Review Article

Gazi University

Ø

Journal of Science

PART B: ART, HUMANITIES, DESIGN AND PLANNING



http://dergipark.gov.tr/gujsb

# The Ethical Dimension of the Persona Concept

## Serkan GÜNEŞ<sup>1,\*</sup>, Çisem ERCÖMERT GÖRGÜN<sup>2</sup>

<sup>1</sup> 0000-0003-4377-528X, Gazi University Design Application and Research Center, Ankara, TURKEY
<sup>2</sup> 0000-0001-7588-024X, Gazi University, Graduate School of Natural and Applied Sciences, Ankara, TURKEY

Article Info	Abstract
Received: 23/05/2022 Accepted: 14/06/2022	Persona literature, which has rich content, has long been one of the dominant and popular topics in design. In the literature, which focuses on persona production and its use in the design process, there are hardly any ethical discussions about the philosophical principles of persona production. This article explains the general ethical approach to design practices and explores how persona
Keywords	creation and persona-based design practices can foster ethical thought and action. For this purpose, the scope of the concepts of persona and ethics is determined and defined. The idea of
Persona, Ethics, User-centered design, Objectification	persona is discussed in terms of objectification, transformation, homogenization of individuals and obtaining individual data, legitimacy of representation, and use ethics.

## 1. INTRODUCTION

In product design, especially with the rise of user-centered design and the increasing importance of understanding the user, designers have increased their contact with individuals and communities in an unmediated way. Even though user-centered design occupies the agenda, the issue of ethics and accountability in design has not been discussed to a large extent, except for a few "contradictory" and "advising" weak outlets due to the contradictions and dependencies between discourse and practice. On the other hand, as the design is increasingly used for social development and the designer is empowered to determine and transform the subject, ethical discussions seem inevitable. Given the enormous power that designers currently wield, there is a growing need for an ethical framework or a philosophical system for designers to guide their conscious decisions, to be, in a way, "gatekeepers" [1]. Because today's designs stand before us as exploitative objects that encourage and force users to act in a particular manner, stimulating the mind, transforming, and sometimes targeting human weaknesses. Therefore, the human dimensions of this power, which are not subject to control, need to be discussed. When the issue is human, the designer's first-hand approach to the design subject, whose actions are kept under control, gains importance. For this reason, it is required to discuss the concept of the subject in design and how the designer brutally objectifies the subject for specific purposes.

If the concept of design and ethics are evaluated in general terms, ethical documents are declared by different design organizations and associations and are principally advisory. When the contents of these documents are surveyed, some documents include responsibilities towards the user under a separate heading. In WDO's user-oriented Codes of Ethics [2], the main emphasis contributes to the general public's social, individual, and material well-being. It is stated that designers should not consciously act in a harmful or contradictory way to this good. When the International Council of Design's Model Code of Professional Conduct for Designers [3] document is examined, it is recommended to value the users' opinions. It is foreseen that the design should not cause any design that misleads or deceives the end-user in providing

voluntary information, undermines their privacy, or acts unknowingly against their interests. Inclusivity is valued in the document; designs that unintentionally create or spread stereotypes are inappropriate. The most critical discourse of the document within the scope of this study is that it is aware that design can sometimes lead the user to behaviors that he is not aware of. It states that the design should not be a manipulative tool to further the client's goals (i.e., selling something or getting the desired response) rather than serving the user's benefit. When the Code of Ethics document published by the Industrial Designers Society of America is inspected [4], there is no direct user statement. Public benefit is highlighted in the document. When the Code of Ethics for Professional Designers document belonging to The French Designers Alliance (Alliance Française des Designers) is examined [5], it is seen that there is no user expression directly; it is only stated that the designers contribute with their skills to improve people's lives, work, living conditions, health, and environment. When the Code of Conduct document of the Chartered Society of Designers was evaluated [6], it was seen that the document was intended to promote the highest design and design management standards for society's benefit and best interests.

When ethical codes are evaluated in the field of design, it is seen that professional behaviors are examined and increasingly focused on norms that will determine the rules of professional ethics. Most of these norms are based on the designer/employer and the designer/designer relations. It is noteworthy that the formation and consequences of these relations are handled in "social responsibility." On the other hand, social responsibility towards the user is dealt with. It is tried to fit into a general ethical framework that advises the general welfare of the society and sometimes "noble" behaviors to protect the user from market forces. This general user-oriented approach weakly places the profession's responsibilities on society, and most documents do not even include a user statement. As the distance between the user is gradually decreasing and the profession is increasingly putting the user in the center, responsibilities towards the user need to be re-discussed.

## 2. PERSONA and USER ETHICS

## 2.1. The Persona Concept

There is detailed literature on the user in the design field, which deals with many aspects of the concept. With the user being one of the central focuses of the design field, user experience and, in a broader sense, user-oriented design (UDC) have become increasingly important. Because at the heart of the user-centered design is the idea that involving users in a design process is perhaps the most effective way to ensure that the resulting design does what it is supposed to do [7]. All aspects other than the user and his experience retain their secondary position. So in this approach, users are put at the center of the process, and the product is designed to suit them, at least in principle. Putting the user at the center, in a way, aims to indirectly or directly involve participation, that is, to collect user data with tools and techniques and to include the user's voice in the design processes. User-centered design (that is, the design that puts the user and their needs at the center of the process at every stage) begins with an in-depth analysis of the needs and preferences of the intended users. Despite the practical effort to identify the targeted user, the philosophical and ethical discussion of whom the targeted user is generally incomplete and not fully discussed in user-oriented design.

It is common to use predefined user persona definitions to create person-centric responses to identify the target user. When identifying target users, one of the best ways to collect and summarize relevant information is the persona method [8]. It is argued that using persona in user-centered design processes has excellent benefits [9]. Persona, as a technique for making users real for designers [10], is a type of "virtual" user creation and a representation based on experience and imagination, as the user is out of the loop during critical stages of design [11]. Persona development begins with assumptions about user profiles based on data from preliminary market research [12]. Then, the process draws detailed descriptions of the people in their most detailed form and creates a biographical portrait of the person based on the research data. Later in the design process, the person is referred to by name instead of "user" [13]. In this process, defining the

target user by creating a persona helps the stakeholders communicate smoothly. They represent the target users' personal characteristics, needs, behaviors, goals, and expectations [14]. Personas are created by identifying the entire field of potential users, choosing the user classes you care about most, defining the people to represent those classes, and guiding design decisions. From this point of view, persona use does require decision-making [15]. Since persona decisions are so powerful in governing potential future user decisions and behavior, the ethical dimension of decisions about persona is, therefore, an indispensable condition. Because design ethics is concerned with covering, in addition, the happiness of the user as well as the designers' duty or obligation.

Since Cooper [16] introduced the method, the persona method has attracted the attention of many researchers from many disciplines. Many researchers in the literature have examined case studies showing how they use the method and the use of persona in new fields [17]. Many studies have questioned whether personas are applied in the design process, how they are perceived, how they are defined, their effectiveness and usefulness as a design method [18,19,20,21,22], new efforts to develop, and better use personas, and how to make them more powerful [23,24,25,26]. Studies have revealed the need for personas, researching design ideas, making decisions, evaluating usability and developing and using them in the product design cycle, using personas in education [27,28,29,30], examining and evaluating the method used [31,32,33,34], and creating personas for different cultures [35, 36]. Most research on personas is based on case studies that reveal how the method is created and used and its benefits and weaknesses in different design projects [37,38,39,40,41,42]. Studies on automatic persona creation methods have come to the fore [43,44]. When the literature reached within the scope of this study on persona was examined, a survey of persona and ethics could not be found. The studies that deal with the concepts of persona and ethics partially jointly focus on the acquisition and processing of metadata obtained from various databases [45]. Interestingly, ethical debates on the persona are so weak, but on the other hand, it is indispensable. In a way, ethical practice in persona development requires that we do the right thing and focus on fairness, safety, honesty, and transparency in users' interests. Therefore, persona ethics is the systematic procedure of applying moral standards in decisions to reveal potential product users. It is the conscious and sustainable process of identifying, anticipating, and satisfying their possible requirements while striving to achieve profitability and reputation without brutally manipulating consumer decisions and behavior. Theoretically, ethical codes institutionalize the collective moral conscience of the profession; however, the practitioners of these codes are professionals. So when it comes to ethics, most of the prescribed moral duties and obligations lie with the designers. Suppose designers are trying to define personas in their professional practices. In that case, responsibility is the burden of designers, and they must, at least in principle, act, behave, and decide as the codes prescribe. Thus decision-making about persona applies to all approaches to ethics; common issues such as obligation, rights, duty, right and wrong, conscience, choice, intention, etc. It is argued that when decisions involving ethical decisions need to be made, the moral person adheres to their fundamental values, tries to be objective and fair, is concerned about the welfare of the society and those in the society, and follows ethical decisions [46]. The designer's ethical responsibility for the persona stems from the designer's desire to mark and describe the persona and transform their future behavior through the products.

#### 2.2. The Designer and Persona Creation

According to Buchanan (47) the activity and subject of design are uncertain. It is realized through invention, planning, or methodology and procedures that designers find helpful in qualifying their work. Such that "it is open to alternative solutions with the same methodology." (47). While this ambiguity allows designers to act freely, unfortunately may lead to unethical approaches with difficulty determining the design principles. Likewise, it is possible to discuss similar freedom in persona creation. There are specific methods of producing personas for the designer within this space area. In the first method, the foreground is qualitative data belonging to the user and obtained from the market. Similarly, creating a persona with quantitative data is in the foreground in the second method. The third method consists of blending these two data sources. In contrast, the other way depends on the intuitive power and experience of the designer. The

designer marks and describes the subject without any product proposal when the designer thinks about it. As a result of this description, the subject-in-itself suddenly becomes the subject of the design. The subject's initial spontaneity disappears by considering the subject and subjecting it to the design. Objectification, sometimes reification, is the subject's becoming an object. There is a need for an active entity that stands before the subject and signifies and determines it for objectification. Sometimes this can be the subject itself, another subject, or a system. It is the designer who objectifies the subject in the design process.

There is no doubt in design that the design subject is usually human. This human is marginalized by being subject to a Sartrean-style objectifying gaze. For Sartre, the gaze continuously appropriates existence, and it is such a powerful gaze that it puts and categorizes the living subject in himself as being-seen-by-another [48]. Sartre didn't just think of the human eye when he talked about gazing. Instead, he perceived the world itself as gazing. As a result, the design perspective on humans is primarily objectifying. Design marks, defines and categorizes people. In this way, there is no trace of a human being alone, and the design subject gradually becomes the object of design. There is generally no ethical concern with objectifying objects, whether or not a part of nature is treated as an object - because it is an object by nature. Objectification ethics of a person should be considered in-depth due to denying the other's freedom or agency. Yet, objectification is closely related to other concepts such as autonomy, exploitation, and commodification. The effort of design to objectify the individual is not limited to describing it. The design strives to transform the subject that is a result of objectification. The final state of the persona definition is the target subject changed and defined actions. This transformation process begins with discourse and continues with the instrumentality of products. Therefore, design interferes with human nature as a transformative act; it manipulates the individual for his purposes.

#### 2.3. General criticism of the concept of persona

Although the persona method has received much attention in the literature, it does not have a solid empirical basis; it is difficult to understand whether it accurately reflects user data, which persona attributes are based on user data, and which are fictional [31]. However, while developing personas, researchers need to provide empirical evidence [49]. Portigal [50] criticized personas as a way of allowing designers to create products for desired users rather than actual users while ignoring user work. The elements that make the designer's human-oriented insight and operate the decision mechanism in the design process, on the other hand, can be both designer-specific and highly subjective due to their implicit professional knowledge. According to Nielsen and Storgaard Hansen [17], designers do not refer to personas in their discussions but their ideas and impressions. On the other hand, even if personas are based on data, which market segment to study and which user problems to cluster depend on subjective decisions [51].

According to Massanari [52], personas are created by political realities rather than user needs, leading to the oversimplification of users, narrowing their behavior, and becoming the subject of design. In addition, personas provide a best-case scenario for the ideal user who is very willing to use a product or service [20]. However, for the persona to be helpful, it must reflect the world, not as it should be [32].

Another reason for criticism about the persona method is that it focuses more on people's definitions and lacks instructions on using personas [17]. Due to the flexibility and popularity of the method, as Floyd et al. [32] stated, over time, the shared thing about the persona method has become only the term "persona," and confusion has arisen about the method. This situation can cause ethical problems due to the freedom it creates in the creation and use of persona. A powerful tool like persona can mislead designers if not used properly, such as lying with statistics or using non-representative video samples. Therefore, our responsibility is to develop effective utilizing this tool [22].

Another factor that adds to the confusion involved in the method of the persona is the actual user settings. End users are highly diversified in mass user products [53,54]. "The use of persona brings sociopolitical issues to the surface. Each persona has a gender, age, race, ethnicity, family or cohabitation, socio-economic

background, job, or home environment that provides an effective way to recognize and perhaps change assumptions about users." [22]. So much so that the persona provides designers with a user-centered reference that depicts an ideal user [55].

In the product design process, user representation helps define who will use the designed product, for what purpose, and the user's needs, wishes, and habits. However, a representation is, by definition, less wealthy and detailed than the thing itself [56]. According to them, the designer creates a user representation; the persona method creates stereotypical users. In this sense, using a stereotype causes the designer to become attached to a cliché, and many details intended to be included in the user representation are overlooked. In addition, stereotyped user representations restrict both design and use and create an obstacle for everyone to reach the design [56].

However, qualitative and quantitative persona constructs have also been the subject of severe criticism. According to the studies of Jansen et al. [33], the weaknesses of the qualitative approach are that it allows bias, requires a lot of effort, can sometimes be invalid and narrow-scoped, requires expertise, and can be subjective. For example, Korsgaard et al. [57] compared user segments that two designers manually created from the same data and found differences in clustering strategy, number of clusters, and characteristics of personas.

According to Mulder and Yaar [58], quantitative data reduce human bias in personas. Data analysis methods can create categories of users that researchers may miss. Quantitative data analysis methods can still lead to human bias but have a much smaller impact than those for qualitative data [58].

However, the main problem with this approach is that it is not clear whether the quantitative data is sufficient to represent all relevant user attributes to be compiled into personas [32]. In addition, designers may not be aware of the adequate sample size requirements to analyze data with statistical methods and may conduct small-scale user research [44]. Another disadvantage is that different software segments users differently, resulting in different personas [59].

The weaknesses of the quantitative approach are that the segmentation may not reflect the goals and objectives of end-users, its users may represent the majority due to its statistical weight, the possibility of masking outliers, and the possibility that created personas may not represent current users or desired users [33].

Assumption persona may not contain reliable or usable data for creating a persona. The downside is that poorly constructed assumption personas represent only the stereotypes and assumptions of designers rather than actual users and do not lead to genuinely user-centric products [17, 60]. Stereotyping is more evident in personas based on designers' intuition than user data [32].

Norman [61] defines the ad-hoc persona as an imaginary personality, not based on any solid empirical foundation but instead derived from intuition and experience, developed by designers to capture certain users' intuitions about certain aspects of their behavior. These have value, not for capturing actual user needs but for capturing the designer's intuitive understanding and making it questionable in ways pure description cannot[32]. Norman [61] does not believe that the intricate details of persona descriptions contribute to the primary purpose of personas in the design process, namely to establish an "empathetic focus" among designers. Djajadiningrat et al. [62] defined "extreme characters" as a persona approach based on an ad-hoc persona. They aim to explore the boundaries of the design field by exploring forms of behavior that would not be considered because they violate social norms or expectations. Although they believe users are not typically included in the set of users that define the persona, they still do not seem to have overcome the ethical problem, as they marginalize them within a class.

## 2.4. Some philosophical points

There are several ethical problems philosophically in the objectification process of the designer. The first is the tendency to treat the individual as a physical being or 'object' rather than a person with feelings and

thoughts. When reduced to something for use only, the humanity of the objectified individual is diminished. With a more detailed explanation, the individual is built with all their visible qualities (such as age, job, family, status, etc.) at the persona stage in the design process. The emotions and thoughts aimed to be transformed dressed on that individual. In principle, the persona is thought to have unsatisfied needs and inner restlessness about it and therefore "need to get inside." For design, the persona is the object with an appetite, deprived and therefore restless. With the perceived deprivation in potential users, designers try to improve the possibility of individuals acquiring an offering that matches their aspirational self-image by creating a strong association between their proposed product and a specific persona. Suppose the design persona is pleasant and trustworthy. In that case, message internalization (the process through which a potential user adopts a designer's belief as their own) and proposed product equity can be facilitated. Therefore, potential users may have vulnerabilities and emulations susceptible to manipulation, affecting how a particular design message can be received through the persona. Hence, designers often use personas to create pre-awareness, then incorporate design promotion by highlighting the target persona to provoke desires. In this context, the target persona put in front of potential consumers is the desired state of current consumers to be transformed by designers. The designer's goal of transforming the consumer through the target persona may contain ethical issues. Because design is concerned with influencing people's future behavior, it is not only concerned with meeting existing needs and wants and anticipating future demands. Whether such influence is ethically justified or not, consumers face widespread encouragement from designers trying to influence their behavior. Consumers exposed to very different behavioral predictions produced for them can become confused, vulnerable, and therefore open to manipulation. Given that consumers are risk-averse [63], target persona suggestions dictated by designers that might impress the average consumer can quickly be taken as a shortcut to a clear personality-building suggestion. In this respect, the designer's employment of higher ethical thinking, that is, the choice between manipulation or social welfare and well-being will occur to the extent that designers internalize the ethical code(s) of their discipline. For the designer, the essential criterion to be evaluated in internalization will be that the persona envisaged for individuals provides services within their cultural, social, and personal schemes, that individuals produce freedom in their decision processes, and that value conflicts are not created.

Another factor affecting the ethical confusion involved in the method of the persona is the actual user sets and artificial categorization. Each consumer represents their cluster, and the synthetic typology believed to represent the best among consumers is the persona. The consumer who is inadvertently placed in a group at an early stage of the design process will remain in the same segment as the synthetic persona until the final clustering solution. Therefore, from the designers' point of view, real consumers are constantly organically related to the persona, even as they experience personal change. This interchange is such a relationship that the actual consumers need to adapt to the persona, not their state changes. At some point, real consumers turn to the persona presented to them as a reference. Despite that, end users are highly diversified in mass user products [53, 54]. To circumvent this heterogeneity, design staff segments the market according to people's goals and behaviors in using a particular product [64]. Similarly, marketers categorize products based on how and where consumers buy products. The most crucial point to be taken as a basis for homogenizing a heterogeneous group of potential consumers is the bundle of values offered by the product. Homogenization, which significantly reduces transaction costs, is also a process of marginalization by pushing some out of the cluster. When the number of clusters is reduced in terms of inclusivity, if this is the case, consumers are necessarily forced into less homogeneous clusters. Ultimately, each consumer cluster is homogeneous in itself but as different as possible from other clusters enough to produce marginalization. Suppose we have a homogeneous group and a persona represents this group. In that case, the product to be proposed will only benefit the group members, and those outside the cluster will not be able to benefit from the values offered by that product. A broader separation between possible sets of users does not bring greater social welfare; on the contrary, it allows one group to monopolize the consumer benefit generated by design. Dividing real consumers into specific groups and representing them with a persona that will reference them raises ethical issues in itself. Suppose a company offers a car with high safety and comfort equipment only to a privileged group that it represents with its persona. In that

case, the marginalized others deprive it of this opportunity. So, in a way, the designer restricts himself when he can do better for someone due to segmentation; it became so much better for the cluster and so much worse for the rest. This economically logical situation becomes ethically controversial. The design supports the formation of privileged groups in an ethics-or-else dilemma with its regal suggestions and the discourse of the persona. This contradiction reveals the policy dimension of the concept of "needs" on which the persona is built. The envisaged needs of the persona become an initiative that can be determined in its absence, increased, or decreased according to the situation. However, one can also observe many ethical practices due to market compulsions and the rise of "ethical consumers" who base purchasing decisions on the ethical positioning of the product. In principle, many persona constructs can be found in the consumer's morally acceptable norms of conduct. Persona constructs created in response to the increasing consumer awareness about ethical choices are amoral classification studies among consumers. Consumers who have deep ethical concerns but have budgetary difficulties may fall into a moral dilemma at the purchasing stage. For example, guilt increases when one cannot buy a high-efficiency but expensive dishwasher.

In persona studies based on data, the legitimacy of persona depends on data. The source of information in the persona as a representation method tends to be the variable that causes the most controversy [32]. Therefore, the epistemological problem with persona is how information is obtained. Because how to get user information that we can accept as analytical, whether this information is factual information for us, and the accuracy of this information is separate discussion topics. If we discuss knowledge based on designer experience and insight, the measure of this information is another problematic discussion.

On the other hand, it is clear that a research method that only focuses on observable phenomena is not sufficient for a discipline that is directly related to the individual and society and that is implicit knowledgeintensive, such as industrial design. According to Sharrock and Anderson [65], design is not and cannot be data-driven. While the question of "how the world is" is involved in design decision-making at many critical points and in many different ways, it is only rarely included in the enumeration of details. The main ethical issue here is that organizations/ data brokers can collect data without consumer consent through marketing research activities and use data to create personas. If the data obtained is not based on consent, it has no legal basis. The persona to be built in this way will also be open to discussion. Many technological products today can misuse consumer data and personal privacy. Therefore, designers must maintain appropriate control over how the persona collects, uses, or discloses the personal data on which it is based. However, it is partially the designer's responsibility to ensure that the data is correct. Designers are responsible to the consumer for these illegal technology uses in their designs. When necessary, they should use the right to object to the employer to favor the consumer. Collecting information on consumers without their consent through observations is also considered unethical [66]. For example, one's behavior in a shopping mall should be regarded as private information without full knowledge and consent, even under the guise of market research in design research. Therefore, a designer cannot base a persona on this data and should be scrubbed. A possible alternative approach, at least in such cases, is to communicate directly with the consumers and obtain their consent to observe. Another problem is how much the received data is reflected in the persona construction and vice versa. The design can use personas to make user research results memorable, engaging, and applicable to user experience design [64]. This situation is related to accountability rather than an ethical problem. Accountability in design is closely associated with the term responsibility. It is subject to reporting and justifying the design decisions, how well designers meet their responsibilities, and making even the routine, taken-for-granted design activities are visible, transparent, and recognizable. Accountability for persona generation is a critical norm-enforcement mechanism. On the one hand, there are the duly collected data on consumer perceptions and practices, and on the other, the decisions to be made. Therefore, one should explain the data used and ignored while creating the persona with their justifications.

#### **3. CONCLUSION**

A persona is an archetypal character representing a group of users who share common goals, attitudes, and behaviors while interacting with a particular product or service. Designers can use personas to help make design decisions as part of the product development process to achieve different outcomes and process goals in other contexts and create user research results that are memorable, engaging, and more applicable to user experience design. According to Floyd et al. [32], it is used and developed. Persona can lead to users being represented as objects rather than included in the design process. If a person uses another person to achieve a particular purpose, they construct that person as an object. In that case, when the designer uses the persona to reach the result of the design process, they build the user as an object. According to Levinas [67], a person's ability to recognize the humanity of another defines his ethical self.

When the persona literature is examined in detail, it has been criticized from specific points. Most of these criticisms are on the structure and validity of the qualitative and quantitative data inputs to the persona creation process. Other criticisms generally focus on the use of personas in the design process. On the other hand, the ethical dimension of persona has not been the subject of a detailed discussion. A few studies on persona ethics have focused more on how the data forms the basis of qualitative data obtained. When professional ethics statements are examined, the concepts of user and society are mentioned in ethical documents. However, in these documents, it is tried to be emphasized under the general approach of social welfare and the well-being of the user and his protection against manipulations.

Ethics or moral philosophy is the practice of doing right, being the right person, and thinking about human values. On the other hand, professional ethics means that professionals are responsible for their profession and the people they serve. Dealing with this issue in depth is inevitable regarding the persona and the design process built on it. Persona ethics should be the field of philosophical reflection on this phenomenon before any practice. In this way, it is possible to consider principles rather than behaviors and practices. Within the scope of this study, three philosophical principle dimensions of the concept of persona are discussed.

The first of these dimensions is the objectification of real individuals in the design activity by evaluating them within the scope of persona. Design objectification is not only signification and description but also an effort to transform individual behaviors within the range of design purposes. This transformation effort should not conflict with other professional and ethical principles, and designers should unconditionally observe the welfare and well-being of individuals and society within their decisive powers and authorities. The second dimension is the artificial categorization that emerges naturally in the persona process. Homogenization is essential for design processes, both for focus and transaction costs. Although this situation is inevitable, designers should consider the general benefit of society with their solutions and show a sensitive and inclusive approach to its needs. Designers need their data, experience, enthusiasm, and feedback to better understand individuals and produce more inclusive and sustainable solutions. Designers need their data, knowledge, enthusiasm, and feedback to better understand individuals and are responsible for maintaining appropriate control over how to collect, use, and disclose personal data.

#### REFERENCES

- [1] Papanek, V. (2005). *Design for the real world: Human ecology and social change*. Chicago: Academy Chicago Publishers.
- [2] World Design Organization. (2021). Code of professional ethics. http://uploads.wdo.org.s3.amazonaws.com/ProfessionalPractice/WDO\_CodeofEthics.pdf Last Accessed: 05.05.2022
- [3] International Council of Design. (2020). *Model code of professional conduct for designers*. <u>https://www.theicod.org/resources/news-archive/design-professionalism-standards-of-professional-conduct</u> Last Accessed: 05.05.2022
- [4] Industrial Designers Society of America. (2021). *Ethical principles and code of ethics*. https://www.idsa.org/code-ethics Last Accessed: 05.05.2022
- [5] The French Designers Alliance. (2021). Code of ethics for professional designers. http://www.alliance-francaise-des-designers.org/code-of-ethics-for-professional-designer.html Last Accessed: 05.05.2022
- [6] The Chartered Society of Designers. (2021). *Code of conduct*. <u>https://www.csd.org.uk/about/code-of-conduct/</u> Last Accessed: 05.05.2022
- [7] Redström, J. (2017). *Making design theory*. Cambridge: The MIT Press.
- [8] Muller-Roterberg, C. (2020). *Design thinking for dummies*. New Jersey: For Dummies.
- [9] Jacko, J.A. (2011). *Human-computer Interaction: Design and development approaches*. New York: Springer Publishing Company.
- [10] Hartson, R., and Pyla, P. (2012). *The UX book process and guidelines for ensuring a quality user experience*. Burlington: Morgan Kaufmann.
- [11] Schuler, D., and Namioka, A. (1993). *Participatory design: Principles and practices*. Boca Raton: CRC Press.
- [12] Solis, B. (2015). X: The experience when business meets design. Hoboken: John Wiley & Sons.
- [13] Stone, D., Jarrett, C., Woodroffe, M., and Minocha, S. (2005). *User interface design and evaluation*. Burlington: Morgan Kaufmann.
- [14] Grudin, J., and Pruitt, J. (2002). Personas. Participatory design and product development: An infrastructure for engagement. T. Binder, J. Gregory, & I. Wagner (Eds.), from PDC 02 Proceedings of the Participatory Design Conference, (s. 144-152). Malmö. Sweden.
- [15] Baxter, K., and Courage, C. (2005). Understanding your users: A practical guide to user requirements methods, tools, and techniques. Burlington: Morgan Kaufmann.
- [16] Cooper, A. (1999). The inmates are running the asylum: Why high-tech products drive us crazy and how to restore the sanity. Indianapolis: Sams.
- [17] Nielsen L and Storgaard Hansen K. (2014). Personas is applicable: A study on the use of personas in Denmark. In: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, CHI '14, New York, NY, USA: ACM, 1665–1674.

- [18] Blomquist, Å. and Arvola, M. (2002). Personas in action: ethnography in an interaction design team. In *Proceedings of the second Nordic conference on Human-computer interaction*, 197-200.
- [19] Long, F. (2009). Real or imaginary: The effectiveness of using personas in product design. In *Proceedings of the Irish Ergonomics Society annual conference*, 14, 1-10.
- [20] Matthews T, Judge T and Whittaker, S. (2012). How Do Designers and User Experience Professionals Actually Perceive and Use Personas? *In: Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, CHI '12, New York, NY, USA: ACM, 1219–1228.
- [21] Miaskiewicz, T., ve Kozar, K. A. (2011). Personas and user-centered design: How can personas benefit product design processes? *Design Studies*, *32*(5), 417-430.
- [22] Pruitt, J., and Grudin, J. (2003, June). Personas: practice and theory. In *Proceedings of the 2003* conference on Designing for user experiences (pp. 1-15).
- [23] Javahery, H., Deichman, A., Seffah, A., and Radhakrishnan, T. (2007, October). Incorporating human experiences into the design process of a visualization tool: A case study from bioinformatics. In 2007 IEEE International Conference on Systems, Man and Cybernetics, 1517-1523.
- [24] Junior, P. T. A. and Filgueiras, L. V. L. (2005). User modeling with personas. In *Proceedings of the* 2005 Latin American conference on Human-computer interaction, 277-282.
- [25] McGinn, J., and Kotamraju, N. (2008). Data-driven persona development. In *Proceedings of the SIGCHI conference on human factors in computing systems*, 1521-1524.
- [26] Sinha, R. (2003, April). Persona development for information-rich domains. In *CHI'03 extended* abstracts on Human factors in computing systems (pp. 830-831).
- [27] Anvari, F., Richards, D., Hitchens, M., and Babar, M. A. (2015, May). Effectiveness of persona with personality traits on conceptual design. In 2015 IEEE/ACM 37th IEEE International Conference on Software Engineering (Vol. 2, pp. 263-272). IEEE.
- [28] Friess, E. (2012). Personas and decision making in the design process: an ethnographic case study. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, 1209-1218.
- [29] Guo, F. Y., Shamdasani, S., and Randall, B. (2011, July). Creating effective personas for product design: insights from a case study. In *International Conference on Internationalization, Design and Global Development* (pp. 37-46). Springer, Berlin, Heidelberg.
- [30] Jones, M.C., Floyd, I.R. and Twidale, M.B. (2008). Teaching Design with Personas. Proceedings HCIEd, Rome 2008. *Magazine of Interaction Design & Architecture*(s) Year II&III N. 3&4. pp. 75-82.
- [31] Chapman, C. N. and Milham, R. P. (2006). The personas' new clothes: methodological and practical arguments against a popular method. In *Proceedings of the human factors and ergonomics society annual meeting*. 50(5), 634-636. Sage CA: Los Angeles, CA: SAGE Publications.
- [32] Floyd, I. R., Twidale, M. B. and Jones, M. C. (2008). Resolving incommensurable debates: a preliminary identification of persona kinds, attributes, and characteristics. *Artifact: Journal of Design Practice*, 2(1), 12-26.
- [33] Jansen, B. J., Jung, S. G., Salminen, J., Guan, K. W., and Nielsen, L. (2021, January). Strengths and weaknesses of persona creation methods: Guidelines and opportunities for digital innovations. In *Proceedings of the 54th Hawaii International Conference on System Sciences* (p. 4971).

- [34] Salminen, J., Guan, K., Jung, S. G., and Jansen, B. J. (2021). A survey of 15 years of data-driven persona development. *International Journal of Human-Computer Interaction*, *37*(18), 1685-1708.
- [35] Anvari, F., Richards, D., Hitchens, M., and Tran, H. M. T. (2019, May). Teaching user-centered conceptual design using cross-cultural personas and peer reviews for a large cohort of students. In 2019 IEEE/ACM 41st International Conference on Software Engineering: Software Engineering Education and Training (ICSE-SEET) (pp. 62-73). IEEE.
- [36] Cabrero, D. G., Winschiers-Theophilus, H., and Abdelnour-Nocera, J. (2016, November). A critique of personas as representations of" the other" in cross-cultural technology design. In *Proceedings of the First African Conference on Human-Computer Interaction* (pp. 149-154).
- [37] Coorevits, L., Schuurman, D., Oelbrandt, K., and Logghe, S. (2016). Bringing personas to life: User experience design through interactive coupled open innovation. *Persona Studies*, 2(1), 97-114.
- [38] Nielsen, L., Hansen, K. S., Stage, J. and Billestrup, J. (2015). A template for design personas: analysis of 47 persona descriptions from Danish industries and organizations. *International Journal of Sociotechnology and Knowledge Development (IJSKD)*, 7(1), 45-61.
- [39] Schäfer, C., Zinke, R., Künzer, L., Hofinger, G., and Koch, R. (2014). Applying Persona method for describing users of escape routes. *Transportation Research Procedia*, 2, 636-641.
- [40] Tempelman-Kluit, N., and Pearce, A. (2014). Invoking the user from data to design. *College & Research Libraries*, 75(5), 616-640.
- [41] Tu, N., Zhang, T., He, Q., Zhang, H., and Li, Y. (2011, May). User-centered design in new product development: A case study in developing new sports earphone. In 2011 International Conference on Computer and Management (CAMAN) (pp. 1-7). IEEE.
- [42] Zaugg, H., and Rackham, S. (2016). Identification and Development of Patron Personas for an Academic Library. *Performance Measurement and Metrics*, *17*(2), 124–133.
- [43] An, J., Kwak, H., Jung, S., Salminen, J., Admad, M., and Jansen, B. (2018). Imaginary people representing real numbers: Generating personas from online social media data. *ACM Transactions on the Web (TWEB)*, *12*(4), 1-26.
- [44] Jung, S. G., An, J., Kwak, H., Ahmad, M., Nielsen, L., and Jansen, B. J. (2017, May). Persona generation from aggregated social media data. In *Proceedings of the 2017 CHI conference extended abstracts on human factors in computing systems* (pp. 1748-1755).
- [45] Salminen, J., Chowdhury, S., Forneman, W., Jung, S. G., and Jansen, B. J., (2020). The ethics of data-driven personas. In *CHI 2020 Extended Abstracts* (pp. 1-9).
- [46] Treviño, L. K., Nelson, K. A., (2010). Managing business ethics. New Jersey: John Wiley & Sons.
- [47] Buchanan, R., (1995). Rhetoric, humanism and design. In R. Buchanan and V. Margolin (eds.) *Discovering design: Explorations in design studies*. Chicago: University of Chicago Press, 23-66.
- [48] Sartre, J. (1993). Being and nothingness. Washington: Washington Square Press.
- [49] Chapman, C. N., Love, E., Milham, R. P., Eirif, P., and Alford, J. L. (2008, September). Quantitative evaluation of personas as information. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 52, No. 16, pp. 1107-1111). Sage CA: Los Angeles, CA: SAGE Publications.
- [50] Portigal, S. (2008). True Tales Persona non grata. Interactions, 15(1), 72-73.

- [51] Chen, R., and Liu, J. (2015). Personas: Powerful tool for designers. *Design Thinking: New Product Development Essentials from the PDMA*, 27-40.
- [52] Massanari, A.L. (2010). Designing for imaginary friends: Information architecture, personas and the politics of user-centered design. *New Media & Society* 12(3): 401–416.
- [53] Aoyama, M. (2007). Persona-scenario-goal methodology for user-centered requirements engineering. In 15th IEEE International Requirements Engineering Conference (RE 2007) (pp. 185-194). IEEE.
- [54] Hjalmarsson, A., Gustafsson, E., & Cronholm, S. (2015). Exploring the use of personas in the usercentered design of web-based e-services. *iConference 2015 Proceedings*.
- [55] Cooper, A., Reimann, R. and Cronin, D. (2007). *About-face 3: the essentials of interaction design*. John Wiley & Sons.
- [56] Turner, P. and Turner, S. (2011). Is stereotyping inevitable when designing with personas? *Design studies*, *32*(1), 30-44.
- [57] Korsgaard, D., Bjørner, T., Sørensen, P. K. and Burelli, P. (2020). Creating user stereotypes for persona development from qualitative data through semi-automatic subspace clustering. User Modeling and User-Adapted Interaction, 30(1), 81-125.
- [58] Mulder, S. and Yaar, Z. (2007). *The user is always right: A practical guide to creating and using personas for the Web.* Voices that matter, Berkeley, CA: New Riders.
- [59] Brickey, J., Walczak, S., and Burgess, T. (2011). Comparing semi-automated clustering methods for persona development. *IEEE Transactions on Software Engineering*, *38*(3), 537-546.
- [60] Dam, R., and Siang, T. (2020). Personas–A Simple Introduction. Interaction Design Foundation. Verfügbar unter: https://doi. org/www. interaction-design. org/literature/article/personas-why-and-how-you-should-use-them.[Zugegriffen: 26-Mai-2018].
- [61] Norman, D. (2006). Ad-Hoc Personas & Empathetic Focus. In *The Persona Lifecycle: Keeping People in Mind Throughout Product Design*, 37.
- [62] Djajadiningrat, J. P., Gaver, W. W., and Fres, J. W. (2000, August). Interaction relabelling and extreme characters: methods for exploring aesthetic interactions. In *Proceedings of the 3rd conference on Designing interactive systems: processes, practices, methods, and techniques* (pp. 66-71).
- [63] Dube, J., and Rossi, P. (2019). Handbook of the economics of marketing. Amsterdam: North-Holland.
- [64] Pruitt, J., Adlin, T. (2006). *The persona lifecycle: Keeping people in mind throughout product design*. Burlington: Morgan Kaufmann.
- [65] Sharrock, W., and Anderson, B. (1994). The user as a scenic feature of the design space. *Design Studies*, 15(1), 5-18.
- [66] Ghauri, P. N., and Cateora, P. R. (2009). *International marketing*. New York: McGraw-Hill Higher Education.
- [67] Levinas, E. (1985). Ethics and infinity. Pittsburgh: Duquesne University Press.