



Landscape and urbanisation processes in Ave's Valley Region (Portugal): Inner-orders as expression of territorial resilience and new instruments of planning

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Abstract:

The paper addresses the urbanisation processes in Ave's Valley Region, in the North of Portugal, over the last 60 years as a way to explain the look of a landscape that is hard to visually grasp or coherently describe. As in so many contemporary urban areas that withstood considerable expansion of its urbanisation over the last decades of the 20th century, especially the ones that grew in-between the traditional cities, the outcome is an almost chaotic (dis)organisation, visually marked by the difficult legibility of the logic between buildings and activities settlements, built and non-built spaces, scales of the built objects that stand side by side or the way they (do not) meet.

Traditionally, Ave is a region that is identified with the dispersed urbanisation within the countryside, but from the 1850s industrial era, the distinction between the countryside and the cities started to blur into a globally urbanised territory. Grounded in the rural parcelling system and served by pathways, and more recently also by roads, the diffused location of housing and industry within the territory derives from closely articulated economic processes and socio-cultural features. The textile industry is the head sector of this "industrial district" and the study of its evolution through time when adequately crossed with the urbanisation models is one of the prime instruments to understand the place we focus on.

The framework of analysis follows a dual-approach: the image of the landscape is analysed through its morphological components, as the comprehension of physical form constitutes the main trigger for this paper, but at the same time by a socio-economic perspective that reveals the importance of the facts that really provide an explanation for what we see. The mixing of housing, industry and agriculture inside the same private lot; the multi-activity setting of the inhabitants, or the empiric vs. academic knowledge of the industrial working force are some of the particular aspects that gave form to a very special landscape and that a focus based solely on the aspects of physical form fails to apprehend.

The sum up of the different urbanisation models – as expression of an identity deeply rooted in space – configures a palimpsest that is mainly the outcome of spontaneous processes. More recently, though, this has had to come to terms with an effective planning practice as well as with new economic inputs on territorial organisation. Global vs. local is the jargon that since the late eighties started to establish other «orders» in the territory and its effects added to the visual confusion and lack of legibility. Dealing with it, as we seek for «new» instruments of planning, meant

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founding and revealing a possible inner-order that is hidden but is already there; and this may be a valid extendable principle to other critical aspects of territorial life.

Key words: urbanisation processes, resilience, planning instruments

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The existence of urban areas that have grown beyond traditional city boundaries, holding these within and gathering them into relational systems – from which the continuous urbanisation is one of the most evident outcomes – is not definitely new in urban planning. Today it is globally consensual that the exception presented by P. Geddes in 1915, or J. Gottmann in the 1960's is now a common fact. However, the physical expressions through which they become real are quite different and their geographic place in the world and its background seems to be one of the explaining aspects of that difference (Dematteis, 1998; Gandelsonas, 1999).

This paper focus its study on the North of Portugal, on what some academics call the “diffuse city of the Portuguese NW” (CE-FAUP, 2002), an «object» that in so many ways mirrors an image one got used to recognise as characteristic of the Mediterranean countries of South Europe (Dematteis, 1998; Font, 2004). It is not, nonetheless, the whole *diffuse city* that it is going to be analysed here, as that city covers a maritime strip of about 120km length and 50km width in national ground, but which could extend until La Coruña, in the North of Spain (due to the features both territories share and that allow them to be understood as a bigger system, indifferent to national borders).

The study addresses one of the urban subsystems that constitute the “diffuse city of the Portuguese NW” – the Ave's Valley Region, distinguished for the specificity of its socio-economic and morphologic landscape and where the strength of the inner-orders that the analysis of its evolution through time brings to light as a resilient feature. It is this resilience that allows this case study to feed a part of the debate around which this track sustains itself, showing both the “*need to revisit the arguments regarding physical form and urban design*” and to question “*the applicability of compact city measures in existing urban areas*” that were not born as (part of) cities. To think about and intervene in this area (as in so many others of the Mediterranean contemporary urban systems) demands the compromising effort between the critical but distant analysis, (thus, more objective) and the understanding of local forces acting in place, such as the geographical, economic and socio-cultural ones.

The first approach to this understanding leans on comparative cartographic evolution since the 1950s until 2003² – the period when true spatial mutation happened –, observing the distribution of buildings and paths/roads within the territory, the changing of its density and the (il)logic patterns thus configured. However, if significant visual changes happen later in the landscape, the explaining arguments for this transformation date back to the second half of the 19th century (and even before), when Ave's Valley starts becoming the national leading textile industrial area. The presence of Ave's river and a dense network of water courses made it the ideal place for the delocalisation of

² In terms of population the reference period limit will be 2001, as it corresponds to the year of national population census.

industry from Porto (the main industrial northern hub), as well as for the settlement of brand new units; water was not, nonetheless, the only factor that weighted on the decision – the characteristics of the working force was also determinant to the spontaneous design of what much later would be called an “industrial district” (Domingues, 1999).

Ave³ is an area located in the North of Portugal, NW from both Oporto city and the urban subsystem – the central subsystem of the “diffuse city” – for which that city constitutes the main reference. The *Non-Metropolitan Conurbation of Ave’s Valley* – the second most important subsystem in terms of population had, in 2001 (one of the boundaries of the time period studied), 384,158 inhabitants and “*Occupies an area of 433 km² and extends over 22km in the North/South direction and for about 30 km in the East/West*”⁴ (CE-FAUP, 2002, pp.74). Geographically, the Ave’s subsystem kind of settles within slopes, where population rarely colonizes the territory above the 350m height (Sá, 2009). Under this height, buildings and inhabitants disperse throughout the valley in a pattern that has long been recognized as one of its main and more distinguishable features. Some academics (Sá, 1986) mention it already for the late medieval period, though (being certainly different the meaning of «dispersion» back then and nowadays) what one should grasp are the characteristics that allowed and justified that organization: on one hand, the peaceful climate that did not force the agglomeration due to defensive reasons; on the other hand, the geographic features – the easy topography, the abundant water sources and the fertile soil, characteristics that favoured multi crops. Adding to these, the small dimension of the properties and a dense network of pathways designing their limits were two other aspects that also encouraged dispersion.

The conditions above provided the linen production that until the end of the 18th century made the farmers also artisans (Gonçalves, 1993, pp.3). Since then, this previously marginal task starts to organise into an «activity» and by the end of the 19th century the environment that turns out industry, namely the textile industry, the prime economic sector of Ave’s Valley is settled⁵. However, this fact coexists with the preservation of a close interdependence with the farming fields, a relation that is somehow kept over the years, throughout the 20th century: “*Despite the strong industrialisation of the area one did not observe the abandoning of the fields (which is characteristic in identical situations of great industrialisation) in exchange for an employment in the industrial factory*” (Magalhães, 1984, pp.132).

Apart from the pre-industrial settling of population (that will not be considered here), the general evolution of *modern Ave’s Valley* allows the recognition of two development «models», which result from the interaction between the local economy development and the dominant socio-cultural paradigms, each one being characterised by specific settlement features/principles: (1) the *traditional settlement model*, to which correspond a first type of dispersion of the urbanisation; and (2) the *contemporary settlement model*, which is identified by two simultaneous movements – a second type of dispersion of the urbanisation and an interstitial concentration in specific parts of more dense agglomeration (Sucena-Garcia, 2011).

³ According to the study previously referred: “The diffuse city of the Portuguese NW” (CE-FAUP, 2002).

⁴ All quotations in the paper are a free translation from the author.

⁵ Amaral (cit in Ferrão, 1987) places the pre-historical period of Portuguese industry between the 1st World War and 1940, just then starting the *modern age* of national industrialization.

Generally speaking, the *traditional settlement model* takes place from the mid 19th century until the 1980's, and has its «dispersion» grounded in a strong interrelation between industry, agriculture and housing, normally led by the former and driven by local features (geographical, economic, socio-cultural), which are endogenous to the physical outcome. The *contemporary settlement model*, though embracing the previous one, departs from the preceding model by some specific aspects that start to take place in the 1980's, and is still ongoing. In this sense, the kind of opposite dynamics of «dispersion» (different from the earlier one) and «concentration» that identify it are, in fact, «dispersion *plus* concentration», two sides of the same coin, that show the effects of globalisation and mobility – the new supra-local and supra-national key-words –, but also of planning; local territorial features still showing their strength, even if they have less interference with the recent settling preferences.

2. Socio-economic paradigms and urbanisation models

2.1. The *traditional settlement model*

The *traditional settlement model*, as mentioned above, grows from a close relation with the local productive system. A brief account of its evolution is noted here to better understand its development: when matching some of its stages with their «spatialisation», 4 main periods⁶ stand out (Sucena-Garcia, 2011):

- A 1st period where the proto-industrial activity does not interfere with the organisation of urbanisation, which is primarily related to subsistence agriculture. Commercial concerns do not interfere as the linen production emerges from being a raw-material that is naturally available and is simply used to “*dress the body*” (Alves, 1999, pp.1). The dispersion of population and buildings is justified in agriculture practices and its «requirements», as well as in the size of the fields – a dominant micron-fragmentation of landscape – that is supported by the abundance of water and the easy topography.
- A 2nd period, between the mid 19th century until the late 1950s/early sixties, where the organisation of space – the space «order» – reflects the growing importance of industry, operating at two scales of buildings:
 - The setting of industry as an organised economic activity that develops in their own space generates new typologies, big buildings that settle in close dependence on the energy forces and the specific moments of the manufactured goods production and begin to spread within the territory. At first it is the space closer to the (main) water lines that starts to be colonised by those factories, but when other energetic resources became available – gas run motors, the steam, the electricity – they also start spreading throughout the “*inner farmlands*” (Alves, 2002, pp.375). By then, the concentration of population – and the potential amount of the labour force offer – is deemed as an important decision factor and industry moves into the boundary places between these small agglomerations and

⁶ Sucena-Garcia (2011:132-145) synthesises various phases of the productive system according to the views of several authors; however, when one considers how they impact on space – their «territorialisation» – only 4 periods have significant meaning.

the countryside. Gradually, the national road network and the ease of access will be another decision factor (though far from the importance it will have later on); and industrial buildings spot along the road margins.

- Still characterising this period, at a smaller scale, the production of goods or the development of certain phases of that process happens inside micro-sized units, at home or in workshops. Though not exactly a new circumstance, it has become a more *institutionalised* dependence in relation to the big factory. As Marques (1988, pp.58) states, the move from the linen industry to the cotton industry (a much more interesting raw-material for large scale production) benefited from the specialised weaving know-how, and this was, as previously noted, a skill that was “*non-dissociable from the farmers’ settlement*” (Alves, 1999, pp.2) being as such very spread out in the countryside. In this sense, the industrial production kept and somehow reinforced this original highly disseminated “*location pattern*” (Marques, 1988, pp.58).

- A 3rd period, between the early 1960’s and 1974⁷, that did not however display changes in territorial organisation, namely because the ones registered in terms of industrial production were not yet strong enough to cause it. Nevertheless, for the strength it will have in the following stage, it is important to highlight the emergence of the textile and *clothing industries*, side-by-side with the cotton industry, which will be more significant from the late 1960’s onwards (Gonçalves, 1993, pp.7). This branch of the textile industry that is highly «mobile» in comparison with the more traditional one, both because of its raw material and its goods, is easily compatible with small sized spaces and thus quite indifferent to geographical constraints. During this period, the road network’s attractiveness comes out reinforced as a settling reference to some industrial buildings.

- A 4th period, between 1974 until the early 90’s, that is distinct from the previous ones not by an essentially new way of organising space, but by the reinforcement of dispersion in close association with the growth of the Textile and Clothing Industries (that reaches its peak during the 1980’s). The post-1974 *status quo* gave birth to an exceptional dynamic in terms of the opening and closing of industrial companies (Mendes *et al*, 2001; Marques, 1988), but their small size and the possibility of sharing the same space with housing – inside the house or occupying a part of the lot –, or standing in its close neighbourhood, made it possible for this activity to spread throughout very extensive areas somehow «fading» into the countryside, substantiating a process that discloses a certain (and significant) marginality/informality of the activity and the lack of control over it, namely in visual terms. Anyway, the statement that in Ave’s Valley “*what is already being designated as «diffuse industry» (...) starts to assume great expression elsewhere and not only within the textile industry*” (Portugal, 1988, pp.24) ascertains the recognition of its existence and importance as a *typical* phenomenon. In parallel to this settling logic, another one took place – a “*kind of «concentrated dispersion», mainly fed by relatively big scale companies of the textile sector*” (Quatenaire, 1992, pp.141).

⁷ 1974 was the year of the revolution that changed the dictatorial regime (1933-1974) into a democracy (25th April 1974).

In short, one of the most intrinsic aspects of the *traditional settlement model* in Ave's Valley is the "*subsistence triangle*" (Sá, 1986) – housing, agriculture and industry – which interdependence is fundamental for the survival of both the local productive economic system and the majority of the population – the families – that directly or indirectly depend on/from it. In fact, agriculture, albeit in a gradually weakened state, is the activity that essentially sustains the local economy as it grants the family a relative independence from job insecurity, freeing it from market swings and low salaries and guaranteeing a minimum stability that allows it to cope with moments of industrial crisis; on the other hand, it feeds the productive system that can increase or decrease resources if extra labour is needed or if there is a drop in production, granting it the flexibility that has allowed it to remain in play without having to take on permanent costs it would be unable to bear.

Regarding the physical aspects, the *traditional settlement model* in Ave's Valley matches with the dispersion of population across the Valley, a «dispersion», however, that "*is not homogeneous*" in its territorial distribution, "*occurring with higher intensity in certain areas*" (Sá, 1986); neither is it random, finding its different causes over time in correspondence with the changes of the industrial productive system. In fact, the items above support that Ave's landscape shows "*a proper logic in the location of activities, despite its noticeable «disorder»*" (Quatenaire, 1995, pp.38) being "*the industrial employment (...) what most directly relates to the image of dispersion*" (Portugal, 1988, pp.291).

2.2. The contemporary settlement model

The extensive and diffused model growth of urbanisation that is, traditionally, a characteristic of Ave's Valley shows itself less clearly nowadays. Especially during the 1990's new logics of urbanisation added to the former pattern – new logics for the distribution of activities in space, new logics for the organisation between built and non-built «pieces», new typologies – and whilst they blurred the clarity of the first model, they also made it part of another (and new) one. The *contemporary settlement model* is, thus, an expression that wants to signify the coexistence of different «rules» of territorial settling embedded by essentially distinct socio-economic features. It stands up for a sum of territorial events (more or less reconciled) that time has put side-by-side and which sometimes have in that physical presence the only tying link. It stands up, finally, for a new paradigm that keeps the evidence of the previous one – since it is hard to make *tabula rasa* for territorial facts – and brings both together as the emergence of a new model.

In the early 90's, the development model fed by the expansion of industrial units in space in which Ave's Valley economic production basically sustained – with particular focus during 1985-1992 – was exhausted and rupture was inevitable (Quatenaire, 1995). The effects of a more stable and consolidated democracy as well as the entrance of Portugal in the Economic European Community (EEC), in 1986, established the 80's as a kind of transitional decade where new socio-economic challenges started being designed, clearly affecting the changing of physical territory. In Ave's Valley, industry and agriculture – as tied together activities that sustained local economy and that for over a century had been complimentary, balancing and counterweighing in times of crisis (and resilience) – faced the need for restructuring: on the one hand, the

competitiveness of industry is challenged by qualitative demands that set to question the prior productive system, fundamentally based on quantitative and low-qualified criteria, leading it into a (one more) crisis' period and to the rise of unemployment; on the other hand, legal statistics account for agriculture losing farmers, namely the young ones (Marques, 2004); in both cases it is the growing tertiary sector of the economy that absorbs some of those out of work, offering them more diverse employment opportunities, namely in white-collar and commercial activities⁸.

Still, as happened with the preceding *settlement model*, the economic aspects come as an important justification for the transformation of «spatialisation». In a very simplified description, the economy tertiary sector mentioned above reached unknown dynamics and levels of development due to new consumption habits as well as to new demand for facilities, both aspects supported not only by the general improvement of post-democracy standards of quality of life, but also by political self-imposed goals under a state-providence design. In terms of territorial changes, one of the immediate consequences was the reinforcement of agglomeration through public investment on community facilities – schools, hospitals and health care local units, administration and local government representation, etc. – mostly directed to central urban areas or to their immediate periphery. Retail, as well, tend to follow the same guidelines as they also depend on proximity relations with inhabitants, but it goes further and expands to secondary agglomerations as well or, depending on the goods it sells, establishes further afield following the human colonisation of the Valley⁹.

This procedure, in fact, relates already with the reinforcement of the «opposite» settling dynamic – the dispersion pattern – that has in the trivialisation of the car ownership/use its main triggering aspect, soon followed by the ordinary use of telecommunication devices – mobile phones and the internet. In Portugal, the 80's witnessed the strength of the physical mobility with the increasing of private transportation ownership; the 90's saw it grow stronger as a consequence of the highway road network, favoured and largely supported by EEC funding in basic transport infrastructure, at the same time as it behold the emergence of virtual mobility, that became an ordinary fact during the 2000's. Dispersion as an urbanisation pattern kept, therefore, its presence in Ave's Valley, but its underlying motives were no longer the “*productive triangle of activities*” (Portas *et al*, 1990). New ways of perceiving and occupying territory are now driven by more globalised trends related to the seizing of new mobility conditions and corresponding socio-cultural patterns concerning the organisation of everyday life. Nonetheless, this pattern does not find any longer its main reasons in an intrinsic relation with territorial features: people choose to live in a specific place for a number of reasons, and though in certain cases there may still be some emotive ones behind/driving the choices, these are mostly the compromising effect between family needs (employment, school), financial arguments and opportunities.

Beyond «agglomeration» and «dispersion», these globalised aspects gave birth to a new territorial settlement typology, even if, again, it shapes like a kind of «concentrated

⁸ Regarding the increase of employment in tertiary activities in this area, one has to be aware of the relative fragility of this statement as part of it was supported by low level qualifications' employees, who were the great majority of ex-farmers and industrial workers that got a job in it; nonetheless, this is also the economic sector that most benefits from the post-1974 investment on education (Mendes *et al*, 2001).

⁹ Though this is not exactly an original aspect for this settling model, it comes out strengthened by the new circumstances.

dispersion» pattern, previously registered regarding the close settling of some medium/big scale textile industries. Nowadays, it preferentially occurs around highway nodes, sometimes extending to some of the main roads of the national road network, and joins together large scale commercial, industrial and/or logistic related buildings surrounded by large parking space areas. Large industrial areas and technological parks are also different topics for this «concentrated dispersion», for which easy access to the main highways is determinant, even if they do not always locate around those nodes (Portas *et al*, 2003; Portas *et al*, 2011).

Adding to the aforementioned present-day facts, one must have in mind that the contemporary settlement model of Ave's Valley keeps within the previous one, thus being the outcome of a cumulative process where the pre-existences from an obsolete past, the ones from a traditional but still dynamic past, and the emergent facts ruled by recent socio-economic paradigms share the same place; the result is the sum up of different and concurrent situations taking place side-by-side – of regression, stabilised situations, in mutation, embryonic situations –, a *palimpsest* that is not easily understood in terms of its physical effects, an apparently chaotic landscape that needs to reason within the arguments for its visual control and legibility. Nonetheless, what seems to be clear at this point of the study is that Ave's Valley has grown into an urban system over time, mostly sustained by spontaneous processes, holding inside both *rural* and *urban* aspects, in truth the essence of its landscape. In this sense, rather than seeing them like a controversial and opposed duality – as traditionally they would be considered – one needs to face “*rural* and *urban*” as the basis of a «different» reality, the specific and «new» feature of Ave's Valley (and of so many other contemporary urban systems worldwide) to which Planning has to address and, find adequate responsive instruments.

3. Territory's inner-orders and Planning

Planning, as an instrument of territorial control, is recent in Portugal. The first master plans –*Municipal Master Plans* – came to light in the early 90's, packed with the uncertainties, good will and mistakes usual of the first and still inexperienced steps. Ave's Valley¹⁰, even if within the same general framework, embraced however an exceptional procedure. A group of professionals, which included architects, engineers, geographers, some of them academics, who had dedicated part of their learning experience to the understanding of this specific territory as a «territorial unit», despite it being encroached into different municipal administrative limits, were set to lead some of the technical planning teams engaged in this initial planning process, that took place in the late 80's. This experience was in fact an opportunity to question some ordinary planning instruments in the light of the specificities of urbanisation patterns in the area, like zoning, dispersion vs. agglomeration, or the meaning of transferable planning models to the municipal border areas. However, what really made it special was the search for both an effective inter-municipal articulation (grounded on the *characterisation of* and the *reasoning about* that territory as a whole) and analogous development premises for the distinct (municipal) planning units.

Aside from the individual pathways and layouts of each municipal planning, the Ave's Valley vocation for both dispersion and the mix of activities were consensually

¹⁰ At that time, in the early 90's, the three main municipalities of Ave's Valley: Vila Nova de Famalicão, Santo Tirso and Guimarães.

recognised as the two main idiosyncrasies of the area, which plans' regulations should have to address in specific ways: the first one – the dispersion pattern – was to be controlled under certain guidelines and some limits' definition; but the later – the mixing of activities – would be encouraged (if compatible), refusing the ordinary trend to mono-functional zoning, under the argument that it grounds a diversity that contributes to territorial balance. The evaluation of the results of that “*first generation of plans*” made by the municipal planning teams, that took place since the mid 2000's when those were set under their mandatory revision process, shows the general control of the urbanisation, as intended, and validates the consequences of the mixing of activities (CMST, 2008). However, master plans failed to restrain the general visual image of chaos that still embodies Ave's Valley and to imprint some ordering elements into the landscape, thus disclosing the inadequacy of the municipal level of planning to manage some important contents for the discipline of the urban territorial system. In fact, to deal with the various dimensions and the inherent complexity of the extensive and «continuous» urbanised areas, an operative intermediate level of decision-making is required, besides a wide understanding of the territorial interactions that goes way beyond the pre-established administrative borders.

In Portugal, however, «regions» have not a legal recognition and thus the lack of a valid jurisdictional entity capable of leading the supra-municipal processes, articulating them, whenever necessary, with the national, though sectorial, programmes of intervention, (regarding, for instance, decision about the main road network, hospitals, etc.) prevents a regional strategy being laid out for referential elements. Concerning Ave's Valley, the road network is precisely one of the most pertinent potential ordering aspects, as the area is characterised by an extremely dense set of roads, streets and pathways inter-playing, that despite their distinct physical features assume similar, and thus frequently inadequate, roles. The lack of clarity and discipline of potential structuring elements and their interrelation is, therefore, one of the main causes for the Ave's Valley chaotic image, one that demands different and simultaneous scales of intervention. Taking this item as an example for the reasoning about the “*need to revisit the arguments regarding physical form and urban design*” and “*the applicability of compact city measures in existing urban areas*” one could say that some of the general key-words and key-strategies commonly accepted to plan the traditional/compact city keep their meaning in this changing scenario, but its different scale demands a whole new set of operational instruments yet to be discovered.

Road network, for instance, would still need a certain level of hierarchy, eventually embodied with distinguishing and specific design principles, in order to guide the inhabitant within the actual dispersed and fragmented urban areas. The system, however, would have to reconcile macro and micro dimensions, being aware that the defining guidelines would have to take into account the new measuring units that build and operate the new urban areas. The car related distances replaced the pedestrian references and public space cannot be designed any longer under the previous guidelines as it does not support the former uses. Something as essential to the compact city public space design as the *sidewalk*, for example, is generally unnecessary for the urban areas that grew in-between those compact cities. In this sense, this understanding gives place to a paradox: on one hand, public space is one of the main landscape unifying elements, able to provide certain peacefulness for the uncontrollable post-modern diversity of the built environment; on the other hand, the arguments to qualify it are mostly unknown.

Reasoning was made about road network, but a similar one could be made about the hierarchy of «central places», another precious argument to the compact city planning: again in a very different scale, the need for a polycentric environment to be linked and organised inside hierarchical principles according to the distribution, for one side, of basic facilities, and for another, of more exceptional ones, would globally provide a desirable isometric territorial balance; but the “*interesting distances*” (Solà-Morales, 2009) between the constituent «pieces» of the various hierarchical levels, taking into account the recent mobility criteria, always more individual, is also yet to be found. In both cases, the knowledge about the real uses of local territory – of its *inner-orders*, the most persistent and intrinsic interactions between territorial facts and inhabitants – will provide the answers. As long as preconceived ideas, perceptions and theories are left aside and, instead, it emerges an opening attitude that starts by understanding *heritage* as an active and fruitful planning instrument – a matter for further research.

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