSA AS A COUNTER-METAMORPHOSIS

Four lines of force act, with mutually conflicting directions, on contemporary human beings' relationship with food and body appearance:

- The overabundant supply of hyper-processed, ready-to-eat, calorie-dense, and highly palatable food
- The reduction of physical fatigue and energy expenditure to work and live
- The social and internalized stigma of obesity with an idealization of lean, muscular bodies
- Dietary healthism that goes as far as the drifts of orthorexia nervosa

As a result, worldwide, the prevalence of obesity and so-called feeding and eating disorders has increased to a pandemic extent [Etilé & Oberlander, 2019; van Eeden, van Hoeken & Hoek, 2021; Hay *et al.*, 2023].

Current cases of anorexia nervosa are set against this background and are affected by the digital age in which we have been immersed for about three decades.

However, anorexia nervosa cannot be considered a simple effect of contemporary times. Over three hundred years until the most recent taxonomies [APA, 2022; WHO, 2022] it has received different names, but the symptomatic uniform has remained basically the same.

Only one striking difference: in all the cases described until the late nineteenth century, a body image disturbance was missing.

But body image is an essentially metaphorical umbrella expression [Cuzzolaro, 2018]. Could we claim with certainty that some suffering related to body experience was absent in those ancient cases and is absent in the contemporary ones we call

avoidant restricted food intake disorder or non-fat-phobic anorexia nervosa [Manzato, Cuzzolaro & Donini, 2022]?

In fact, in the pathogenesis of anorexia nervosa, puberty plays an essential role. And this has always been true. The patients described by Morton [1694], Gull [1874], Lasègue [1873], etc. were always adolescents or young adults.

I intend to argue that the body occupies a central place in the adolescent process [Cuzzolaro & Fassino, 2018; Perret-Catipovic & Ladame, 1997; Marty, 2010]. The transformation of a child's body into that of an adult is a potentially traumatic experience. If a concurrence of bio-psycho-social factors hinders the integration of the changes initiated by puberty, at the conscious and, above all, unconscious level, the abilities to relate to self and others falter. It becomes fatal to resort to a variety of psychopathological symptoms, which function as anti-economic defenses to one's emotional equilibrium and sense of personal identity and worth [Roussillon, 2018; Richard, 2010].

In the case of anorexia nervosa, the symptoms impose a veritable counter-metamorphosis on the body, which contrasts the pubertal metamorphosis experienced as catastrophic, sets up a system of obsessive control directed at restoring a childhood psychosomatic state at the level of weight, hormones, drives, and place in the world.

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## Laura A. Cariola

### *Biosketch*

Laura A. Cariola is Lecturer in Applied Psychology at the School of Health in Social Science at the University of Edinburgh. She studied Applied Linguistics and Psychology. She is a chartered member of the British Psychological Society, Division of Academics, Researchers and Teachers in Psychology, and a member of the Division of Counselling Psychology.

Her research focuses on the intersection of language, discourse and mental health using both linguistic and psychological approaches to explore the language of individuals affected by mental health problems and the presentation of mental health in the media. She is the author of the recently published edited volume "Eating Disorders in Public Discourse: Exploring Media Representations and Lived Experiences" (University of Exeter Press).

## **EXPERIENCING NEWSPAPER REPRESENTATIONS OF EATING DISORDERS: AN INTERPRETATIVE PHENOMENOLOGICAL STUDY**

Eating disorders (EDs) are prevalent but not well-understood mental health disorders. Although there has been increased concern for how newspaper reporting on EDs impacts public misunderstanding, leading to stigmatizing and discriminatory attitudes towards those affected [O'Hara & Clegg Smith, 2007], the impact of these discourses on the individuals affected has been largely neglected. While newspaper representations of EDs have received some scholarly attention, little is known about how individuals diagnosed with an ED make sense of these representations and any impacts on their lived experience. This study employed Interpretative Phenomenological Analysis (IPA) [Smith, Flowers & Larkin, 2009] to understand the personal lifeworlds of individuals affected by EDs, in particular, how they make sense of newspaper representations. In total, five participants who self-identified as suffering or recovering from anorexia nervosa voluntarily participated in the study. They were four women and one man, ranging in age from 21 to 40 years, all of white ethnicity. The analysis identified five superordinate themes that described how individuals affected by an ED make sense of newspaper representations in relation to their lived experience: (1) reification of the ED identity, (2) loneliness and incommunicado, (3) misunderstood by significant others, (4) never feeling sufficient and (5) perverse and exacerbating medicalization. Participants perceived that newspaper representations reinforced cultural myths around those affected in several ways. For example, newspapers sensationalized eating difficulties, recycling clichés and oversimplified narratives that focused predominantly on physical appearance and white young women. These narratives were reinforced by imagery that reduced EDs to a single dimension, including weight loss. Participants experienced that simplistic beliefs and over-generalized

assumptions did not permit a communicative space with others to share their actual experience, leading to a sense of loneliness from family, friends, medical professionals and other significant people. Their experience of EDs was not only incomunicable, but unintelligible even to close family and friends. Some participants reflected a competitiveness to embody and to conform to the 'ED identity', meanwhile experiencing anxiety deviating from or failing to achieve the stereotype. The findings in this study identified a dynamic between newspaper and medical discourses that works to reinforce public misperceptions and a lack of information about EDs. A need for authenticity and voice emerged as a strong theme. The findings inform recommendations for ethical reporting on ED in public discourse.

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## Serena Mazzini

### *Biosketch*

Serena Mazzini is a social media strategist with 8 years of freelancing experience in large agencies (among others, Publicis Sapient, Bcube, Wavemaker, Leo Burnett). She is a contributor to “Domani Editoriale” and, during the 2021-2022 season, she appeared every Tuesday as a regular guest on “Le Mattine” on Radio Capitale. She also co-authored the podcast “Il Sottosopra”, a Chora Media production, in collaboration with Selvaggia Lucarelli. Since March 2023, she teaches in the bachelor's degree program in Graphic Design at NABA. Serena Mazzini, who is known as @serenadoe\_ on Instagram, uses social media platforms to analyze the dark side of social networks.

## **ANOREXIA NERVOSA IN THE TIKTOK ERA: WHEN THE DISEASE BECOMES A REALITY SHOW**

There is a rather worrying phenomenon that is gaining ground especially on TikTok, where very young girls open recovery profiles, i.e. dedicated to their own path in the battle against eating disorders, transforming the disease into a sort of reality show in which they tend to romanticize their own pathology.

Thus hospitalization, tube feeding or the use of psychotropic drugs become potentially viral content, which is subject to precise rules: trendy music and gestures, the use of specific hashtags, live broadcasts while eating or crying, often using filters to make faces that are already visibly worn and sick even more hollowed out, they are all pieces to win the approval of an ever wider audience, who watches them fall deeper and deeper day after day, as if they were Alfredino Rampi falls into a well to be followed 24/24.

It is precisely this visibility that embeds them in a character that makes them increasingly recognizable, like a product on a supermarket shelf: there is Leila with her hat and pigtails, Eugenia Cooney with her colorful dresses and Maya, with her nails long and well-groomed and the tube covering her face.

The link between the web and the DCA is certainly not new: pro anorexia or bulimia blogs, telegram groups or blogs have been the starting point for many young people who were looking for support and tricks to indulge their ailments through communities of sick people who encourage each other through direct comparison. Frequently, in fact, those who participate in these mutual aid groups must submit to precise rules, such as sharing their weight and what they eat every day, what calorie deficit they manage to reach, how vomiting is induced.

Social networks have speeded up and amplified these processes, giving people suffering from DCA the opportunity to use them as a showcase in which to look at

themselves, confirming the alteration of the bodily perception they suffer from, feeding it with attention, likes and comments, continuously reinforcing the idea that if they are sick, they can continue to be the center of attention.

Thus, in a world where everything is a content, even illness becomes an excuse to show off.



*ORAL PRESENTATIONS*



## THE VOICE IN ANOREXIA. A MULTIPARAMETRIC ANALYSIS OF THE VOICE OF CHILDREN AND ADOLESCENTS WITH ANOREXIA NERVOSA

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**Background:** Anorexia Nervosa (AN) is an eating disorder (ED) that involves restricting energy intake, leading to a low body weight, and an intense fear of gaining weight or becoming fat, which is often accompanied by behaviors aimed at weight loss and a distorted body image. Despite being linked to both organic and psychopathological factors, few studies have investigated its correlation with voice alterations, such as dysphonia. The purpose of this study is to examine the voices of girls with AN and compare them to a control group.

**Methods:** Case-control study. The voice was studied using Praat software, measuring the Acoustic Voice Quality Index (AVQI), Fundamental Frequency (F0), Yanagihara Spectrographic Classification, GIRBAS perceptual scale and Maximum Phonation Time (MPT). The Vocal Fatigue Index (VFI) and Reflux Symptoms Index (RSI) questionnaires were administered.

**Results:** Fifteen girls with AN and 30 controls matched for age and sex were recruited. VFI showed a significant difference in all three sections (VFI-1,  $p<0.001$ ; VFI-2,  $p=0.002$ ; VFI-3,  $p=0.011$ ), as RSI did ( $p<0.001$ ). Significant scores were obtained for AVQI ( $p<0.001$ ) and spectrographic classification according to Yanagihara ( $p=0.017$ ). The GIRBAS scale showed significant differences at the G, I, R, B scales. The MPT showed significant alterations ( $p=0.028$ ). The difference in Fundamental Frequency was not significant.

**Discussion:** Pathological scores for patients with AN on the first two sections of the VFI suggest conditions of reduced chordal mass, insufficient subglottic pressure or organic vocal cord pathology that reduce mucosal vibration. High scores on the RSI suggest the presence of laringo-pharyngeal reflux (LPRD), responsible for inflammation and oedema of the glottal plane and surrounding area, resulting in reduced chordal motility and predisposition to organic pathology. The GIRBAS scale showed reductions in intensity (I), glottal competence (B) and increased hoarseness (R). Alterations in the AVQI correlate with amplitude and F0 perturbations, caused by organic/functional alterations, which give the voice a distorted quality.

**Conclusions:** This innovative study suggests a positive correlation between AN and voice disorders. It provides a valuable opportunity to investigate the voices of AN

patients using low-cost, non-invasive, and easily reproducible methods. Further research is required.

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**EATING DISORDER SYMPTOMS, COGNITIVE AND WELL-BEING  
DIMENSIONS IN AT-RISK AND CLINICALLY RELEVANT POPULATIONS:  
A NETWORK ANALYSIS COMPARISON STUDY**

Tomei G., Storelli E. & Tomba E.

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*Background:* According to psychological network theory, mental health symptoms are not just the manifest part of a latent disorder, but autonomous entities capable of activating and maintaining other symptoms [Borsboom *et al.*, 2021]. Network psychometrics permits to graphically represent relationships between multiple different constructs. This approach has been enthusiastically adopted to study eating disorders (EDs), due to their heterogeneous presentations, high rates of comorbidity and frequent diagnostic migration [Levinson *et al.*, 2018]. However, so far almost no NA study has studied the characteristics of general at risk of ED presentations, nor compared their clinical profiles against those of a population with clinically relevant eating disorder symptomatology.

*Methods:* General population sample is being recruited online to identify individuals at high risk of ED. Data collected includes sociodemographic, ED symptomatology (EDE-Q) [Calugi *et al.*, 2017], psychological flexibility (AAQ-II) [Pennato *et al.*, 2013], rational and irrational beliefs (ABS-2 SF) [DiGiuseppe *et al.*, 2021] aspects of well-being (MHC-SF) [Petrillo *et al.*, 2014], anxiety, affective symptomatology, and stress (DASS-21) [Bottesi *et al.*, 2015]. Individuals identified with clinically relevant ED symptomatology are instead redirected to local clinical services. Data are being analysed by deriving regularized network models using R's *bootnet* package, to identify which are the key nodes in an at-risk of ED population and in the clinically relevant populations respectively. The *NetworkComparisonTool* R package is then utilized to compare the two networks and detect differences in their structure.

*Results:* Results show higher centrality for negative mood manifestations (strength: 1.5), compromised psychological well-being (strength: 1.1) and chronic stress (strength: 0.8) in the at-risk population. Similarly, clinically relevant sample showed higher centrality for aspects concerning psychological well-being (strength: 1.1), negative mood (strength: 1.0) and chronic stress (strength: 0.8). In both populations, ED cognitive and behavioural symptomatology appears at the network periphery, implying low relevance. Despite the similarities in node centrality, when compared, the two networks showed significant differences in the overall structure ( $M: 0.3, p: 0.05$ ) and in global edge strength ( $S: 0.9, p < .0$ ), with the clinical sample showing higher global edge strength compared to the at-risk population (clinical sample  $S: 5.20$ , at-risk sample  $S: 4.29$ ).

*Conclusion:* It appears that in the prodromal stages of ED, stress and depression have a greater impact on an individual's mental health compared to ED specific symptomatology. Additionally, both clinical and at-risk population show similar nodes centrality, but clinical sample present a more tightly connected network. It

might thus be important to address underlying psychological distress in populations at risk to prevent progressing to the acute stage of the disorder.

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## ASSESSING BODY-RELATED MENTAL IMAGERY IN INDIVIDUALS WITH ANOREXIA NERVOSA AND BULIMIA NERVOSA: A SYSTEMATIC REVIEW

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*Background:* Mental imagery (MI) is the ability to generate and manipulate mental representations of sensory experiences, such as visual, auditory, and kinesthetic experiences. It is a cognitive process that involves simulating movements and sensory experiences related to the body, providing insight into how the brain represents the body and its movements in mental space [Kosslyn, 1978; Auchus *et al.*, 1993]. Individuals with body image disturbances (BID), such as those with Anorexia Nervosa (AN) and Bulimia Nervosa (BN), often demonstrate inaccurate spatial, motor, and metric information of the body in tasks that assess imagined and actual movement [Guardia *et al.*, 2012]. However, the influence of body-based MI on these disturbed representations of body image is not well understood. It is unclear to what extent individuals with BID use MI differently to represent their bodies, compared to individuals without BID. Therefore, this review aims to assess a) how body-related MI has been measured in individuals with AN and BN, and b) how individuals with AN and BN differ on MI tasks compared to healthy controls.

*Method:* The protocol for the review was registered on PROSPERO (CRD42022358412). PsycINFO, PubMed and EMBASE were systematically searched for empirical, quantitative studies looking at measures of visual and spatial body imagery as defined by Kosslyn's four stages of MI (generation, maintenance, inspection, and transformation) [Kosslyn *et al.*, 1996] in individuals with AN and BN. Abstract and Full-text screening was carried out on Covidence. The Newcastle-Ottawa scale was used for quality assessment.

*Results:* The review found 420 studies after duplicates were removed, and 17 studies were included in the data extraction stage after screening. The studies measured body-related MI in individuals with AN and BN, as well as differences in MI ability compared to healthy controls. The MI tasks and modalities tested included Body Scaled Action, Imagined Movement, Mental Rotation, and Spatial Reference Frame. A narrative synthesis evaluating the tasks used and the performance of individuals with and without BIDs is planned for this review and will be completed by April 2022.

*Implications:* This is the first review to systematically conceptualise and understand the role of MI in sustaining body image disturbance in affected individuals. The review can highlight how MI is affected in individuals with AN and BN compared to healthy controls, and can provide a new avenue for addressing, treating, and researching body image distortion in these groups.

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## THE ONLINE EXPERIENCE OF FEEDING AND EATING DISORDERS. A SURVEY ON TIKTOK AND MESSAGING APPS USE AMONG CHILDREN AND ADOLESCENTS REFERRING TO A THIRD-LEVEL CENTER

Visconti C.<sup>1-2</sup>, Pruccoli J.<sup>1-2</sup>, Moriani M.<sup>1-2</sup> & Parmeggiani A.<sup>1-2</sup>

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**Background:** Recent research shows how the Internet, and more specifically Social Media (SM), TikTok, and Messaging Apps (MA) represent teenagers as an important source of information and comparison about Feeding and Eating Disorders (FED). However, the literature investigating the consequences of this phenomenon is still scarce.

**Methods:** In February-March 2023, an anonymous paper survey was conducted in an Italian third-level Regional Center for ED for childhood and adolescence. The use of TikTok, favorite contents, and the correlation between most liked trends and motivation in weight loss or recovery were assessed. The influence of a shared peer experience of the FED on MA was also explored.

**Results:** Seventy-eight patients (91.3% females, mean age 15.3 years  $\pm$  1.7 SD) were enrolled in the study: 89.7% declared to use TikTok, while only 18% of the sample is part of a Group Chat (GC) about FED topics on MA.

Most of the sample (66.7%) follows TikTok stories about FED and 26.9% report creating FED-related stories. Included patients tend to spend from 1 to 3 hours/day on TikTok and its algorithm presents them with the most liked and researched content by the users themselves. A significant correlation between some contents and motivation in weight loss or recovery emerged: patients who more frequently like "What I Eat In A Day" or "Body Transformation" content tend to be more willing to lose weight ( $p=0.012$  and  $p=0.004$ , respectively). Those who frequently appreciate content like "Fear Food Experience" tend to be more motivated in the recovery process ( $p=0.008$ ). The use of TikTok tends to be more passive than active, with 23.0% of patients creating and posting FED content. Among this sample, 16.0% present FED-related content, usually about their FED story.

The need for confrontation (20.0%) and a strong sense of loneliness (33.3%) seem to drive adolescents with FED to look for GC on MA, where they seek diet advice (42.8%) restrictive behaviors (35.7%) or compensation behaviors (21.4%) but also support in recovery (57.1%). Not always the GC represents a safe space: 35.7% of the patients using GC FED-related report being insulted by other GC users because of their weight. Patients still feel significantly more understood ( $p=0.005$ ) by the medical team than GC users.

**Conclusions:** This study documents how the virtual interaction of patients with FED can influence the FED course. Further studies are needed to assess the psychopathological consequences and factors behind this phenomenon.

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**«ALTHOUGH I WAS ALREADY AT THE ABYSS WITH THE EATING  
DISORDER [...], I CAN'T COMPLETELY LET IT GO»  
LEXICAL MARKERS IN GERMAN EATING DISORDER COMMUNICATION  
ON TUMBLR**

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In mid-2022, the Deutsche Allgemeine Krankenkasse (DAK Gesundheit) announces the increase in mental illnesses among children and adolescents in Germany recorded since the beginning of the COVID-19 pandemic. According to the report, adolescent girls in particular suffer from eating disorders: from 2020 to 2021, the number of eating disorder cases among them increased by almost 25 per cent [Pressestelle DAK Gesundheit & Bodanowitz, 2022: 1]. Eating disorders, especially anorexia nervosa, are psychiatric illnesses with the highest mortality rate among adolescents Bundeszentrale für gesundheitliche Aufklärung [BZgA, 2023]. The prevalence of eating disorders thus continues to require dedicated research - and by no means only in clinical psychology. Linguistic studies of online communities with eating disorder-related content can add important aspects to medical research and contribute to innovative research on the mental health of the population [De Choudhury, 2015: 44; Lyons *et al.*, 2006: 254]. That is because like-minded groups of people develop a common communication style [Lyons *et al.*, 2006: 254–255]. Such phenomena are reinforced by peer-group-focused communication in social networks [Lukac, 2011: 188; Wolf *et al.*, 2013: 212]. Through an open communication space on the internet, it is possible for people to talk about topics that are taboo, such as anorexia. These communicative spaces, characterized by anonymity and reduced public self-awareness, lend themselves to the exploration of expressions in the eating disorder context [Joinson, 2001: 185–190]. By analyzing lexical markers, statements of people with eating disorders can be recognized and classified and allow insights into the experience of those affected [Cuteri *et al.*, 2022: 2–3; Minori *et al.*, 2021: 138].

This project examines lexical markers in the vocabulary of people who post about eating disorders (mainly anorexia nervosa) on Tumblr. Tumblr is ideal for this because it is mainly used by younger adults and teenagers (for example, “Gen Z”) (Eira, 2022) and existing eating disorder communities are represented [De Choudhury, 2015: 43–44]. For this purpose, blog posts with the tag “Essstörung” (*eating disorder* in German) were scraped via a Tumblr API and compiled into a corpus. Quantitative and qualitative corpus linguistic methods, partly in Sketch Engine [Kilgarriff *et al.*, 2014], supported the examination. The study shows that statements mostly come from young girls and women from the pro-ana perspective. Those affected seem not to be aware of the severity of their illness or completely deny it. Moreover, eating disorders, especially anorexia, is propagated as a cure for all worries.

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## PROANA SEMANTICS OF FOOD: FROM WEBSITES TO A SCREENING TOOL FOR ANORECTIC/BULIMIC RISK IN ONLINE SETTINGS

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The term pro-ana (pro-anorexia) means the spread of restrictive eating behaviors and anorectic advices in virtual forum written by teenagers. The purpose of this pilot study consists in 1) a qualitative and quantitative analysis of foods contained in a linguistic corpus made up of users' comments on PROANA websites, and 2) to create a new screening tool (DiCA33) dedicated anorectic/bulimic risk in online settings, dedicated to female students.

- 1) The *corpus* of PROANA websites was analyzed through the T2K tool based on word-frequency processing. The results show conversations regarding beverages, products of vegetable origin (fruit, vegetables) and low-calorie foods, with a tendency to limit the fear linked to the choice of high-calorie foods through reassuring and reconcilable language labels ("light", "sugar free"). These findings specify the food semantics on PROANA websites associated to an anorectic vocabulary with restrictive diets. The results could be used to characterize the most common food as risk factors within the eating disorders framework.
- 2) On the basis of the previous work, we created a checklist made of all critical foods extracted from a linguistic corpus of the Italian PROANA websites/blogs. Female students had to compile online the EAT-26 self-report questionnaire and the DiCA33 Checklists. Only, those DiCA33 items associated to higher anorectic/bulimic risk (measured by EAT-26) were combined in a subscale, showing a necessary sensitivity for screening purposes. Further studies may validate the tool even recruiting patients with eating disorders to improve tool specificity.

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*POSTER PRESENTATIONS*  
*(listed in alphabetical order)*



## LESS OF ME, LESS OF I: SELF-REPRESENTATION AND THE NON-STANDARD 1SG

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The typographical variant lowercase 1sg (i) which in English is non-standard, is thought to be both conscious and meaningful. Its differences are mobilized in computer mediated corpora for their indexical and attenuative qualities, inherent to both its form and its phonology (monophthongisation).

Beyond the pragmatic utility (indexical and prosodic effects) that the diminished form affords the author, the NS1sg can also be employed as an icon; the smaller sign is employed by the author as a more faithful representation of their diminished form. I posit that in the case of an iconic utilisation of the NS1sg as studied herein, the concept of self (signified), and the signifier “i” possess not the referent “I” but the referent “i”. Signifier, signified, and referent are all diminished. An online representation of the self that implicates the real-life self.

This paper aims to demonstrate—via a similar semiotic framework—that persons with anorexia nervosa may deploy the novel variant because it embodies a more meaningful representation of their physical self than the standard form does. This is not however an aesthetically motivated choice, but something akin to an avatarsial use of the non-standard form. Both body and glyph are diminished. The standard 1sg is bigger and bolder than the non-standard variant which literally has less matter to it whether printed in ink or in pixels on a screen. The ability to choose between the two forms also provides the author with agency over the physical representation of their personal subject pronoun; a reflexion of the importance of agency and control over their own physical selves in the real world. This personalisation of self-representation could be a means of reducing the anxiety of participating in (online) discussion, which—according to Freud and Lacan—is related to whether objects can be thought of as having their own separate existence once they are put into a discursive environment or representation system.

First I will briefly present the four main uses of the lowercase 1sg deployed in computer mediated communications, then provide textometric analysis with colocations. Finally I will highlight, using a fully anonymized case study drawn from an online forum for persons suffering from anorexia nervosa, the iconic use of the NS1sg, and its meaningful implementation.

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## CONCEPTUAL METAPHORS FOR EATING DISORDERS ON INSTAGRAM

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Those who have not experienced an eating disorder first-hand may never completely understand the ways it impacts your life. However, analysis of the language used to talk about food, body, eating disorders, and eating disorder recovery can provide meaningful insight into the experience of having and recovering from an eating disorder. Since it is “nearly impossible” for people to discuss and describe health without using metaphor, analysis of these metaphors can provide insight into individuals’ unique experiences of illness and healing [Gibbs, 2020: 2-3]. My research looks at English online discourse, using data from the image-based social media platform Instagram. Posts made on publicly accessible accounts that focus on eating disorder awareness and recovery were analyzed for this study. This includes accounts run by treatment centers, therapists, and dieticians as well as accounts of individuals that are struggling with an eating disorder, have recovered from an eating disorder, or are in the process of recovering from an eating disorder. The Instagram posts were then analyzed using a Conceptual Metaphor Theory approach to identify metaphors for food, body, hunger, eating disorders, recovery, and relapse. While this project is still ongoing, several metaphors have been identified thus far including: FOOD AS MORALITY, BODY AS AN ENEMY, EATING DISORDER AS A PERSON, RECOVERY AS A FIGHT, and RELAPSE AS A RABBIT HOLE.

Identification of the metaphors used by individuals struggling with mental illnesses such as eating disorders can help treatment teams “understand where patients are coming from” and by extension understand how best to help them [Gibbs, 2020: 9]. Metaphors may be useful in identifying what stage they are at in their individual ED recovery journey [Goren-Watts, 2011: 152]. Some metaphors (such as RECOVERY AS A FIGHT) place responsibility and blame on the individual, rather than on the illness that is truly at fault (Gibbs, 2017; Sontag, 1978). Other metaphors (such as FOOD AS MORALITY or BODY AS AN ENEMY) contribute to a cultural acceptance and even expectation of disordered eating behaviors. Identifying the harmful metaphors that perpetuate stereotypes or place blame on the individual is the first step towards shifting the way we think and talk about eating disorders and work towards healthier discourse about food and body.

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## NONCOLLOQUIAL ARABIC NEGATION STRATEGIES IN MUTALLAT ARABIC SPEAKERS WITH ANOREXIA NERVOSA

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I analyze noncolloquial Standard Arabic (SA) nominal and verbal negation strategies in 8 (7 women/1 man) Mutallat Arabic (MA) speakers aged 21–25 with anorexia nervosa (ANMA). Anorexics seem to cross-linguistically display distinctive linguistic behaviors [Cuteri *et al.*, 2022; Lyons *et al.*, 2006; Skärderud, 2007]. MA is a rural Palestinian Arabic variety spoken in the Mutallat [Jastrow, 2004], the easternmost area of central Israel, bordering the Palestinian Authority. Like Arabic worldwide, MA speakers use diglossia [Ferguson, 1959; Khamis-Dakwar *et al.*, 2012], i.e., they shift between MA and SA features in speech according to several co-occurring factors (style, topic, audience, etc.). SA use increases with proficiency and education level. The data used here stem from spontaneous MA conversations between me and informants in their hometowns (*Umm al-Fahm*, *Bāka al-Ğarbīya*, *Taybe*, *Kfar Qāsim*) between 2015 and 2022 in the framework of a larger MA documentation project. At the time, ANMA informants had attended/were attending college/university. They had been diagnosed with anorexia nervosa and begun treatment less than three months previously. They showed distorted self-perception/self-evaluation, manifested in perfectionistic obsessions, rigid thinking and habits, and hypersensitivity to praise/reproach. Our conversations were not related to their condition or aimed at testing its linguistic peculiarities. Nonetheless, ANMA speech production showed interesting traits, including a striking frequency of negative expressions and negation forms. Negative expressions are so preferred over positive ones that ANMA often resort to constructions that are unnatural for MA and require the use of SA lexicon/syntax (e.g., ‘not exactly’ for ‘approximately,’ ‘not correct’ for ‘wrong,’ ‘without any doubt’ for ‘certainly’). Verbal, nominal, and existential negations are frequently (65% of occurrences) expressed in SA. This tendency is easily identifiable because MA and SA negation have different markers [Versteegh *et al.*, 2006]: **Verbal** ‘I do not know’: MA ***ma*** *badriy*/SA ***lā*** *?a'rif*; ‘I did not know’: MA ***ma*** *darēt-š*/SA ***lam*** *?a'rif*; **Nominal** ‘He is not a teacher/good’: MA ***hū miš mudarris/kwayyis***/SA ***huwwa laisa mu'alliman/tayyiban***; **Existential** ‘There is no place’: MA ***fīš makān***/SA ***lā makān***. The frequency of negative expressions can correlate with food denial and the rejection of maternal figures and the outside world (or rage against them) [Lacan, 1974]. The use of SA negations instead of the MA ‘mother tongue’ may represent distance from the mother figure and refusal of familiar rules/patterns. Furthermore, preference for SA expresses pedantry and concentration on formal aspects of speech rather than content, as detected in autism [Kissine *et al.*, 2018].

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**SYMPTOM-RELATED INFORMATION AFFECTS COGNITIVE FLEXIBILITY  
IN PATIENTS WITH ANOREXIA NERVOSA**

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Dysfunctions in cognitive inflexibility and decision-making have frequently been associated with Eating Disorders (EDs), even though evidence regarding maladaptive associative learning in EDs is inconclusive [Wu *et al.*, 2014; Darcy *et al.*, 2012]. This study aimed to explore the impact of outcome-irrelevant food-related information on the performance of individuals diagnosed with Anorexia Nervosa (AN) in a Probabilistic Reversal Learning (PRL) task (i.e., the most accurate task for measuring cognitive inflexibility). Participants in the PRL task were presented with stimuli associated with different probabilities of reward or punishment. They learned through trial and error to make the most advantageous responses. The probabilities of reward and punishment are not fixed; instead, they reverse during the task and change several times [Caudek *et al.*, 2021]. Our study assumed that the impaired performance of individuals with AN in a reinforcement learning task may be attributable to the detrimental effects of external factors that impact the learning process as opposed to compromised general learning mechanisms [Haynos *et al.*, 2022]. The results showed that all female participants (i.e., individuals with Bulimia Nervosa, AN, Healthy Controls (HCs), and individuals at risk of developing eating disorders) exhibited a greater tendency towards caution responses during the PRL task in the presence of outcome-irrelevant food-related information. However, only individuals with AN exhibited lower learning rates for food-related decisions, but not neutral decisions, than HC. Additionally, only AN patients demonstrated diminished learning rates for outcome-irrelevant food-related decisions, in contrast to food-unrelated decisions in reward-based learning. These findings suggest that AN may fundamentally affect the cognitive processing of food-related information, even in situations where no disadvantage in learning rates is observed for AN patients compared with HC for decision-making involving food-unrelated information. The current investigation offers significant insights into the reinforcement learning mechanisms of individuals diagnosed with AN and underscores the crucial role of food-related information in cognitive functioning in this patient population. These results may have practical implications for the development of effective interventions aimed at improving the decision-making process of individuals with AN.

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**INVESTIGATING THE IATROGENIC EFFECTS OF TREATMENTS FOR  
ANOREXIA NERVOSA:  
A CRITICAL REVIEW OF THE LITERATURE ON TUMBLR**

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Iatrogenesis can be defined as the unintentional causation of accidental harmful effects (e.g., disease, injury, infection, or adverse drug reaction) when providing medical care. Despite the presence of iatrogenic effects being widely recognized in the field of medical treatments, the possible iatrogenic effects of psychological treatments have not been systematically documented. Understanding the possible harmful effects of psychological treatments may improve both research and clinical practice for patients with a wide variety of psychiatric disorders, such as eating disorders. Therefore, the aim of this critical review was to investigate the potential negative effects that might arise as a consequence of widely recognized evidence-based treatments for anorexia nervosa (AN).

Literature search for this critical review was conducted following PRISMA and PICOS criteria. The databases PubMed and PsycInfo were searched using keywords linked to iatrogenic effects of treatment (“negative effects”, “adverse effects”, “adverse events”, “harm”, “symptom exacerbation”, “treatment failure”, “clinical deterioration”, “negative outcome”, “harmful effects”, “patient safety”, “negative therapeutic reaction”, or “negative results”), combined with keywords indicating the most common AN treatments (“cognitive behavioral therapy”, “family intervention”, “nutritional rehabilitation” or “refeeding”) and (“anorexia nervosa”). Peer-reviewed studies published in English until February 2023, reporting adverse effects of treatments were considered eligible.

Database search produced a total of 87 studies, of which 14 were selected. Although numerous studies documented iatrogenic factors caused by nutritional rehabilitation and refeeding (such as physical symptoms connected to the refeeding syndrome), no specific negative effect was reported for cognitive-behavioral therapy or family treatments. The obtained results further help highlighting the disproportion between the literature about iatrogenic effects in medical treatments and the research about such effects in psychotherapeutic treatments. The lack of shared criteria to identify iatrogenic effects of psychological treatments may partially explain why authors often fail to report their presence. Future research should, therefore, focus on developing shared guidelines to identify and classify iatrogenic factors in psychotherapeutic treatments for AN and other eating disorders.

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## SOCIAL INFLUENCES ON AND THE IDENTITY CONSTRUCTION OF MEMBERS OF THE KOREAN PRO-ANA VIRTUAL COMMUNITIES

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The presence of online pro-anorexia (i.e., “pro-ana”) communities has become a matter of concern globally. Existing scholarship on anglophone pro-ana virtual communities has identified several rhetorical strategies that members of such communities use to hide their behavior [Canto-Mila & Seebach, 2011; Ging & Garvey, 2018; Riley *et al.*, 2009], to share tips and inspirational photos and quotes [Bert *et al.*, 2016; Branley & Covey, 2017; Ging & Garvey, 2018; Riley *et al.*, 2009; Sheppard & Ricciardelli, 2023], and to construct group identity [Brotsky & Giles, 2007; Lai *et al.*, 2021] and defensive identity [Boero & Pascoe, 2012; Giles, 2006]. However, to date, there has been very little research focusing on the practices of pro-ana communities located in other linguistic/ cultural contexts.

The present study aims to explore how Korea’s distinctive social, historical, and cultural context [Choi, 2019; Shin *et al.*, 2017] influences certain discourse practices and constructs pro-ana identity.

The most prolific Korean pro-ana Twitter users, who regularly posted content with the hashtag “프로아나” [pro-ana] and related euphemisms, were identified based on three months of observation from November 2022 to January 2023. Three accounts with highly retweeted posts were chosen for this study as this content presumably best represents the pro-ana community’s shared opinions or values. Adopting a content analytic approach, a total of 313 tweets were coded into one of 16 categories, including existing themes from previous studies and new categories.

The preliminary findings suggest that these three members had a strong sense of identity as pro-ana and group membership. They also shaped particular discourse characteristics, possibly stemming from unique, cultural-specific characteristics of female body(care) discourse in Korea [Choi, 2019].

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## MALNOURISHED METAPHORS: COGNITIVE LINGUISTIC APPROACHES TO ANTI-ANOREXIA CAMPAIGNS

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On Sept 24<sup>th</sup>, 2007, a shocking campaign image was launched featuring the naked body of a woman with the words strewn across the top of the image: “No. Anorxia. No-l-ite.” The picture taken was of 25-year-old French model Isabelle Caro, and the campaign was launched by the fashion brand Nolita to raise awareness for eating disorders (EDs). News outlets described Caro as “skeletal” and “emaciated” [Katz, 2010; AFP, 2007]. Three years later, at 28, Isabelle Caro passed away. Following her death, New York ED specialist Marisa Shelly spoke on controversiality of the campaign, noting in an interview that “some [viewers] would say I want to recover so I don't become that … [and] some will say I wish I could look like that” [Shelly in Katz, 2010].

Caro’s death propels even further the profound influence of meaning and perception elicited by multimodal (linguistic and visual) campaigns such as Nolita’s. The importance of these campaigns remains salient today, as modelling agencies and AN awareness organizations continue to address the worldwide “Scary-skinny Epidemic” (Halpin in *Glamour Magazine*). This paper employs a cognitive linguistics approach to addresses the question of *how* these campaign images are formulated in order to express meaning by providing a case study analysis of three anti-anorexia and thinness campaigns, all published since Caro’s image took media platforms in storm. In the campaigns examined, visual elements no longer contain images of a real person (like Caro), but rather use metaphorical configurations [Forceville, 1996; 2009; 2016] and metonymic devices alongside language text to establish and create meaning. The emergent cognitive structures created through these in turn contain viewpoint structure, which can influence how viewers read and interpret the images they see before them [Dancygier & Sweetser, 2014]. Recent decades of research on metaphor and metonymy have ultimately proved that these phenomena are pervasive in human cognition, and thus become inherent in language-oriented structures, such as communication, and non-linguistic artifacts such as visual components [Sweetser, 2017]. The campaigns I examine in this case study occur across nations and include campaigns from Israel, Brazil, and the US. Outcomes of this study encourage the increasing importance of publicised campaigns over time and space, as we continue to pursue coherent understandings of how meaning emerges and disseminates in the realm of AN health studies reaching into the future.

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## METAPHORS AND ANOREXIA NERVOSA: A RESEARCH STUDY ON TIKTOK RECOVERY ACCOUNTS

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In the last decade only a limited number of studies were specifically devoted to the analysis of linguistic productions (i.e., oral and written texts) of subjects with Anorexia Nervosa (AN). And an even smaller number of works drew attention to how anorectic individuals metaphorically frame their coexistence with this condition. Needless to say, this limitation had a significant impact both on the amount of available data and the possibility to accurately define a linguistic profile of the pathology [Cuteri *et al.*, 2022; Gagliardi, 2021].

The main aim of this study is to reconstruct the metaphorical imagery through which anorectic individuals narrate how they live with their eating disorder and deal with their bodily image. To identify the most frequent and pervasive metaphorical conceptualizations characterizing AN, we analyzed TikTok recovery accounts, i.e., adolescent and young adult users who are in the process of healing from AN. We focus on the phenomenon represented by the so-called concretized metaphors [Skårderud, 2007], namely concretistic uses of words in which desymbolized bodily associations are “experienced as direct and bodily revelations of a concrete reality” [Enckell, 2002]. As a matter of fact, this class of metaphors is not innocuous but seems to mirror a direct correlation between the concreteness of symptoms (bodily and emotional experience are equivalent) associated with the clinical condition and the reduced capacity of metaphorization, hence of making mental representations, shown by the affected individuals [Bates, 2015].

From a methodological perspective, we constructed a corpus containing TikTok posts created by Italian recovery accounts. Yet, since it was not possible to automatically download threads from TikTok, we proceeded with the manual download of data. Once we gathered data, we used topic modeling [Blei, 2012] to analyze the topics around which the TikTok posts can be classified. As a second step, we conducted a qualitative semantic annotation to compare the metaphors we identified to the lists of conceptual metaphors discussed in literature (es., Skårderud, [2007a; 2007b] and Knapton [2013]).

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