

## From economic crisis and climate change through COVID-19 pandemic to Ukraine war: a cumulative hit-wave on adolescent future thinking and mental well-being

Michele Poletti<sup>1</sup> · Antonio Preti<sup>2</sup> · Andrea Raballo<sup>3,4</sup>

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Future thinking is a core human cognitive feature which supports individuals in envisioning themselves beyond the here and now of present contingencies [1]. Future thinking changes along development, so that fantasy, creativity and weaker reality testing are preeminent in shaping such activity during childhood [2], whereas familial and professional life planning come to the fore in adulthood [1]. Clearly, future thinking plays a special role in adolescence, when it is less impregnated with fantasy than in childhood and gradually more based on reality representations: in this developmental stage, future thinking represents a foundational component of the psychological identity structuration that progressively catalyzes the transition towards adulthood [3]; in such transition adolescents have to integrate their thoughts on the future with their present, to set goals and make decisions with cascading influences in later life opportunities [4]. Conversely, a failure in this crucial developmental step is a significant risk factor for school drop-out, delinquency and negative mental health outcomes [5].

Although individual factors and familial determinants deeply influence adolescent future thinking [6], epochal contingencies play a crucial role in shaping the way future societal scenarios and related potential individual achievements

Michele Poletti michele.poletti@ausl.re.it

- <sup>1</sup> Department of Mental Health and Pathological Addiction, Child and Adolescent Mental Health Service, Azienda USL-IRCCS Di Reggio Emilia, Reggio Emilia, Italy
- <sup>2</sup> Department of Neuroscience, University of Turin, Turin, Italy
- <sup>3</sup> Section of Psychiatry, Clinical Psychology and Rehabilitation, Department of Medicine, University of Perugia, Perugia, Italy
- <sup>4</sup> Center for Translational, Phenomenological and Developmental Psychopathology (CTPDP), Perugia University Hospital, Perugia, Italy

are envisioned. In this respect, the contemporary global outlook in which adolescents project their future has been rather grim and uncertain.

First, since 2008 socioeconomic crisis, the tacit certainty of a progressive, never-ending economic improvement (by which each generation aspires to an increased well-being and welfare in comparison to the previous one) has received a tangible hit. Therefore, future thinking about individual goals such as finding a stable job and gaining economic independence from the family has started to be more pessimistic than as compared to previous generations, with ascertained effects on mental health [7].

Second, climate changes are increasingly perceived as a progressively more imminent threat, with catastrophic meteorological events becoming more frequent and global warming more tangibly perceived as a serious hazard, impacting for example crops as well as glaciers and coastal zones. The worldwide phenomenon of Youth for Climate and the Fridays for Future initiatives signal how much adolescents and youth are aware and concerned by climate changes [8].

Third, COVID-19 pandemic and consequent school closures and lockdown exposed adolescents and young adults to an unprecedented stress test involving compulsory isolation, whose long-lasting effects on mental health are increasingly reported worldwide, despite the descending parable of the pandemic itself [9].

Lastly, although wars have never ceased worldwide after WWII, the recent, ongoing, conflict in Ukraine, has induced a global geopolitical fibrillation, with consequent shockwaves across Western and Eastern countries, and the latent threat of further escalation into a global, third world war or a widespread nuclear conflict. The very fact that war atrocities and massive refugees' crisis are happening at the centre of Europe has broken the prolonged illusion that after WWI and WWII, the centre of the Western world was somehow immune to the unconceivable option of war as a way to solve diplomatic disputes between nations. Crucially, the potential traumatogenic effects of such situations [10], are not limited to Ukraine but are amplified by the continuous "in vivo" media exposure of violence and utter despair [7].

In conclusion, in the last 15 years, several worldwide phenomena affected the societal side of future thinking, potentially inducing a pessimistic constraint particularly excruciating for adolescents, whose delicate developmental phase is more critically dependent on such future envisioning as compared to children and adults. While each of these worldwide phenomena engenders established risk factor for adolescent mental health and well-being, the burden of their cumulative effects on mental health might be even more severe, especially in terms of epidemiological increase of psychopathological manifestations and transgenerational impact.

## Declarations

**Conflict of interest** On behalf of all authors, the corresponding author states that there is no conflict of interest.

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