Chapter 15
People and Place: Identity Survey and Responsible Design for Architectural Resilient Regeneration Process

Paola Puma and Antonella Trombadore

The Challenge of Immaterial Resilience

A single-minded view of urban development has failed cities, both socially and environmentally. In social terms, this has created fragmented societies that are characterized by increased polarization. New developments have been created at the expense of social exclusion and gentrification, increasing spatial segregation and forcing the formation of deprived neighborhoods, which are often disconnected and hampered by issues of accessibility to basic services. The sustainable development approach has generally oriented toward the choices of architectural design as well as the dynamics of urban transformation, mainly focusing on technological solutions, technics, and materials. Following recent disaster experiences in European countries (earthquakes, floods, and fires), public and scientific debate has focused on the need to enrich the meaning of resilience. If we analyze the problems of the vulnerable contexts, characterized by the large architectural heritage, the environmental fragility, and the strong anthropic pressure or depopulation (i.e., as paradoxically, simultaneously suffered by some cities in the UNESCO heritage list) [1], as well as the material capacity of the cities and buildings to react to the disasters, it has emerged the same priority to implement the meaning of resilience in a new holistic approach oriented to include also the immaterial issue.

To promote the balanced life of the cities, ensure both environmental and social sustainability of built environments, and implement the regeneration of small towns and buildings, enhanced immaterial resilience can become a new driver of the holistic approach, not only for the rehabilitation after disasters but also to avoid immaterial damages. In this framework, we need to stimulate the international scientific debate to analyze and implement a new integrated approach based on the main matter of immaterial resilience, fostering the communities' capacity to take care and

P. Puma · A. Trombadore (✉)
University of Florence – DIDA Department of Architecture, Florence, Italy
e-mail: paola.puma@unifi.it; antonella.trombadore@unifi.it

Fig. 15.1 Two examples of vulnerable contexts: town and city with different identity and resilience

regenerate their habitat from an architectural point of view, as well as their ability to remain *vital* with the aptitude to preserve the socioeconomic context and cultural identity, especially in the townscape symbolic components.

When talking about a holistic approach to the management of urban systems from the resilience point of view, so far it has been considered exclusively for the aspects of resistance to adverse events and attacks—natural or anthropogenic—which only cause material damages. Other types of attacks, however, cause other damage, more difficult to identify and deal with, especially in vulnerable contexts. We refer here to a series of processes that entail risks for urban livability (to name a few, population imbalances, from mass tourism to the abandonment of smaller centers, the loss of multidimensionality of historical settlements, the impoverishment of the functional mix to that of the social mix) because, even if immaterial, they induce transformations in the physical structure of the most fragile urban and architectural organisms, i.e., many small and/or historical towns; inner, distress, or neglect areas; urban situations contributing to the cultural heritage in the field of technical industrial sites; etc. [2] (Fig. 15.1)

Resilience and Sustainability: From Static to Shared Dynamic Vision

For a long time, resilience has been defined as the capacity of a social-ecological system to absorb or withstand perturbations and other stresses, such that the system remains within the same regime, essentially maintaining its structure and functions. Resilience describes the degree to which the system is capable of self-organizing, learning, and adapting. Many recent thematic events have addressed urban resilience in European cities, working in and with cities (Open European Day, Bonn 2018/4/25, by the European Environment Agency (EEA) and Local Governments for Sustainability, ICLEI; European Forum for Disaster Risk Reduction, Rome, 2018/11/21, by UNISDR, EFDRR; IFoU, Reframing Urban Resilience Implementation: Aligning Sustainability and Resilience, Barcelona, scheduled

2018/12/10, by UN-Habitat and Urban Resilience Research Network-UIC) [3]. More contributions focus on questions related to the implementation of adaptation measures than in the past; otherwise the need for exchanging knowledge among cities and creating new forms of collaboration across different policy levels and with stakeholders is tagged as a crucial issue.

Most of the literature refers simultaneously to resilience and sustainable development: both concepts are linked but not identical, and one cannot replace the other. Sometimes, sustainable urban planning reflects a static view of the future and aspires to a stable (fixed) future. While it is often expressed in utopian terms, sustainability is based upon a single slow-moving disaster scenario where humanity runs out of critical physical resources or overshoots the ecological carrying capacity. Resilience represents a more dynamic view of the future where risk, uncertainty, and surprises are the norms and where the increasing complexity, size, and interdependencies of the built environment produce an increasing diversity, frequency, and severity of disaster scenarios.

The existing framework and guidelines that currently direct ongoing efforts at both the European and the international level on the topics of resilience and sustainability [among we cite only the main ones, the 2030 Agenda for Sustainable Development-SDG 11th ("Make cities and human settlements inclusive, safe, resilient and sustainable"); the Convention for the Safeguarding of the Intangible Cultural Heritage, UNESCO, 2003 [4]; intangible cultural heritage and sustainable development, UNESCO, 2015; European Union Global Strategy (EUGS); A Strategic Approach to Resilience in the EU's External Action (Joint Communication to the European Parliament and the Council, Chapter: Resilience, Climate Change and Environmental Degradation), High Representative of the Union for Foreign Affairs and Security Policy, 2017; the New European Consensus on Development, 2017, which links resilience to the EU development agenda], overall, these shows the EU strategies and related actions in this arena are sector-centric and heterogeneous, prioritize natural disaster management, and are solely based on four drivers: leadership and strategies, health and well-being, economy and society, and infrastructures and ecosystems.

Day by day the effects of climate change are visible at urban and building scale, as well as the loss of environmental quality and the reduction of natural resources. A resilience-focused development plan must play into a new urban/building metabolism. When we plan and manage cities as organisms with their own metabolisms, they are not separate entities but, rather, highly interconnected. With a strong network that includes professionals from different disciplines and countries, the network will tackle the most relevant research challenges related to urban resilience conceptualization and implementation (e.g., global warming, resource scarcity, and the well-being of urban inhabitants). Researchers, practitioners, multilateral agencies, and civil and city-to-city learning networks will collectively shape the debates on how to critically understand and integrate different urban resilience implementation approaches and, thereby, will generate more holistic and inclusive urban resilience approaches [5].

Immaterial Resilience and Identity Survey: The Key Role of Architectural Representation

What are the key principles that, at an international level, are the theoretical prerequisites for interaction between immaterial resilience and resilient design?

Which methodological approaches are necessary for its successful development?

The network aims to overcome the state of the art implementing a new approach that links the material and immaterial aspects of resilience. The first one [material] refers to the infrastructures that involve the physical surroundings and landscape that serve a given purpose (e.g., transportation, power supply, water supply, management, and treatment). The second kind, the immaterial resilience, refers to the networks and interactions among individuals and groups, as well as their native habitat within and outside the community. Consensus about which precautionary measures can be seen as appropriate (and which not) is indispensable for the formation of immaterial resilience and should at the same time be understood as the result of collective construction work.

Since the architecture strongly conditions the interactions between people and their places (both within and outside of their community), thus affecting the development of future resilience, the social organization and the knowledge of the population (that suppose the previous education, the education through life, the interaction with the ruling statutes, the authority, the neighborhood police, and the interaction with other kinds of cooperation), help to shape an important dimension of resilience. The classical notion of resilience is based on four principal drivers. Here we propose adding immaterial value (e.g., cultural identity, genius loci, and memory of places) [6] to reinforce and support these established drivers, thereby producing a richer model.

The new model duplicates the existing one for the classic characteristics of material resilience also for the immaterial one. Immaterial resilient contexts could be defined using the same seven qualities of the resilient cities, adapting the model as follows:

- To withstand: robust and redundant, meaning well reacting as we saw the historical architecture and urban structures react to the continuous changes over the centuries
- To respond: resourceful and flexible, using the historical-built heritage as an example of layers of building creative knowledge; reflective, using the experience to inform future decisions
- To adapt faster to shocks and stresses: inclusive and integrated, taking in account the potentiality to share the people's experiences and their "place ownership" to create a community bringing together various stakeholder interests.

The intangible assets of architecture and urban heritage can contribute to environmental sustainability, as major sources of innovation and development. These include traditional buildings and settlements, historical city centers, and all of the

elements in the human environment with notable historical, urban, architectural, social, and aesthetic value [7].

The challenge is how to incorporate the multidimensional values of traditional settlements in a typical and general development plan.

It incorporates physiognomic, morphological, demographic, cultural, urban, and architectural elements that are specific to traditional settlements in such a way that creates sustainable places. Communities and groups innovate in the face of change constantly.

Intangible architectural heritage is a strategic resource to enable the transformative development at the regional and global level. New materials can be adapted to respond to old needs, for example, when certain raw materials become scarce or unavailable. Old skills can provide solutions to new challenges, such as how the time-tested systems of cultural transmission have been adapted to information and communications technologies.

The network will tackle issues related to urban resilience theory development, frameworks, indicators, and metrics, while also navigating these practices through their shortcomings and future challenges. There is a lack of framework and guidelines assessing resilience building strategies to direct practitioners when evaluating how each proposed solution drives a city's patterns toward robustness or transformation, lock-ins or transitions. The network will greatly contribute to addressing this gap by challenging the mainstreaming practices in urban design and management that connect the constructed environment to nature and urban spaces. Information based on national and regional data will be brought together and processed by an interdisciplinary group of professionals. Furthermore, these networking bridges of existing knowledge will create added value at the European level.

The impact will be very high if the People&Place network will achieve the aim to articulate urban immaterial resilience in a *measurable*, *evidence-based*, and *accessible* way that can inform urban planning, practice, and investment patterns which better enable urban communities to valorize and preserve build environment (Fig. 15.2).

People & Place Concept: The Four Drivers

People & Place—as international research platform and network—aims to stimulate interdisciplinary debate on the theme of immaterial resilience, according to an extensive and broader meaning of the consolidated discipline, including the declinations linked to the environmental, social, and cultural sustainability of the transformations of the city: the built environment and vulnerable architectural and cultural heritage. The People&Place network will help to bridge science and society, while supporting a consistent operationalization of the 11th SDG, adding the symbolic dimension of the immaterial risk to the commonly shared hazards list (UNISDR's terminology) when addressing urban vulnerability toward incremental adaptations or transitions in new societal patterns of development.

Fig. 15.2 Graphic representation of City Resilience Index—The Rockefeller Foundation | Arup 2014 [5]

It is interesting to analyze the size and the sense of immaterial resilience related to four different drivers:

1. **Immaterial Resilience # Identity of the context:** describe the identity of the context by introducing the immaterial themes, by bringing out the People&Place relationship, and by pushing the identification of community-based level of resilience.
2. **Immaterial Resilience # Built environmental resources:** define new paradigms of narrative design with territorial patterns capable of describing the environmental system constructed both as a physical habitat and as an "emotional territory"; here we create the link between material and immaterial aspects that constitute the unique/unitary/constitutive characters of a context.

Fig. 15.3 Diagram with the relations of immaterial resilience with four main topics, as research's drivers

3. **Immaterial Resilience # Dynamic design:** investigate different methodologies related to the integrated design process.
4. **Immaterial Resilience # Resilient responsive design:** outline project modalities based on four scalar heavy approaches that can be combined with each other (self-reliant approach; autopoietic dynamics involving gray actions; error-friendly, evolutionary approaches involving green actions; dynamic, responsive approaches based on dynamic imbalance, which provides soft actions closely linked to the involvement of the population) [8] (Fig. 15.3).

People in Their Places

By observing the city, you get to know humans themselves, thereby establishing the unbreakable bond of a person to his/her place (Platone, "Politia," *The Republic*). This vision sees the city's functionality strictly connected to human needs by the ekistic elements, which compose human settlements: nature, man, society, shells, and networks. These five elements, which are embedded in the concept of *entopia*, as "feeling into the place" (C. Doxiadis 1974) [9], bring back the issue of the relationship and interdependence of a person to his/her place, where the human is an integral part of a settlement and inseparably connected to it, imprinted in his place—topos.

The sense of familiarity that binds the inhabitants of a place together and with the context develops over time and gathers all of the social dimensions of the life of a community and its culture. Every day in the city and in the architecture takes place a cultural layering of knowledge, traditions, and rules that constitute it in a continuous, unique, and irreplaceable way: a way to transmit and reflect the cultural notions, associations, and values about how a society thinks about time itself, which encompasses particular morphological and cultural characteristics that highlight the physiognomy of a place. In this relationship, architectural heritage has a role that is not only a testimonial of identity, multiplicity, and cultural wealth but also an element of social cohesion to be protected, as stated by the Sustainable Development Goals (SDG 11.4), the Sendai Framework, and the UNESCO chart [1], because it can contribute to making cities and human settlements inclusive, safe, resilient, and sustainable and it is also a key resource for building disaster resilience.

The Place: Human Built Environment

The places we consider has to be intended as the built environment, including ancient towns, old settlements, cultural landscapes, monuments, traditional buildings, and settlements. In general we include in the built environment all the artifacts having notable historical, urban, architectural, social, and aesthetic characteristics and significance: all places that fuse intangible assets, ideas, practices, and values that create a group's cultural identity (identity, "the perceived uniqueness of a place," "the sense of place") [10]. Considering human settlements as entopias, each context has a particular physiognomy that is connected to its unique entity, as it is expressed through the tangible and intangible landscapes and the perceptual image created by the senses of vision, hearing, touch, smell, and taste.

Furthermore, the Granada Convention made an important distinction in regard to the expression "architectural heritage" that shall be considered to comprise three permanent properties: monuments, groups of buildings, and sites. "Sites are considered to be the combined works of man and nature, being areas which are partially built upon and sufficiently distinctive and homogeneous to be topographically definable and are of conspicuous historical, archaeological, artistic, scientific, social, or technical interest." Therefore, for the first time, protection of architectural heritage overcomes the boundaries of buildings and incorporates intangible elements that, together with the shells (buildings), comprise the concept of site-topos and, by extension, the concept of entopia.

The Identity of the City as Immaterial Value

Immaterial values are intended as the intangible traces of the evolution of human society and settlements over time and were shaped through a diachronic connection of the past, present, and future. Each of these changes constitutes a time layer represented by a material reality in the physical structure of the city. In other words, the image is not only a physical or visual element but also a mental analysis of all components of the city, which reflects the way we use and access our cities. Understanding these layers and their relationship to each other is a crucial factor in understanding the city and sensing its identity. Problems start when something goes wrong in this temporal, spatial structure of the city and a distorted situation becomes prevailing, which causes loss of the city properties and adversely affects its identity and could lead to losing it. Considering that a true understanding of a city passes through a more holistic representation of its genius loci, the "identity survey" [7] methodology will overcome traditional representations that are based on graphical and visual language only. Applications of sensory output of smart devices can serve as a key to access a deeper level of knowledge for a given place pursued as well as the traditional architectural survey even with the multisensory reproduction of the environment. The study of material and immaterial systems

that characterize the historical settlements needs to attempt a discretization more pertinent to the multidimensionality of their elements that define their character in such a peculiar and specific manner.
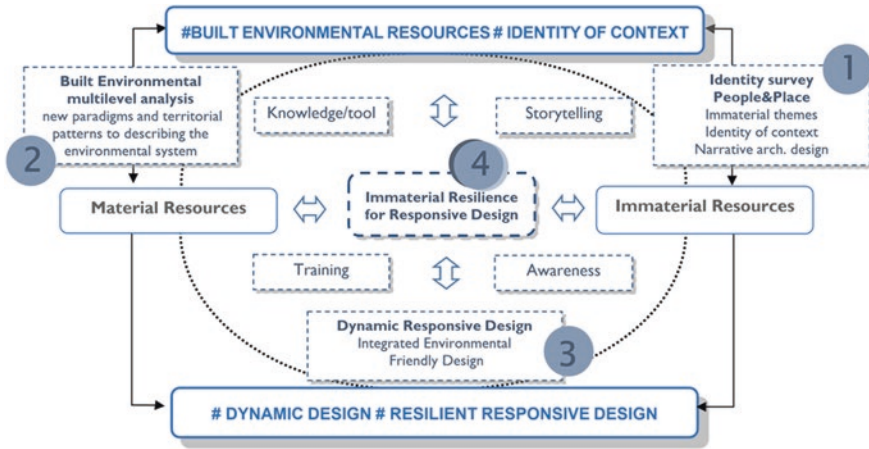
Immaterial Resilience for Responsive Design

The cultural capitals (as nonrenewable resources) represent an exception, and the critical problem's focus of this proposal is aimed at the public and scientific debate, with a focus on the need to enrich the meaning of resilience beyond the material capacity of the cities and buildings to react to disasters. Recently it has emerged the same priority to implement the meaning of resilience including a holistic approach to immaterial issues, knitting together people-centered and place-based approaches into integrated vision that share a common cultural thread. To promote the balanced life of the cities, ensure both environmental and social sustainability of built contexts, implement the regeneration of small towns and buildings, and enhance immaterial resilience are the main drivers for adopting holistic approaches [11].

The growing presence of the term "resilience"—not only in research but also in planning, governance, and politics—shows emerging challenges to all stakeholders. The sustainability debate and the growing awareness in risk research (i.e., referring to architectural historical and cultural heritage) have helped to focus attention on vulnerabilities and the need to create resilience across the scales of urban stocks, buildings, and local townscape and to provide a resilience framework to operationalize resilience by introducing additional tools and concepts from multiple disciplines and fields of application, implementing the new attitude of *augmented cities* [12].

The debate regarding the interaction between SDG 11th "make cities inclusive, safe, resilient, and sustainable" and resilience for mitigating and adapting to the impact of changes and the effects by reducing the key risks that these impacts pose to the built environment has only just been prepared, and some key questions remain open, but the potential contribution of urban design in architecture seems key. In order to move forward in the right direction, we need, first, to carry out a critical review of the main implications involved in our vision and the relative process-based innovations that are useful when examining the importance of the key principles that underpin the issues of "designing resilience" and, second, to examine the potential actions of future processes in urban design (Fig. 15.4).

As described by Prof. Tucci [8], a synergy is required among the three approaches/main categories [gray-green-soft] proposed by UN-Habitat to improve the resilience, mitigation, and adaptation of the built environment, with a particular emphasis on the dynamic-responsive approach. Several approaches, developed at the international level, drive environmentally friendly building design processes (for both new and existing buildings). These are generally oriented to ecological and green architecture integrating sustainable materials but lacking interactions with eco-conscious urban lifestyles. The term "responsive architecture" was introduced

Fig. 15.4 Flowchart of the main topics and multidisciplinary activities related to immaterial resilience

by Nicholas Negroponte [13] who first conceived of it during the late 1960s. A dynamic adaptive approach for resilient responsive design is essential to a healthy and thriving community. Recent research has demonstrated that optimization of a building's dynamic behavior is directly associated with improvement to a city's resilience capacity; however, many cities have stark contrasts in design and maintenance conditions across their neighborhoods. Some areas are thriving, benefitting from easy access to beautiful, well-maintained public assets, meanwhile, others are under-resourced and overburdened by physical disorders. This may also mean engaging diverse groups in the design and decision-making processes. Dynamic adaptive design encourages the introduction of immaterial aspects into the design process and the involvement of all relevant parties, to elevate inclusivity as they envision the future of their community.

The Critical Mass of the Network

The structure of the network has a worldwide dimension and has the critical mass, expertise, and experience necessary to address the project's challenges. The People&Place Action involves a total number of 49 proposers: 84% of these higher education and associated organizations (e.g., universities, research centers); 10% private nonprofit NGOs; 4% business enterprises, companies, and consultings; and 2% government/organizations, from 12 European countries, 5 NNC institutions, and 5 international partners. The network has been conceived involving each proposer looking at its expertise and planning its positioning to efficiently cover the interdisciplinary activities. In order to strengthen the excellence of the network and its capacity to grow in both quality and quantity, the number of proposers is expected to increase
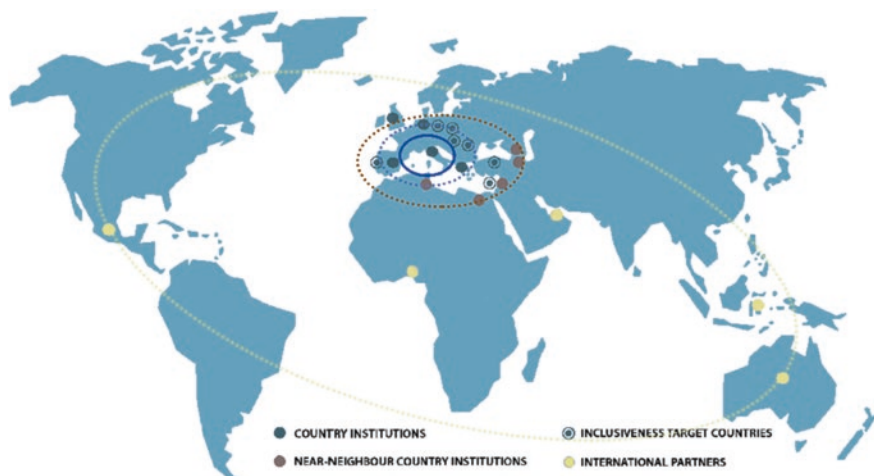
Fig. 15.5 Worldwide distribution of network

over the course of the action. The distribution was planned to achieve maximal diversification in terms of age, academic experience, scientific specialization, and—above all—geographical area, to reflect a variety of cultural and environmental characteristics and vulnerabilities, the mix of nationality, as well as from many disciplines, since the participation will strengthen the dialogue, transfer of knowledge and integration into the international scientific and professional communities.

The network will greatly benefit from the knowledge-sharing and expertise developed by five NNC institution participants and the academic and consulting partners from Asia Minor (three countries) to North Africa (two countries). Their inclusion was deemed to be valuable for many reasons: to share experiences and case studies related to urban transformations resulting from rapid social, economic, and political events, to serve as green and sustainable solution consultants, to analyze the added value of the intangible elements such as the regional and global impact of economic issues, to propose holistic strategies in the field of environmental design that go beyond the trend of green cities, and to contribute to the international seminars by testing the knowledge transfer and local capacity building (Fig. 15.5).

The well-balanced geographical distribution of the countries participating in the network will enable an exchange of knowledge.

Additionally, the network will benefit from the knowledge shared by the five international partners on their region-specific experiences. For example, from Oceania on their local indigenous communities (i.e., environmental psychology), from Asia on their joint international cooperation projects for post-tsunami urban/building actions, from the Middle East on their environmental resource management, from Central America on their networking experiences and efforts toward fostering the development of intangible resources, and from Central Africa on the strong anthropic pressure in their urban/suburban areas and its impact on their culture and resources.

The network's participants will bridge gaps between sectors to accelerate the exploration of the frontier of sustainability; develop new multilevel, interdisciplinary approaches to resilient responsive design; and create realistic, feasible concepts.

The network believes both profitable knowledge and effective governance are needed to create the strong foundations of a sustainable society. To accelerate this goal, the activity is oriented to help develop awareness by sharing knowledge in seminars, publications, workshops, conferences, and training schools.

In order to move from idea to implementation, the network encourages the development of strategies that combine science, creativity, and social entrepreneurship.

The participants will be organized in four multidisciplinary teams, as working groups (WGs) involving the stakeholders from start to finish, and, thereby, identify the concepts with the maximum positive impact and potential for success. For the successful realization of its specific objectives, the People&Place network is articulated into four WGs, where the dimension of immaterial resilience is modulated by the issues of built environmental resources:

- *Identity Of The Context—Identity Survey*, lead by Paola Puma, Unifi, Italy
- *Built Environmental Multilevel Analysis* lead by Helena Coch, UPC, Spain
- *Dynamic Responsive Design—Integrated Environmental Friendly Strategies* lead by Despina Serghides, Environment and Water Research Center of the Cyprus Institute
- *Immaterial Resilience For Responsive Design* [cross-disciplinary group] lead by Alessandra Battisti, Università La Sapienza, Italy

The cross-disciplinary WG will valorize the different methodologies and tools related to the integrated design process [for new construction and recovery interventions], combining different approaches and stressing the involvement of communities (social survey), supporting the identification of integrated solutions for immaterial risk: loss of identity of the places, imbalance [too much/too less presence of people], livability, and evolved ecosystem in the new Anthropocene.

Results and Conclusions

At international level the network will share, homogenize, and implement the knowledge about resilient responsive design, overcoming the current definitions of integrated design [related to the context]; energy-conscious design [focusing on the energy control, sustainable rehabilitation, and reuse strategies]; inclusive design [democratic and participatory processes and inclusivity]; adaptable quality design [flexible enough to adjust itself to changing individual and societal requirements with minimal intervention, focusing on relationship between the creation of quality urban environments and our quality of life]; and responsible design [also directly relates to the EU's 2020 objectives of smart, sustainable, and inclusive growth]. All the actors involved in the urban design process need to acknowledge own

responsibility in creating better environments at different scales. This sets the scene for interventions at the neighborhood and district scales, helping in the formation of community ties that could lead to more active citizen involvement.

Note The paper is written jointly by Paola Puma and Antonella Trombadore.

Referring to the individual chapters, they have been written as follows:

P. Puma—A. Trombadore: 1. | 4. | 5. | 6. |
P. Puma: 3 | 4.1 | 4.3 |
Trombadore: 2. | 4.2| 4.4|

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