



Mimetic Mechanicity: The *Iron Foundry* and Vernacular Internationalism in the 1930s

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Abstract

In the 1930s, the *Iron Foundry*, a short orchestral piece by the Soviet composer Aleksandr Mosolov, became hugely popular with audiences across Europe, North America, and beyond. Reassembling the fragmented archives of its performance and reception histories, this article sets out to follow the work on the circuitous routes that ensued. Addressing issues including programmaticism, the reception of Soviet music, and the history of comedy, I show how Mosolov's composition became a lightning rod for larger debates about concert music's relationships with modernity, politics, and mass entertainment. The case of the *Iron Foundry*, I suggest, illustrates how the pleasures of machine aesthetics – and, more specifically, a stylized idiom of mechanized gesture distinctive to the period – became widely assimilated into what we might call the vernacular internationalism of the interwar middle classes.

The machine was a dominant trope of interwar modernism. As a compelling, if often amorphous, symbol of the present, it proliferated freely across different locations and art forms: from Berlin to Mexico City and Tokyo, from avant-garde poems to architectural drawings and cabaret revues. In the concert hall, one product of the machine vogue was a new sub-genre: compositions that used traditional orchestral instruments to depict the noisy technologies of production and transportation characteristic of early twentieth-century industrialism. Arthur Honegger's *Pacific 231* (1923), named after a class of high-speed locomotive, remains probably the best-known example.¹ Such works have long captured the imagination of musicologists, partly because they raise, in a distinctive guise, fundamental questions about the nature of musical representation and partly because they offer enticing opportunities to draw connections with the historiography of modernism in other disciplines.

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- 1 Others include: Edgard Varèse, *Amériques* (1921, revised 1927); George Antheil, *Ballet Mécanique* (1924); Vladimir Deshevov, *Rél'si* ('Rails', 1926); Sergey Prokofiev, *Le Pas d'Acier* ('The Steel Step', 1926); Frederick Shepherd Converse, *Flivver Ten Million* (1927); Maurice Ravel, *Boléro* (1928); Dmitry Shostakovich, *Bolt* ('The Bolt', 1931); and Carlos Chávez, *H.P.* (1932).

The resulting scholarship has explained the appeal of industrial technologies to composers in search of post-Romantic modes of expression, highlighting affinities with broader artistic movements such as Futurism and New Objectivity, and shown how ideas and techniques associated with machine aesthetics in other media were translated into musical conventions.²

As such research has demonstrated, at least implicitly, the early twentieth-century machine aesthetic was impressively mobile. It had an exceptional capacity to traverse national frontiers and other apparently fixed cultural boundaries. In music, there is perhaps no better example of this tendency towards expansive, unruly circulation than a short orchestral work by the Soviet composer Aleksandr Vasil'yevich Mosolov (1900–73): *Zavod: muzika mashin* ('Factory: The Music of Machines', 1927), usually known outside Russia as the *Iron Foundry*. Insofar as the prominence of machines in early Soviet modernism across the arts registered a broader preoccupation with 'Americanism' – and, in particular, with the functional and aesthetic qualities of Fordist practices of mass production – Mosolov's choice to write a piece of music about a factory had been catalyzed by a rich seam of cultural mobility.³ But what makes the *Iron Foundry* truly remarkable as a transnational historical phenomenon is its life outside the Soviet Union. Although Mosolov is an obscure figure today, his name was once much more widely known. From 1930, his machine-inspired composition followed in the tracks, so to speak, of *Pacific 231*, and became hugely popular across Europe, North America, and beyond. While its fame lasted, few other works of contemporary orchestral music enjoyed such widespread interest and acclaim.

This article sets out to follow the *Iron Foundry* on its circuitous routes in the 1930s. The work's success was the outcome of an explosively productive convergence of institutional structures, modes of listening, and compositional idiom. Tracking the interplay between these factors, I ask why Mosolov's machine aesthetic appealed so powerfully to audiences and how it lent itself to widespread circulation. Reassembling the fragmented archives of its performance and reception histories, across an expansive geographical scope, reveals how the work became a lightning rod for larger debates about concert music's relationships

2 Some notable studies are: Glenn Watkins, *Soundings: Music in the Twentieth Century* (New York: Schirmer Books, 1988), 235–52; Erik Levi, 'Futurist Influences upon Early Twentieth-Century Music', in *International Futurism in Arts and Literature*, ed. Günter Berghaus (Berlin: Walter de Gruyter, 2000); Deborah Mawer, 'Musical Objects and Machines', in *The Cambridge Companion to Ravel*, ed. Deborah Mawer (Cambridge: Cambridge University Press, 2000); Carol J. Oja, *Making Music Modern: New York in the 1920s* (New York: Oxford University Press, 2000), 59–94; Karin Bijsterveld, *Mechanical Sound: Technology, Culture, and Public Problems of Noise in the Twentieth Century* (Cambridge, MA: MIT Press, 2008), 137–58; Egon Voss, 'Pacific 231 – reine Programmusik oder doch ein Stück absoluter Musik?', in *Arthur Honegger: Werk und Rezeption / L'œuvre et sa réception*, ed. Peter Jost (Bern: Peter Lang, 2009); Carol A. Hess, *Representing the Good Neighbor: Music, Difference, and the Pan American Dream* (New York: Oxford University Press, 2013), 50–80. For a more general overview of the machine 'topic' in the United States in the early twentieth century, see Allison Wentz, 'Queue the Roll: Taylorized Labor Practices and Music of the Machine Age', *Music Theory Online* 24/4 (2018), <https://doi.org/10.30535/mt0.24.4.7>.

3 Richard Stites, 'Man the Machine', in *Revolutionary Dreams: Utopian Vision and Experimental Life in the Russian Revolution* (New York: Oxford University Press, 1989).

with modernity, politics, and mass entertainment. Extricated from more panoramic narratives about noise in twentieth-century music and sound art, on the one hand,⁴ and specialist studies of Soviet music, on the other,⁵ the *Iron Foundry* has much to teach us not only about the interwar machine aesthetic and its distinctive pleasures, but also about how the many listeners and critics who encountered it understood the forms and functions of culture in a machine age.

Wherever it went, the *Iron Foundry* posed the same basic dilemma: how to interpret the spectacle of a symphony orchestra imitating industrial machines. This quasi-programmatic gambit ostensibly established a straightforward stance towards modernity: ‘music that expresses contemporary life’, as one critic had it.⁶ Yet in practice its meaning proved contentious and surprisingly difficult to pin down. The *Iron Foundry* transformed the orchestra into a factory, but not one that actually produced material commodities; mimetic similitude bridged the difference between a musical ensemble and heavy machinery, but did not erase it. For listeners, this play of presence and absence generated several layers of paradox. After a brief survey of the work’s sudden ascent to world renown, I draw out the underlying logics and stakes by moving through a series of unstable binary oppositions in a sequence of increasing complexity and scope: the ultra-modern and the primitive, the particular and the universal, artistic creation and mechanical reproduction, modernism and mass entertainment.⁷ Finally, I shift to a more diachronic perspective to consider the *Iron Foundry*’s fading appeal at the end of the 1930s, when the larger paradigm of machine aesthetics to which the work belonged started to break down.

Throughout, I will be particularly concerned with the status of machine aesthetics as an international idiom – and, more than this, as an idiom of internationalism. My claim is not simply that machine aesthetics was ‘transnational’, which is to say, that it was carried and transformed through networks and patterns of circulation exceeding the bounds of any one nation or state.⁸ It is, rather, that through the combination of its subject matter and its capacity to generate, or make visible, transnational mobilities and entanglements, machine-inspired art and culture invoked and helped to sustain larger narratives about technology’s contribution to international politics. The word ‘internationalism’ is thus pertinent here not so much as a category of institutions or other collective projects, but as a shorthand

4 Such as Robert P. Morgan’s claim that Luigi Russolo, the Italian Futurist, ‘initiated an important and enduring line in twentieth-century music, regardless of specific, much less acknowledged influence’ – a lineage of notated ‘noise’ in which he includes not only Honegger and Mosolov, but also Cage and Penderecki; Robert P. Morgan, “‘A New Musical Reality’: Futurism, Modernism, and ‘The Art of Noises’”, *Modernism/modernity* 1/3 (1994), 141.

5 Such as Larry Sitsky, ‘Aleksandr V. Mosolov: The Man of Steel’, in *Music of the Repressed Russian Avant-Garde, 1900–1929* (Westport, CT: Greenwood Press, 1994); and Levon Hakobian, *Music of the Soviet Age, 1917–1987* (Stockholm: Melos Music Literature, 1998), 48–56.

6 Robin Hey, ‘Music That Expresses Contemporary Life’, *Radio Times* 32/406 (10 July 1931).

7 The framework is inspired, in part, by Hans Ulrich Gumbrecht’s synchronic account of the year 1926, in which he describes a transnational cultural environment structured by a series of volatile ‘binary codes’; Hans Ulrich Gumbrecht, *In 1926: Living at the Edge of Time* (Cambridge, MA, and London: Harvard University Press, 1997).

8 Patricia Clavin, ‘Defining Transnationalism’, *Contemporary European History* 14/4 (2005).

for a broader (and more diffuse) set of attitudes and assumptions about geopolitics and the path of world history.⁹

The *Iron Foundry*'s origins in Moscow are clearly significant here. After 1917, the Soviet Union became the new centre of gravity for a vibrant tradition of internationalist thought and activism on the Left – a tradition in which industrial technologies, and factories in particular, played a foundational role (as actual and emblematic sites of the exploitation of the urban proletariat, on the one hand, and of the development of class consciousness and alternative political economies, on the other). The *Iron Foundry* always remained to a significant degree associated with politics of this kind, even if the meanings attributed to the association were often ambiguous or seemingly contradictory.

Yet that was not the whole story, or perhaps even the main one. In the quintessentially 'bourgeois' concert culture of the capitalist West, where the *Iron Foundry* enjoyed much greater success than within the Soviet Union, the basic values and discourses of liberal internationalism were normative. Although this intellectual and political tradition was fundamentally opposed to the internationalisms of the Left, the two camps nonetheless shared some important preoccupations and enthusiasms, one of which was the transformative potential of modern technology.¹⁰ No less than their socialist and communist counterparts, early twentieth-century liberal internationalists depicted their cause as the inevitable future outcome of an unfolding trajectory of social evolution. Modernity, they argued, had enabled the formation of larger and larger human collectives: just as the national community had become a lived reality, an international community would surely emerge.¹¹ New technologies, such as the telegraph and the aeroplane, were usually presented as the primary drivers of this process.¹² The teleological thrust (and hubris) of such thinking is exemplified by Henry Ford's utopian prediction in 1928 that the development of machinery would ultimately engender a global polity: the United States of the World.¹³ For others, of course, such a scenario implied the brutal erasure of national traditions, belonging, and sovereignty: an extension, at the level of geopolitics, of the modern machine's nightmarish potential to induce alienation and conformity.¹⁴

9 As the historian Daniel Laqua has noted, for its exponents in the early twentieth century, 'internationalism did not simply denote a set of beliefs and practices: it described their perception of a particular historical process'; Daniel Laqua, *The Age of Internationalism and Belgium, 1880–1930: Peace, Progress and Prestige* (Manchester and New York: Manchester University Press, 2013), 4.

10 The entangled intellectual genealogies of liberal and socialist internationalisms and the interwar rivalry between the two are sketched in Mark Mazower, *Governing the World: The History of an Idea* (London: Penguin, 2012), 31–64, 154–88.

11 Glenda Sluga, *Internationalism in the Age of Nationalism* (Philadelphia, PA: University of Pennsylvania Press, 2013), 1–7, 11–18.

12 Waqar Zaidi, 'Liberal Internationalist Approaches to Science and Technology in Interwar Britain and the United States', in *Internationalism Reconfigured: Transnational Ideas and Movements between the World Wars*, ed. Daniel Laqua (London and New York: I.B. Tauris, 2011).

13 Henry Ford, 'Machinery – The New Messiah', *The Forum* (1928), cited in Frank Mehring, 'Welcome to the Machine! The Representation of Technology in *Zeitoper*', *Cambridge Opera Journal* 11/2 (1999), 170.

14 Some European writers expressed such fears in terms of the need to resist 'Americanism'. For a cross-section of the debate in Germany, see Ch. 15, 'Imagining America: Fordism and Technology', in *The Weimar Republic*

Anxieties of this kind were not entirely unjustified. For all the talk of mutually beneficial cooperation, power and prestige were decisive factors in how internationalist schemes and institutions came to be directed, and for whose benefit. The history of liberal internationalism in the twentieth century was profoundly imbricated with that of imperialism – to the point where it is almost impossible to say where one ends and the other begins.¹⁵ At the same time, and without underestimating the strength and significance of that connection, we should also be cautious of reducing the complex and sprawling histories of internationalism and machine aesthetics to a single master narrative of domination. One risk of doing so would be to lose sight of the sheer enjoyment that audiences gained from artworks and performances such as the *Iron Foundry*. For certain groups, and for better or worse, encountering machines in music and other media was above all *fun*.

In this very collision, or synthesis, of the whimsical and the serious, the case of the *Iron Foundry* illustrates how the pleasures of machine aesthetics – and, more specifically, a stylized idiom of mechanized gesture distinctive to the period – became widely assimilated into what we might call the vernacular internationalism of the interwar middle classes. ‘Vernacular’ here is inspired by the film scholar Miriam Hansen’s use of the term as one that ‘combines the dimension of the quotidian, of everyday usage, with connotations of discourse, idiom, and dialect, with circulation, promiscuity, and translatability’.¹⁶ Attending to the intensive dissemination of the *Iron Foundry* in the 1930s as a vernacular phenomenon in all these respects, I aim to excavate the aesthetic and sensory dimensions of a mode of belonging to the modern world that was distinct from, but also buttressed and intersected with, that of the elite individuals and institutions which have tended to predominate in the study of cultural and political internationalism.¹⁷ For a defined period, I suggest, Mosolov’s modernist aesthetic met a particular kind of popular hunger for ‘international’ experiences: one that was inextricable from a fascination with mechanicity and its effects on the human body.

Networks and trajectories

On first listen, the *Iron Foundry* might not seem an obvious candidate for popular success. The work begins with an array of ostinato cells: a snaking chromatic figure in the clarinets and violas is set against groaning basses, tuba, and contrabassoon, and pounding tritone crotchets in the timpani. Further repeated motifs are gradually added, building a texture of

Sourcebook, ed. Anton Kaes, Martin Jay, and Edward Dimendberg (Berkeley, CA: University of California Press, 1994), 393–411.

15 Susan Pedersen, *The Guardians: The League of Nations and the Crisis of Empire* (New York: Oxford University Press, 2015); Glenda Sluga and Patricia Clavin, eds, *Internationalisms: A Twentieth-Century History* (Cambridge: Cambridge University Press, 2017). Liberal internationalism’s complicity with imperialism is also a key theme in Tamara Levitz’s account of the early history of the American Musicological Society (founded 1934); Tamara Levitz, ‘The Musicological Elite’, *Current Musicology* 102 (2018).

16 Miriam Bratu Hansen, ‘The Mass Production of the Senses: Classical Cinema as Vernacular Modernism’, *Modernism/modernity* 6/2 (1999), 60. I return to Hansen’s account of early twentieth-century cinema later.

17 In history, a landmark study is Akira Iriye, *Cultural Internationalism and World Order* (Baltimore, MD, and London: John Hopkins University Press, 1997).

increasing complexity, dissonance, and clamour. This dense mesh of recurrent patterns provides the backdrop for two devices of orchestration often commented on in the 1930s. The first is the blazing entry of the horns, which marks the climax of the opening section's process of accumulation: entrusted with a relatively expansive quasi-modal theme, in contrast to the churning chromatic activity around them, they are instructed not only to play their unison line *fortississimo*, but also to stand and raise their bells in the air. The effect evokes at once the blasting of factory sirens and a massed cry of triumph – or, perhaps, something more ominously violent.¹⁸ The other notable device comes at the return of the ostinato-based texture after a faster, more freely composed interlude: at this pivotal moment in the simple ternary structure, an actual sheet of steel is introduced into the percussion section (Figure 1).¹⁹ The large plate of metal is shaken and hammered to add a loud, unpitched rumble to an already pummelling tumult of timpani, cymbals, bass drum, and tam-tam. The unusual 'instrument' appears to collapse the distinction between the subject matter announced in the work's title and its musical representation. It is almost as if, through its frantic labouring, the orchestra itself has forged the steel.

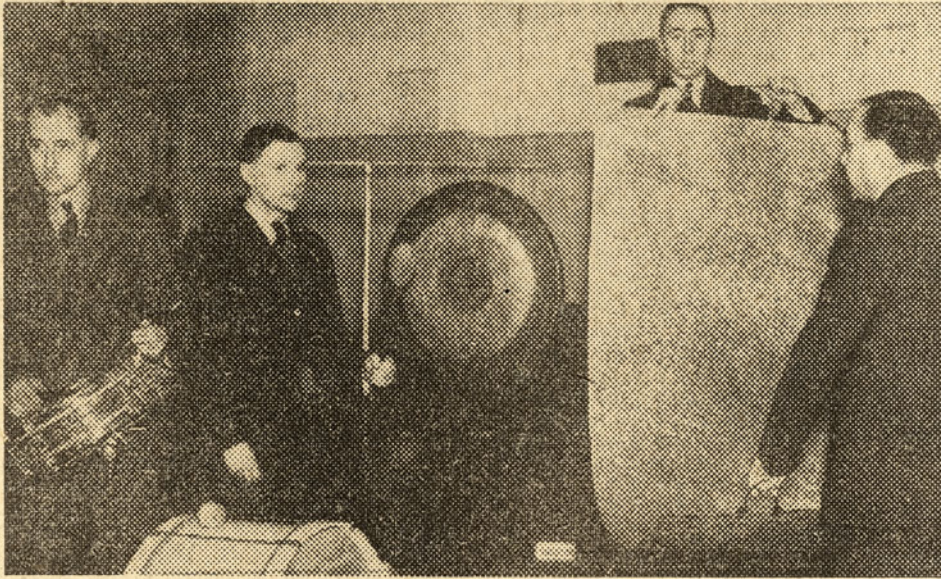
The circulation of this ferocious music – its transformation into an unlikely hit – illustrates how the newly formed local and transnational networks that sustained musical modernism after the First World War depended on their interconnection, and offers a rare example of a work making the leap from that relatively exclusive domain to a more public and commercial one. In the early Soviet Union, the leading body for the propagation of modernist music was the Moscow-based Association for Contemporary Music (Assotsiatsiya sovremennoy muziki, ASM), founded in 1923. ASM was affiliated with the International Society for Contemporary Music (ISCM), an organization established in Salzburg a year earlier, and known for its influential series of contemporary music festivals. One function of the ISCM's annual gathering, which was held in a different city each year, was as a site of display and discovery: it showcased works and composers, often previously obscure, to an international audience including performers, critics, publishers, and other new-music insiders. A platform of this kind was especially valuable to composers from the 'peripheries', who otherwise faced an uphill struggle for recognition from the centre.

The centre–periphery dynamic was evident in the case of the Soviet Union, although the musicians associated with ASM hardly needed help to 'keep up' with the West. In the 1920s, they had ample opportunities to hear the kind of repertoire performed at ISCM

18 The siren was an aural signature of the interwar machine aesthetic. Real factory sirens were used in other machine-inspired works from the period including Shostakovich's Symphony No. 2 ('To October'), also from 1927.

19 The size of this object and the techniques for producing sound from it seem to have varied. In a wry account of the performance at the 1930 festival of the International Society for Contemporary Music (an event discussed extensively later), Imogen Holst described how the metal sheet 'was fixed in a vertical and somewhat perilous position, and was worked to and fro by a foot lever. Unfortunately, the player was rather too short for his instrument, and his anxious face kept bobbing up and down over the edge of the sheet of iron, while he endeavoured to keep an eye on the conductor'; quoted in Christopher Grogan and Rosamund Strode, "'Wandering about Europe", 1930–31', in *Imogen Holst: A Life in Music*, rev. edn, ed. Christopher Grogan (Woodbridge: Boydell Press, 2010), 80.

IRON FOUNDRY NOISES



Sheet iron, nails and drum effects are being rehearsed under the direction of Prof. Bernard Heinze for the Australian premiere of Mosolov's "The Iron Foundry," to be performed by the Melbourne Symphony Orchestra in the Town Hall tomorrow night. The percussion instrument group will be used unconventionally to suggest a steel mill with flaming forges and ringing hammers.

Figure 1 Percussionists preparing for the Australian premiere of the *Iron Foundry* in 1936. The sheet of steel (and the performers shaking it) can be seen on the right. The nails mentioned in the caption are not called for in Mosolov's score; they were presumably added here to enhance the general effect of metallic noisiness. [Unsigned], 'Iron Foundry Noises', *The Herald* [Melbourne], 10 July 1936, 3 (photographer uncredited). Scan courtesy of the State Library of Victoria, Melbourne.

festivals. Esteemed Western musicians, such as Bartók and Casella, toured to Moscow and Leningrad, and contemporary works from abroad including *Pacific 231* were regularly performed – lending credence to the notion that Mosolov's factory was inspired, at least in part, by Honegger's locomotive.²⁰ But Soviet musicians found it difficult to attain permission

20 For performances of *Pacific 231*, see the tables detailing the repertoire of the Leningrad Philharmonia in Pauline Fairclough, *Classics for the Masses: Shaping Soviet Musical Identity under Lenin and Stalin* (New Haven, CT, and London: Yale University Press, 2016), 61–2, 85, 112–13. The significance of Mosolov's knowledge of the music of his non-Soviet contemporaries to the development of his compositional language more generally (and his approach to pitch organization in particular) is discussed in Daniil Zavlunov, 'Alexander Mosolov's Piano Sonata No. 1 and Its Synthetic Modernism', in *Analytical Approaches to 20th-Century Russian Music: Tonality, Modernism, Serialism*, ed. Inessa Bazayev and Christopher Segall (New York and London: Routledge, 2021).

to travel abroad, a situation that hindered the dissemination of their work.²¹ The ISCM offered a valuable channel for making their music known internationally, even if they could rarely attend the festivals in person. From 1924 to 1931, scores by ASM-associated composers were regularly performed at the festivals. This pathway into the West was further bolstered by an agreement between the Soviet State Publishing House and the Vienna-based publisher Universal Edition (UE), through which the latter attained the rights to distribute new Soviet scores internationally.²²

The mutually beneficial connections between ASM, the ISCM, the Soviet State Publishing House, and UE formed a composite network of patronage and exchange that decisively shaped Mosolov's career. With the support of Reyngol'd Glier and Nikolay Myaskovsky, his composition teachers at the Moscow Conservatory, Mosolov became established in the mid-1920s as a rising talent in ASM circles. Two events in 1927 confirmed his status. In the summer, his First String Quartet was performed by the renowned Viennese ensemble the Kolisch Quartet at that year's ISCM festival in Frankfurt. Although by the 1930s Mosolov's quartet seems to have been largely forgotten by Western critics – otherwise they might have realized that layered ostinato constructions were characteristic of his musical language beyond the *Iron Foundry* – the generally favourable reviews it received marked a significant milestone in his career.²³ In December, his reputation at home was further underscored at the concert organized by ASM in Moscow to commemorate the ten-year anniversary of the Russian Revolution. This event – ‘undoubtedly the zenith of ASM's concert activities’, according to one survey of Soviet musical life in the 1920s – offered a prestigious setting for the premiere of the four-part suite from his ballet *Stal'* ('Steel'), the first movement of which was the *Iron Foundry*.²⁴

In 1929, UE published the international edition of the *Iron Foundry* score, which did not explain that it was an excerpt from a ballet, and in the following year it began to be performed internationally as a standalone orchestral miniature. The work was first heard outside the

21 This combination of cosmopolitan concert culture and travel restrictions is discussed further in Pauline Fairclough, 'The Russian Revolution and Music', *Twentieth-Century Music* 16/1 (2019), 161.

22 On UE and Soviet music, see Olesya Bobrik, *Venskoye izdatel'stvo 'Universal Edition' i muzikanti iz sovetskoy Rossii: Istoriya sotrudnichestva v 1920–30-e godi* (Saint Petersburg: N.I. Novikova; Galina Skripsit, 2011).

23 Positive reviews included: Edwin Evans, 'Frankfort Festival', *The Musical Times* 68/1014 (August 1927), 733; Paul Stefan, 'Ein Sommer der Musik', *Anbruch* 9/7 (September 1927), 271; Erich Steinhard, 'Über das internationale Musikfest in Frankfurt: dazu sechs Parallelstellen aus der Kritik einer anderen Musikzeitschrift als Marginalien', *Der Auftakt* 7/9 (1927), 210. On layered ostinato cells in Mosolov's music, see Sitsky, 'Aleksandr V. Mosolov', 64–76. Other traits of the *Iron Foundry* characteristic of Mosolov's music from the 1920s include an interest in creating interplay between different referential collections (with octatonic ones especially prominent, as the oscillation between C–G and D \flat –F \sharp dyads at the work's opening might be heard to imply) and the working out of this experimental, dissonance-laden approach to pitch and harmony within more conventional formal structures; see Zavlunov, 'Alexander Mosolov's Piano Sonata No. 1 and Its Synthetic Modernism'.

24 Marina Frolova-Walker and Jonathan Walker, *Music and Soviet Power, 1917–1932* (Woodbridge: Boydell Press, 2012), 185. The other movements of the suite have been lost. On this, and for a synopsis of the ballet, see Laurel E. Fay, 'Alexander Mosolov, the *Iron Foundry*, from the Ballet *Steel*, Op. 19', 2008, <https://americansymphony.org/concert-notes/the-iron-foundry-from-the-ballet-steel-op19-1928/>.

Soviet Union in Berlin in March 1930.²⁵ But what seems to have been the breakthrough moment came six months later, at the ISCM festival in Liège in Belgium, where the *Iron Foundry* was programmed as the final item of the second orchestral concert on 6 September. Mosolov's music proved memorable on this occasion not only because it was unorthodox and arresting, but also thanks to the contingent circumstances of the performance. It was flattered by comparisons with another machine-inspired work that featured in the first orchestral concert two days earlier: the young Belgian composer Marcel Poot's *Poème de l'espace* (1928), a symphonic poem depicting a Transatlantic flight (a nod to the then-recent achievement of Charles Lindbergh). Critics at Liège derided Poot's juxtaposition of up-to-date subject matter with an outmoded compositional idiom. 'Is it possible that this young Flemish musician thinks he is modern because he sometimes dares to use a bunch of dissonant chords?', scoffed the influential Parisian critic Henry Prunières. 'Nothing [could be] more clichéd than this symphonic poem which brings back the memory of compositions perpetrated around 1890 by composers influenced by Wagnerism and the Russian school.'²⁶ Mosolov, by contrast, created monumental orchestral effects without seeming stuck in the nineteenth century, even if his strident horn theme suggests that Romantic symphonism was far from entirely expunged. Whereas *Poème de l'espace* sank into obscurity, the *Iron Foundry*'s punch helped it stand out in the ISCM's notoriously crammed programmes. At the end of an exhausting week of concerts and social events, a blast of Mosolov seems to have revived the audience, or at least allowed a 'tired public . . . to relax its strained nerves'.²⁷ The *Iron Foundry* may have been 'the only thing in the festival to evoke hisses', but this counted for much more than weary indifference.²⁸

After Liège, the floodgates opened. As one 1930s dictionary of modern composers reported, the 'success of this amazingly vital work was so instantaneous' that performances were scheduled 'thru-out the entire music world'.²⁹ Within twelve months of the festival, the *Iron Foundry* had been played in cities including Düsseldorf, Naples, New York, Paris, and Vienna.³⁰ The first London performance in February 1931 was broadcast by the

25 This performance by the Berlin Philharmonic under Max Rudolf was erroneously described as a 'world premiere'; Alfred Einstein, 'Sinfonie-Konzerte', *Die Musik* 22/7 (April 1930), 525.

26 'Est-il possible que ce jeune musicien flamand pense être moderne parce qu'il ose parfois employer des paquets d'accords dissonants? Rien de plus poncif que ce poème symphonique qui évoque le souvenir des compositions perpétrées vers 1890 par des compositeurs influencés par le wagnérisme et l'école russe'; Henry Prunières, 'S.I.M.C.: Le VIII^e Festival de la Société Internationale de Musique Contemporaine à Liège', *La Revue musicale* 11/108 (October 1930), 260.

27 Frederick Jacobi, 'Liege, 1930', *Modern Music* 8/1 (December 1930), 16.

28 H. E. W., 'International Music: Next Year's Meeting in Oxford', *Daily Telegraph* [London], 8 September 1930, 6. Critics were generally dissatisfied with the music selected for the 1930 festival; see Anton Haefeli, *Die Internationale Gesellschaft für Neue Musik (IGNM): Ihre Geschichte von 1922 bis zur Gegenwart* (Zurich: Atlantis, 1982), 163–7.

29 David Ewen, *Composers of Today: A Comprehensive Biographical and Critical Guide to Modern Composers of All Nations* (New York: H. W. Wilson Company, 1934), 179.

30 Düsseldorf, [Unsigned], 'Notizen', *Anbruch* 12/9–10 (November–December 1930), 300; Paris, Florent Schmitt, 'Les Concerts', *Le Temps* [Paris], 14 February 1931; Naples, G.-L. Garnier, 'Italie', *Le Ménestrel* 93/25 (19 June 1931); New York, Oja, *Making Music Modern*, 65; Vienna, Karl Geiringer, 'Lettera da Vienna', *La Rassegna musicale* 4/3 (May 1931).

BBC.³¹ In the summer, the work's merits would be debated in front-page articles in the broadcaster's *Radio Times* magazine, a publication whose weekly circulation in that year averaged 1.5 million.³² Over the next few years, the piece continued to enjoy regular performances and broadcasts in Western Europe and America. It benefited especially from being taken up by celebrity conductors, including Leopold Stokowski and Arturo Toscanini, since performances by the great maestros attracted extensive newspaper coverage, which, in turn, stirred up further curiosity and demand.³³ Piggybacking on the proto-globalization of Western art music in the late nineteenth and early twentieth centuries – the diffusion of its cultural and institutional practices via European-dominated networks of power and commerce – the *Iron Foundry* also reached more 'peripheral' sites of concert culture, such as Bucharest, Buenos Aires, and Manila.³⁴ A performance in Sydney in 1936 was attended by the Queen of Tonga.³⁵ Soon enough, recordings were issued: two in late 1933 by Parlophone and Pathé/Columbia, and another in early 1938 by Victor.³⁶ These companies were looking to capitalize on a public demand for Mosolov's work that was more voracious and widespread than has previously been recognized. In an increasingly global marketplace, the *Iron Foundry* became a highly productive commodity, disseminated to its multi-continental audience through pathways closely tied to the imperialist-capitalist world order – to which the Soviet Union itself, of course, was fundamentally opposed, in ideology if not always in policy.

Less than a year after the Liège performance, the *Iron Foundry* even arrived in Hollywood. In early 1931, the choreographer Adolph Bolm, a former member of the Ballets Russes resident in the United States since 1917, was contracted by Warner Brothers to work on a film called *The Mad Genius*, a melodrama loosely based on the relationship between Diaghilev and Nijinsky.³⁷ Reportedly inspired by visits to a Ford assembly line and the printing press for the *New York Times*, two paradigmatic sites of American mass production, Bolm

31 Nicholas Kenyon, *The BBC Symphony Orchestra: The First Fifty Years, 1930–1980* (London: BBC, 1981), 61.

32 The *Radio Times* articles are Hey, 'Music That Expresses Contemporary Life'; and W. R. Anderson, 'Modern Music Battle: Anderson v. Hey', *Radio Times* 32/408 (24 July 1931). Circulation figures are taken from Asa Briggs, *The History of Broadcasting in the United Kingdom*, vol. 2: *The Golden Age of Wireless* (Oxford: Oxford University Press, 1995), 261.

33 In November 1932, for example, the *Washington Post* reported: 'The playing of Mossolov's "Iron Foundry" is in response to a flood of letters, asking that the patrons of the Sunday concerts be given the opportunity to hear this highly controversial composition'; [Unsigned], 'National Symphony in Sunday Concert Starring Grainger', *Washington Post*, 20 November 1932, A2.

34 Bucharest, X., 'Roumanie', *Le Ménestrel* 96/21 (25 May 1934); Buenos Aires, Carlos A. Hegi, 'République Argentine', *Le Ménestrel* 99/24 (11 June 1937); Manila, F. B. Icasiano, "'Iron Foundry" Stands Out at Concert', *The Tribune* [Manila], 26 September 1939. On the 'global horizons' of European music in this period, see Jürgen Osterhammel, 'Globale Horizonte europäischer Kunstmusik, 1860–1930', *Geschichte und Gesellschaft* 38/1 (2012).

35 [Unsigned], 'Celebrity Concert', *The Sun* [Sydney], 22 July 1936.

36 Details of the recordings are provided in the discography.

37 My account of Bolm's ballet draws chiefly on Les Hammer, "'The Spirit of the Factory": Adolph Bolm's Post-Moderne Masterpiece', *Dance Chronicle* 20/2 (1997). See also Naima Prevots, 'How the Bowl Danced: An Era of Exploration', in *The Hollywood Bowl: Tales of Summer Nights*, ed. Michael Buckland and John Henken (Los Angeles: Balcony Press, 1996), 51–3; and Lorin Johnson and Mark Konecny, 'Adolph Bolm's Cinematic Ballet: *The Spirit of the Factory*', *Experiment* 20 (2014).

conceived the idea of a ‘factory’ ballet to be danced to the *Iron Foundry*. Mosolov’s music and most of the factory sequence were cut from the final edit of the film, but Bolm ensured that his work did not go to waste. On 28 July 1931, his new ballet, now given the title *The Spirit of the Factory*, was performed for the first time at the Hollywood Bowl, which could hold approximately 20,000 spectators. The ballet was revived ‘by popular request’ the following summer (‘Never before has there been in the history of the Bowl such an insistent demand for repetition of a ballet’, the programme claimed), and restaged thereafter at various American venues, exemplifying the wide appeal of its increasingly well-known score.³⁸

There is a sad irony to the timing of the *Iron Foundry*’s international success. With the beginnings of Stalin’s ‘cultural revolution’ in 1928–9, ASM lost ground to its cultural–political rival, the Russian Association of Proletarian Musicians (Rossiyskaya assotsiatsiya proletarskikh muzikantov, RAPM), who decried modernism as Western decadence and sought instead to promote a truly ‘proletarian’ music (meaning, primarily, mass songs for the workers).³⁹ Flush with their newfound authority, critics aligned with this movement brutally criticized Mosolov for his social irresponsibility and even degeneracy, in terms that anticipated the later orthodox Soviet view of the *Iron Foundry* as a ‘grossly formalistic perversion of a contemporary topic’.⁴⁰ As well as severely damaging Mosolov’s career at home – to the point where in March 1932 he would appeal directly to Stalin himself for help as a ‘persecuted and entirely disenfranchised musician’ – the changed balance of power in Soviet musical life also threatened to stymie the *Iron Foundry*’s rapidly growing reputation abroad.⁴¹ In 1931, RAPM adherents at the State Publishing House tried to block a second edition, only relenting after UE protested to the USSR’s Foreign Ministry.⁴²

From summer 1932, when the founding of the state-run Union of Soviet Composers put an end to the old ASM/RAPM rivalry, Mosolov was partially rehabilitated, even if the emerging

38 Hollywood Bowl Association, *Symphonies under the Stars: 1932: Aug. 9, 11, 12, 13: Program Magazine: Sixth Week* ([Los Angeles]: 1932), 39, 42, Los Angeles Philharmonic Archives, Los Angeles; Hammer, “‘The Spirit of the Factory’”, 202–5.

39 The twists and turns of the ASM/RAPM rivalry are situated in the broader landscape of Soviet music-making in the 1920s in Amy Nelson, *Music for the Revolution: Musicians and Power in Early Soviet Russia* (University Park, PA: Pennsylvania State University Press, 2004); and Frolova-Walker and Walker, *Music and Soviet Power*.

40 *Istoriya russkoy sovetskoy muziki*, vol. 1 (Moscow, 1956), 41, quoted in Boris Schwarz, *Music and Musical Life in Soviet Russia, 1917–1981*, enlarged edn (Bloomington, IN: Indiana University Press, 1983), 85. For a sample of the polemics directed against Mosolov between 1927 and 1932, see “‘Leviy’ flang sovremennoy muziki’ [‘The “left” wing of contemporary music’], *Muzika i revolyutsiya* 1 (January 1927), repr. in translation in Frolova-Walker and Walker, *Music and Soviet Power*, 188–92; and the quotations given in Hakobian, *Music of the Soviet Age*, 55n88.

41 Quoted in Frolova-Walker and Walker, *Music and Soviet Power*, 319.

42 Wolfgang Mende, ‘Zensur – Klassenkampf – Säuberung – Beugung – Strafverfolgung: Aleksandr Mosolov und Nikolaj Roslavac im repressiven Netzwerk der sowjetischen Musikpolitik’, in *Musik zwischen Emigration und Stalinismus: Russische Komponisten in den 1930er und 1940er Jahren*, ed. Friedrich Geiger and Eckhard John (Stuttgart: J. B. Metzler, 2004), 109. The episode exemplifies the degree to which, as Marina Frolova-Walker and Jonathan Walker have argued, ‘the struggle between ASM and RAPM was not simply an ideological disagreement, but was focused on the very concrete matter of who controlled the State Publishing House’s music section’; Frolova-Walker and Walker, *Music and Soviet Power*, 88.

dictate of socialist realism demanded a shift in compositional style.⁴³ But in late 1937, he became caught up in the persecutions of the Great Terror: accused of drunken hooliganism, he was sentenced to eight years imprisonment in the gulags (he was released after nine months, following the intercession of Glier and Myaskovsky, his dependable former teachers).⁴⁴ The details of this mistreatment did not become known in the West until the late twentieth century. For us now, though, the diverging paths of Mosolov and his famous composition – one trapped in a labour camp, while the other continued to traverse the globe – underscore the extent to which the *Iron Foundry* became detached from the life of its creator. Already restricted by the Soviet Union's absence from existing frameworks of international copyright relations (such as the Berne Convention), his control over how his international hit was disseminated became non-existent. His ability to influence how the work was understood was equally limited: even before the Great Terror, Mosolov's own voice had been entirely absent from the discussion of him and his music in other countries. At Liège, the *Iron Foundry* became an agent in its own right, with its own biography.

The ultra-modern and the primitive

Unearthing the profusion of performances, recordings, and broadcasts of the *Iron Foundry* in the 1930s raises more questions than it answers. Why this piece and not some other, when so much of the music performed at ISCM festivals fell instantly into obscurity? How did listeners interpret Mosolov's music, and why were so many of them so entertained by it? One initial hypothesis might be that the *Iron Foundry*'s machine aesthetic confirmed its enthusiasts' sense of themselves as moderns, and, by extension, their privileged standing in the global political order. In Liège, such an effect would likely have been reinforced by the context of the performance. The ISCM came to Belgium in 1930 because the country was hosting an international exposition, a genre of event that exemplifies perhaps more than any other the depth of the historical connection between internationalism and imperialism.

Since their beginnings in the mid-nineteenth century, international expositions had done much to shape how their millions of visitors understood their place in world history, not least by perpetuating the Enlightenment tradition of treating mastery of science and technology as a 'measure' of the distance between Western civilization and its supposedly less sophisticated Others.⁴⁵ The polarity was writ large in Belgium in 1930. The Exposition was divided into two strands: Antwerp presented the colonial exotica, and Liège the scientific and industrial exhibits.⁴⁶ Located in the country's industrial backbone, the so-called *sillon industriel* (industrial furrow), Liège was an apt choice for this assignment. Indeed, the city was felt particularly

43 Mende, 'Zensur – Klassenkampf – Säuberung – Beugung – Strafverfolgung', 111–13.

44 Inna Barsova, 'Dokumente zu den Repressionen gegen Aleksandr Mosolov', ed. and trans. Wolfgang Mende, in *Musik zwischen Emigration und Stalinismus: Russische Komponisten in den 1930er und 1940er Jahren*, ed. Friedrich Geiger and Eckhard John (Stuttgart: J. B. Metzler, 2004).

45 Michael Adas, *Machines as the Measure of Men: Science, Technology, and Ideologies of Western Dominance* (Ithaca, NY, and London: Cornell University Press, 1989).

46 Paul Greenhalgh, 'Antwerp/Liège 1930', in *Encyclopedia of World's Fairs and Expositions*, 2nd edn, ed. John E. Findling and Kimberley D. Pelle (Jefferson, NC, and London: MacFarland & Company, 2008).

well suited to host the 1930 International Foundry Congress (Congrès International de Fonderie) – one of the many international conferences held in Belgium in association with the Exposition – because it boasted, as a brochure for the Exposition noted, ‘foundries remarkable for their importance or specialization’.⁴⁷

In the *sillon industriel*, foundries were emblems of progress and prosperity. Thanks to the *Iron Foundry*, the region’s vaunted plants formed more than a mere backdrop to the ISCM festival: the steel sheet demanded by Mosolov’s score was, reportedly, cast specially for the occasion by a local foundry.⁴⁸ In this rendition, the music made audible a characteristic material product of Belgian modernity. Especially in the context of the Exposition, such a spectacle was redolent of familiar imperialist and gendered tropes about modern man conquering the natural world. In his short essay on Mosolov and the *Iron Foundry* for the ISCM festival programme book – the only information about the composer available to the audience at Liège – the Soviet conductor Nikolay Anosov laid claim to precisely these ideas: Mosolov, he argued, ‘rises to the exalted pathos of the power of the human genius that has subjugated the forces of nature’.⁴⁹

Anosov’s interpretation was repeated almost verbatim in several press reports.⁵⁰ Yet in the age of mass production and industrialized warfare, this was just one possible way to parse the sprawling field of symbolism associated with machines. Charting the racial imagination that underpinned George Antheil’s *Ballet mécanique* – another landmark machine-inspired composition of the 1920s – Carol Oja has demonstrated the proximity and, in terms of compositional technique, the frequent indistinguishability of the ultra-modern and the primitive.⁵¹ Conceived as an emblem of enormous power and brutal indifference to a bourgeois aesthetics of subjectivity, the machine came to perform some of the same polemical work in modernist art as, say, pre-modern folk ritual. So it was that, in 1921, T. S. Eliot could famously describe Stravinsky’s evocation of pagan Russia in *The Rite of Spring* as seeming to ‘transform the rhythm of the steppes into the scream of the motor-horn, the rattle of machinery, the grind of wheels, the beating of iron and steel, the roar of the underground railway, and the other barbaric noises of modern life’.⁵²

To communicate mechanicity or primitivism, early twentieth-century composers pushed two musical parameters to their extremes. The first was repetition. In the *Iron Foundry*, the ‘relentlessness of mechanical motion’, as one observer at Liège described it, seemed to defy

47 ‘fonderies remarquables par leur importance ou leur spécialité’; Léon Michel, *Congrès et Concours organisés à l’occasion de l’Exposition Internationale de Liège 1930* (Liège: Larock, 1930), 29.

48 H. E. W., ‘A Modern Music Festival: Works of Eleven Nations’, *Daily Telegraph* [London], 1 September 1930.

49 ‘s’élève au pathos exalté de la puissance du génie humain ayant asservi les forces de la nature’; Nikolay Anosov, ‘Alexandre Mossolov’, trans. N. H., in *VIII^{me} Festival de la Société Internationale de Musique Contemporaine/ Premier Congrès de la Société Internationale de Musicologie: Liège Septembre 1930* (Brussels, 1930), 82.

50 See, for example, H. E. W., ‘A Modern Music Festival’; Schmitt, ‘Les Concerts’.

51 Oja, *Making Music Modern*, 91–2. See also Hess, *Representing the Good Neighbor*, 50–80; and Daniel Albright, ‘Primitivism’, in *Putting Modernism Together: Literature, Music, and Painting, 1872–1927* (Baltimore, MD: Johns Hopkins University Press, 2015).

52 T. S. Eliot, ‘London Letter’, *The Dial* (1921), quoted in Albright, ‘Primitivism’, 143.

inherited conceptions of musical form.⁵³ The work's 'obstinate repetition', as another critic put it, negated development in the traditional symphonic sense; machine-like replication forestalled organic growth.⁵⁴ To some early twentieth-century critics, this state of suspended animation would have rendered the music deeply suspect: in his notorious critique of Stravinsky in *Philosophy of New Music* (1949), Adorno treated compulsive repetition quasi-psychoanalytically as a symptom of infantilism and regression.⁵⁵

The second parameter emphasized in the mechanical/primitive idiom was noise: what Joy H. Calico, echoing the anthropologist Mary Douglas's influential work on the social construction of dirt, has called 'sound out of place'.⁵⁶ The *Iron Foundry* transgressed naturalized sonic limits in both a qualitative sense, through the depiction of industrial technologies in concert music and the inclusion of the steel sheet as a musical instrument, and a quantitative one, through brutal dissonance and massive orchestral power. At Liège, noisiness in the latter sense was amplified by the 'extreme resonance' of the Conservatoire's concert hall, leading one critic to assert that the *Iron Foundry* was 'one of the noisiest pieces of music ever written'.⁵⁷ The clamour even prompted some to refer ironically to contemporary anxieties about the health threats of industrial noise. Imogen Holst, for example, described the Liège gathering as 'the noisiest festival on record: – towards the end our nerves got somewhat frayed at the edges, and the mere sound of a bicycle bell was enough to make us leap and turn pale'.⁵⁸

In the *Iron Foundry*, repetition and noise were inseparable: Mosolov's chief strategy for both portraying machines and generating cacophony was to layer ostinato cells. Although some found the din intolerable, others revelled in its rhythmic clamour. As the historian of sound Karin Bijsterveld has observed, early twentieth-century listeners tended to distinguish between different categories of loud noise. 'Intrusive' sound, such as the sudden passing of a train or aeroplane, was perceived negatively: it was irregular and unpredictable, and thus seemed to threaten the listener. By contrast, 'sensational' sound, such as 'the running of machines', was marvelled at: it was regular and predictable, and could 'fill the environment and surround the subject', creating feelings of wonder and awe.⁵⁹ Through its poundingly repetitive noisiness, the *Iron Foundry* (re)produced the sensational soundscape of the 'technological sublime'.⁶⁰

53 Edwin Evans, 'The Liège Festival', *The Bulletin of The British Music Society* n.s. 1 (October 1930), 3.

54 [Unsigned], 'Steel Foundry Music: "Noisy but Brilliant" Liège Festival Work', *Daily Mail* [London], 8 September 1930, 4.

55 Theodor W. Adorno, 'Stravinsky and the Restoration', in *Philosophy of New Music*, trans. Robert Hullot-Kentor (Minneapolis, MN, and London: University of Minnesota Press, 2007).

56 Joy H. Calico, 'Noise and Arnold Schoenberg's 1913 Scandal Concert', *Journal of Austrian Studies* 50/3–4 (2017), 33–5, citing Mary Douglas, *Purity and Danger: An Analysis of the Concepts of Pollution and Taboo* (1966).

57 [Unsigned], 'Contemporary Music: The Liège Festival', *The Times* [London], 9 September 1930, 10; J. B. Trend, 'The Liège Festival', *Monthly Musical Record* 60/718 (October 1930), 301.

58 Quoted in Grogan and Strode, "'Wandering about Europe", 1930–31', 80. On early twentieth-century anxieties about noise and anti-noise campaigns, see Bijsterveld, *Mechanical Sound*; Calico, 'Noise and Arnold Schoenberg's 1913 Scandal Concert', 35–9; and James G. Mansell, *The Age of Noise in Britain: Hearing Modernity* (Urbana, IL: University of Illinois Press, 2017).

59 Bijsterveld, *Mechanical Sound*, 41–50.

60 David E. Nye, *American Technological Sublime* (Cambridge, MA, and London: MIT Press, 1994).

The compositional means for achieving this effect seem indebted above all to *The Rite of Spring*.⁶¹ For Mosolov, as for Stravinsky, ostinato technique served to strip the orchestra of its human essence. The only element in the *Iron Foundry* that recalled the human voice was the blasting horn theme; but this was a cry of the collective, not the utterance of a particular subject. This deindividualized music had the potential to induce *Rite*-like feelings of dread: one reviewer of *The Spirit of the Factory* labelled the ballet a ‘startling, even terrifying picture of a roboticized humanity’.⁶² But perhaps surprisingly, given just how audible it is, few, if any, critics in the 1930s actually pointed out the connection between *The Rite* and the *Iron Foundry*. There seems to have been a crucial, even categorical, distinction between the two works: whereas Stravinsky’s could be heard, despite its primitivist scenario, as *evocative* of modernity’s soundscape, Mosolov’s was explicitly *mimetic*. To refer, as so many did, to the ‘noise’ of the *Iron Foundry* was not simply to describe its sonic excess; it was also to ponder the imitative relationship between this music and industrialism’s sounds and rhythms. Sublime visions of ‘exalted pathos’ or ‘roboticized humanity’ notwithstanding, the mimetic gambit was not usually felt to warrant the fundamental seriousness accorded to *The Rite*. As one critic reported from the Berlin performance in March 1930, although ‘the racket was ear-splitting’, Mosolov’s creation was, in the end, ‘a charming and, what’s more, brilliantly done orchestra-joke’.⁶³

The particular and the universal

Even if its debts to *The Rite* went largely unremarked at the time, the *Iron Foundry* was often presented as belonging to a specifically Russian musical tradition, most obviously through its inclusion in all-Russian programmes of orchestral music.⁶⁴ After 1917, however, the

61 Stravinsky scholars have tended to dismiss the *Iron Foundry* as derivative of *The Rite*’s most obvious surface features: Richard Taruskin, *Stravinsky and the Russian Traditions: A Biography of the Works through Mavra* (Berkeley, CA, and Los Angeles: University of California Press, 1996), vol. 1, 963; Jonathan Cross, *The Stravinsky Legacy* (Cambridge: Cambridge University Press, 1998), 39, 104. Another possible model was Prokofiev’s *Skifskaya syuita* (‘Scythian Suite’, 1915), also a landmark work of Russian musical primitivism. Prokofiev himself recognized the affinities, as he told Myaskovsky in 1931: ‘I feel irritated by the constant repetition of bars [in the *Iron Foundry*], though I myself made the same in the times of the Scythian Suite’; quoted in Hakobian, *Music of the Soviet Age*, 53n83.

62 *Los Angeles Examiner*, 29 July 1931, quoted in Hammer, ‘“The Spirit of the Factory”’, 200.

63 ‘war der Krach ohrenbetäubend . . . ein hübscher, übrigens glänzend gemachter Orchesterspaß’; Walter Schrenk, ‘Neue Musik im Rundfunk’; Eva Heinitz; Max Rudolf, in ‘Musik und Musiker: Chronik der Konzerte’, *Deutsche allgemeine Zeitung* [Berlin], 14 March 1930, n.p.

64 Although Mosolov spent most of his life from the age of four onwards in Moscow, he was born in Kyiv (today, of course, the capital of Ukraine, but then part of the Russian Empire). As with other historical figures with comparable backgrounds, the question of what identities we assign him has gained renewed and tragic significance following the Russian Federation’s invasion of Ukraine in early 2022. Some have sought to reclaim Mosolov as a Ukrainian composer; see, for example, ‘Mosolov’s Suitcase: A Film by Matthew Mishory’, 2022, www.mosolovfilm.com/. In the 1920s and 1930s, however, international audiences and critics saw Mosolov as a Soviet/Russian composer; and as we will see, this perceived Soviet/Russian identity impacted significantly on the reception of his music. A typical example of the *Iron Foundry* appearing in an all-Russian orchestral programme (in this case alongside music by Borodin, Tchaikovsky, and Mosolov’s contemporary Aleksandr Veprik) would be Toscanini’s performance with the New York Philharmonic in 1933. See New York Philharmonic, Concert programme, 16 March 1933, programme ID 2831,

continuity of that tradition could hardly be taken for granted. When audiences in the West encountered the *Iron Foundry*, in the knowledge that its composer lived in a radically reorganized society, they seem to have felt uncertain about the extent of their contemporaneity with Soviet citizens. Did factories in Moscow sound the same as those in Liège? And did these different societies hear industrial noise in the same way? In raising such questions, the work confronted its international listeners with what is now a historiographical problem: evaluating whether the Soviet Union belonged to a shared modernity or represented one distinct form among a gamut of modernities.⁶⁵

In 1930, there was a gap in the market for a quintessentially ‘Soviet’ musician. In other fields, above all cinema and visual art, Western audiences could access culture with distinctively Soviet qualities. But the limited body of Soviet music that circulated internationally during the 1920s, such as Myaskovsky’s symphonies and piano sonatas, seemed disappointingly consistent with pre-revolutionary aesthetic norms.⁶⁶ There was one significant exception: Prokofiev’s ballet *Le Pas d’Acier* (‘The Steel Step’), first staged in Paris in 1927. As Lesley-Anne Sayers and Simon Morrison have described, the factory-based scenario was Diaghilev’s attempt ‘to bring the “new Russia” to the West.’⁶⁷ There was confusion, though, about just how Bolshevik this ‘Bolshevik ballet’ really was: Russian émigrés were prominent among the contributors, and Massine’s choreography for the Ballets Russes undercut the pro-Soviet message by ‘allowing the factory to be interpreted as a symbol of oppression’.⁶⁸ The *Iron Foundry* shared *Le Pas d’Acier*’s industrialized aesthetic and in places a very similar musical vocabulary, but was less ambiguous in its origins.⁶⁹ It seemed to mark the arrival of a truly Soviet music: the product of a distinctive form of modernity. As one Austrian critic put it, Mosolov was not one of those composers who ‘despite revolution and social chaos, clings on to the old, grand musical forms’; his work was one of the ‘natural healthy children of the revolution’.⁷⁰ The *Iron Foundry*, it was claimed elsewhere, was ‘Russia’s five-year plan set to music’.⁷¹

New York Philharmonic Leon Levy Digital Archives, <https://archives.nyphil.org/index.php/artifact/ac522e6d-f3e7-46cb-a734-aaf755fbb2f3-0.1>.

65 Stephen Kotkin, ‘Modern Times: The Soviet Union and the Interwar Conjuncture’, *Kritika: Explorations in Russian and Eurasian History* 2/1 (2001); Michael David-Fox, *Crossing Borders: Modernity, Ideology, and Culture in Russia and the Soviet Union* (Pittsburgh, PA: University of Pittsburgh Press, 2015).

66 Julius Matfield, ‘Music of the New Russia: Revolution’s Effect on Native Art Called Negligible – State Publishes Works’, *New York Times*, 9 June 1929.

67 Lesley-Anne Sayers and Simon Morrison, ‘Prokofiev’s *Le Pas d’Acier*: How the Steel Was Tempered’, in *Soviet Music and Society under Lenin and Stalin*, ed. Neil Edmunds (London: RoutledgeCurzon, 2004), 83.

68 Sayers and Morrison, ‘Prokofiev’s *Le Pas d’Acier*’, 90, 99.

69 The most striking example of this shared vocabulary is the chromatic triplet ostinato figure in the factory sequence in *Le Pas d’Acier*’s second scene.

70 ‘trotz Revolution und gesellschaftlichem Chaos an den alten, großen Musikformen festhält . . . natürliche gesunde Kinder der Revolution’; Erwin Felber, ‘Neue Orchestermusik’, *Anbruch* 12/9–10 (December 1930), 281. ‘Natürliches Kind’ can also refer to a child born out of wedlock, an association that underscores the idea of this music arising from an alternative set of social conditions to those of bourgeois tradition.

71 [Unsigned], ‘Radios Groan as Russian Sets Industry to Music’, *Washington Post*, 6 April 1931, 10. In reality, Mosolov had composed the *Iron Foundry* before the first five-year plan began in late 1928.



Figure 2 The enigmatic portrait photograph of Mosolov in the 1930 ISCM festival programme book. Anosov, 'Alexandre Mossolov', 80 (photographer uncredited). Scan courtesy of the British Library, London.

Mosolov himself was often presented as an essentially Soviet figure. In this period, the Western cliché of the Soviet artist-intellectual was of a man who had overcome pre-revolutionary hardship, fought in the Civil War, and now worked in an industrial setting.⁷² Mosolov could be slotted neatly into this mould: while the *Iron Foundry* confirmed a stereotypically Soviet infatuation with industrialism, Anosov's biographical note for the ISCM festival dutifully recorded the composer's service in the Red Army between 1917 and 1920 (although it steered clear of what we now know to have been his middle-class childhood).⁷³ Combined with the shadowy moodiness of the photograph of the composer in the festival programme book (Figure 2), such tantalizing biographical details fed an image of Mosolov as committed revolutionary. The French composer and critic Florent Schmitt, despite his right-wing political views, was among the more extravagant of those to fetishize Mosolov's Sovietness: he lingered on the 'hardened face' and 'eyes of flame' of 'this ex-combatant of the Red Army', and reported that 'the acuity and intransigence of his art belong, it seems, to a left no less extreme than his political opinions'.⁷⁴ Many came to assume that the *Iron*

72 Ludmila Stern, *Western Intellectuals and the Soviet Union, 1920–1940: From Red Square to the Left Bank* (London and New York: Routledge, 2007), 15.

73 Anosov, 'Alexandre Mossolov', 80.

74 'ex-combattant de l'armée rouge, au visage durci, yeux de flamme . . . l'acuité et l'intransigence de son art ont, paraît-il, rangé à une gauche non moins extrême que ses opinions politiques'; Schmitt, 'Les Concerts', 3. The latter

Foundry epitomized the musical culture of post-revolutionary Russia, a situation that led some pro-Soviet ideologues to try to challenge the misleading generalizations that the work's international exposure inspired.⁷⁵

At Liège, the ISCM festival context may have strengthened the idea of Mosolov as a distinctively Russian/Soviet composer. As synchronic overviews of an international field, these occasions often led attendees to compare and catalogue what they heard, modes of listening that encouraged essentializing claims about nationality and race. (In 1927, for instance, the British tabloid the *Daily Mail* compared the ISCM to a zoo, whose 'several different tribes' included the 'Viennese Disintegrators', 'Parisian cynics', and 'savage Easterners'.⁷⁶) On the other hand, as annual snapshots of the diachronic unfolding of music history, the events also proffered an experience of 'contemporary music', a category that did not belong to any one country. The Prague-based critic Erich Steinhard surely had the *Iron Foundry* in mind when at the end of the 1930 festival he complained about: 'the tendency towards the deployment of sound masses and their excessive amplification in dynamics. What a racket.'⁷⁷ He was among several observers at Liège to compare Mosolov to Honegger, a gesture whose continual repetition in the years to come would do much to establish machine-imitating works as a recognized category of modernist music.⁷⁸ As a major contributor to this quintessentially modern and international genre, Mosolov became a symbol not only of Sovietness but also of new music in general. So it was that a correspondent to *The Musical Times* in 1939 could refer casually to music 'from Palestrina to Mossolov'.⁷⁹

As a border-crossing genre, machine-inspired works seemed to mediate the unprecedented sounds of a shared present. The *Iron Foundry* and *Pacific 231*, claimed one French writer in 1937, 'provide a true reflection of the active, breathless, noisy life of the twentieth century'.⁸⁰ As we are about to see, nearly all critics agreed that the *Iron Foundry* was startlingly 'realistic'. One striking thing about this consensus is that Western listeners felt so confident in making the judgement. Industrial technology, most seem to have supposed, was a universally legible ground, a pre-ideological building block of modern societies. A foundry was a foundry,

part of this quotation was a gloss on Anosov, who described Mosolov as belonging to 'the extreme left of Russian contemporary music' ('l'extrême gauche de la musique russe contemporaine'); Anosov, 'Alexander Mossolov', 82. 'Extreme left' was a label that ASM adherents appropriated to describe their own modernism, so as to lend appropriate political associations to predilections that might otherwise have been understood as suspiciously bourgeois. This cultural-political context was missed when the phrase circulated beyond the USSR.

75 Sergei Radamsky, 'Russia and Machine Music' [Letter to the Editor], *New York Times*, 24 April 1932. Despite this intervention, the work remained widely known in the United States as 'the Soviet Iron Foundry' (which was the title used on Victor's 1938 recording). A British example along similar lines is reported in [Unsigned], 'Our London Correspondence', *Manchester Guardian*, 29 November 1934.

76 [Unsigned], 'Music Fun at Frankfurt', *Daily Mail* [London], 5 July 1927, Edwin Evans clippings collection, Westminster Music Library, London.

77 'die Tendenz zur Aufbietung von Klangmassen und ihre Übersteigerung im Dynamischen. Soviel Krawall'; Erich Steinhard, 'Internationales Musikfest in Belgien', *Der Auftakt* 10/9–10 (1930), 220.

78 See also, for example, Jacobi, 'Liege, 1930', 16.

79 Gordon T. Stubbs, 'Bach at the "Proms"' [Letter to the Editor], *Musical Times* 80/1151 (January 1939), 59.

80 'apportent un reflet fidèle de la vie active, haletante, bruyante du XXe siècle'; Wanda L. Landowski, 'Évolution de la Musique descriptive du XV^e au XX^e siècle', *Le Ménestrel* 99/46 (12 November 1937), 298.

regardless of who controlled the means of production. The prevalence of this assumption indicates how commonplace it was to imagine the world as bound together by processes of modernization that ran deeper than cultural or political differences. It was this conviction that lent credibility to early twentieth-century claims that the future would inevitably be international.

Yet such fantasies arguably did little to promote genuine mutual understanding. As the few musical commentators in the West who did follow Russian-language musical debates tried to explain, to limited effect, the *Iron Foundry* did not enjoy anything like the same profile or popularity within the Soviet Union as it did elsewhere.⁸¹ When the work received its first international performances in 1930, hardly anyone in the audience seems to have realized that the period when such music could have achieved official support or public acclaim in Mosolov's own country was already over. In a pattern that would recur throughout the history of Western engagement with the USSR, a fascination with exotic or otherwise arresting cultural phenomena did little to advance – indeed, actively impeded – a more informed appreciation of what was actually distinct about how social and cultural life there was developing.⁸²

Artistic creation and mechanical reproduction

Some critics thought the *Iron Foundry* so realistic that they described the work as a 'photograph' or Mosolov as a 'photographer'.⁸³ Although sound recording might have provided a more straightforward analogy, the choice of photography said something about the *quality*, as well as the extent, of the music's perceived literalism. Because its obsessive repetition did not project a musical subjectivity that developed over time, the *Iron Foundry* seemed, like a photograph, static and flat. Consequently, it did not meet the criteria of 'depth' against which the aesthetic value of instrumental music was conventionally judged, especially in the Austro-German tradition.⁸⁴ The *Iron Foundry* had a captivating surface, but an absent centre; as Schoenberg might have put it, the music had superficial 'style', but lacked an abstract 'idea'.⁸⁵ The young Benjamin Britten came to a similar conclusion when he heard

81 Radamsky, 'Russia and Machine Music'.

82 Enduring Western prejudices about the Soviet Union and its musical life are critiqued in Fairclough, 'The Russian Revolution and Music'. On the broader history of the 'othering' of Russia and Russian culture, see Richard Taruskin, *Defining Russia Musically: Historical and Hermeneutical Essays* (Princeton, NJ: Princeton University Press, 1997), xi–xxxii; and Martin Malia, *Russia under Western Eyes: From the Bronze Horseman to the Lenin Mausoleum* (Cambridge, MA, and London: Belknap Press of Harvard University Press, 1999).

83 For approving and disparaging examples, see, respectively, Heinrich Strobel, 'An die deutsche Sektion der I.G.N.M.', *Melos* 9/10 (October 1930), 435; and M. J. Rouët de Journel, 'Chronique Musicale: De *La Création du Monde* à la *Fonderie d'acier*', *Études* 73/226 (March 1936), 812. Heavy industry was a common subject of interwar photography, as in the work of the American photographer Margaret Bourke-White.

84 Holly Watkins, *Metaphors of Depth in German Musical Thought: From E.T.A. Hoffmann to Arnold Schoenberg* (Cambridge: Cambridge University Press, 2011).

85 Arnold Schoenberg, 'New Music, Outmoded Music, Style and Idea' (1946), in *Style and Idea: Selected Writings of Arnold Schoenberg*, ed. Leonard Stein, trans. Leo Black (London: Faber & Faber, 1975).

the work at the Proms in September 1931: the *Iron Foundry*, he recorded in his diary, was ‘amusing – nothing more’.⁸⁶

The charge of hollowness echoed a long-standing unease among elite musicians and critics in the West about the popularity of Russian music they dismissed as shallowly programmatic.⁸⁷ It also seems characteristic of broader misgivings about musical realism and, in particular, musical mimesis. The latter especially was difficult to reconcile with Romantic and modernist notions of artistic originality, not least because it seemed to require an instability or even renunciation of individual personality. In the reception of the *Iron Foundry*, mimesis itself was often presented as a kind of mechanical procedure, devoid of full subjectivity. As the British critic W. J. Turner sniffed in 1931, Mosolov ‘shows no more mind than a photographic plate which records a scene impinged upon it’.⁸⁸ Used in this derisive way, the photography metaphor implied that the *Iron Foundry* was not just *about* mechanical production, but was also an object that had itself been mechanically produced, and so did not qualify as art.

Turner was far from alone in complaining that Mosolov’s compositional project was one of naive imitation rather than transubstantiating musicalization. Guided by the idealist aesthetics of Benedetto Croce, Italian critics tended to argue that the *Iron Foundry* could be assessed ‘as a demonstration of skilful instrumentation adequate for the realistic reproduction of noises, but not as a work of art’.⁸⁹ Although Mosolov’s ‘mighty hymn to mechanized labour’ was actually praised by one Soviet critic at the Moscow premiere for ‘go[ing] further and deeper’ than simply depicting a factory, some writers in other countries – perhaps backdating the slogan ‘socialist realism’ to 1927 and misconstruing what it meant in practice when applied to music – attributed what they saw as the *Iron Foundry*’s excessive literalism to the inescapable pressure on artists in a communist state to produce propaganda for the regime.⁹⁰ Mosolov, in other words, was just another cog in the Soviet machine.

Another sceptic, at least initially, was the philosopher Vladimir Jankélévitch. When he heard the *Iron Foundry* in Prague in 1931, he decried its ‘childish idea of one-upmanship. The *Symphony of Machines* makes sirens wail and turbines whirl just as the orchestra of [Beethoven’s] *Pastoral* makes sheep bleat and cows moo. It is enough to make one

86 Benjamin Britten, *Journeying Boy: The Diaries of the Young Benjamin Britten 1928–1938*, ed. John Evans (London: Faber & Faber, 2009), 83.

87 Philip Ross Bullock, ‘Tsar’s Hall: Russian Music in London, 1895–1926’, in *Russia in Britain, 1880–1940: From Melodrama to Modernism*, ed. Rebecca Beasley and Philip Ross Bullock (Oxford: Oxford University Press, 2013).

88 W. J. Turner, ‘The Music of Automata and Adolescents’, *New Statesman and Nation* 1/2 (7 March 1931), 64.

89 ‘come saggio di abile istrumentazione adeguata alla riproduzione realistica dei rumori, ma non come opera d’arte’, Guido M. Gatti, ‘Lettera da Liegi’, *La Rassegna musicale* 3/5 (September 1930), 421. On the influence of Croce’s anti-materialism on Gatti’s generation, see Arman Schwartz, ‘Don’t Choose the Nightingale: Timbre, Index, and Birdsong in Respighi’s *Pini di Roma*’, in *The Oxford Handbook of Timbre*, ed. Emily I. Dolan and Alexander Rehding (New York: Oxford University Press, 2021).

90 Semyon Korev, ‘Sovetskaya simfonicheskaya muzika: yubileyniye Oktyabr’ skiye kontserti’, *Sovetskoye iskusstvo* 7 (1927), quoted in Frolova-Walker and Walker, *Music and Soviet Power*, 184. An example of the ‘propaganda’ narrative from a militantly anti-communist publication is Dominique Sordet, ‘Le Phonographe’, *L’Action française*, 23 December 1933. One irony here is that, as we have seen, when the demands of the state actually did impinge most dramatically on Mosolov’s compositional approach, the result was a pivot away from the modernist style of the *Iron Foundry*.

weep.⁹¹ By the time he came to write *Music and the Ineffable* (1961), though, Jankélévitch saw Mosolov's literalism in a different light. He praised the *Iron Foundry* as a work in which the 'atonal racket of the machines resounds *as it is*', and thus as an example of 'inexpressive music' that 'allows things themselves to speak, in their primal rawness, without necessitating intermediaries of any kind'.⁹² Jankélévitch's conversion from detractor to advocate did not require a departure from the widespread view of the *Iron Foundry* as quasi-photographically realistic; this conception of Mosolov's music could support antithetical aesthetic judgements.

The accuracy of representation in the *Iron Foundry* did not go entirely unquestioned. After the performance in Berlin in March 1930, Mosolov's music came under attack from an unexpected source: the *Giesserei-Zeitung*, the 'Foundry Newspaper', the German trade journal for those working in the industry. This publication ridiculed Alfred Einstein's claim in *Die Musik* that the foundry environment was 'astonishingly well observed'.⁹³ 'The critic has certainly never visited an iron foundry', the writer for the *Giesserei-Zeitung* remarked:

The blasting furnace, steelworks, rolling mill, and hammer mill, or the smeltery not only convey a completely different optical impression from the iron foundry, but also have a completely different acoustic effect. The iron foundry is a relatively quiet plant, in which the heaving and roaring of machines is almost entirely absent. . . . The manager of a foundry would come down like a ton of bricks on anyone who put on a spectacle in his plant like the one the Berlin Philharmonic Orchestra staged under the instructions of Mr *Mosolov*. And the factory inspectors would intervene as quickly as possible and shut down the whole enterprise!⁹⁴

As Bijsterveld has shown, early twentieth-century industrial workers were highly discriminating about noise, which could reassure them that mechanisms were running properly or alert them to inefficiencies and faults.⁹⁵ By these standards of aural expertise, the *Iron Foundry* was laughable.⁹⁶

91 'idée puérile de surenchère. La *Symphonie des machines* fait hurler les sirens et ronfler les turbines tout comme l'orchestre de la *Pastorale* fait bêler les moutons et mugir les vaches. Il y a de quoi pleurer'; Vladimir Jankélévitch, 'La Musique', *La Revue française de Prague: organe de la Fédération des sections de l'Alliance française en Tchécoslovaquie* 12 (1931), 420.

92 Vladimir Jankélévitch, *Music and the Ineffable*, trans. Carolyn Abbate (Princeton, NJ, and Oxford: Princeton University Press, 2003), 32–3.

93 'erstaunlich gut beobachtet'; Einstein, 'Sinfonie-Konzerte', 525.

94 'Der Kritiker hat sicher noch keine Eisengießerei besucht . . . Das Hochofen-, Stahl-, Walz- und Hammerwerk oder das Hüttenwerk vermittelt ja nicht nur ganz anders geartete optische Eindrücke wie die Gießerei, sondern wirkt auch akustisch gänzlich anders. Die Gießerei ist ein relativ ruhiger Betrieb, in welchem das Wuchten und Dröhnen der Maschinen fast völlig fehlt. . . . Der Betriebsleiter einer Gießerei würde mit einem Donnerwetter dazwischen fahren, wenn in seinem Betrieb ein Spektakel veranstaltet würde, wie ihn das Berliner Philharmonische Orchester nach der Vorschrift des Herrn *Mosolow* in Szene setzte. Und die Gewerbeaufsicht würde schnellstens eingreifen und den ganzen Betrieb stilllegen!'; [Unsigned], 'Die Eisengießerei Als – Tonschöpfung', *Giesserei-Zeitung: Zeitschrift für das gesamte Giessereiwesen* 27/6 (15 March 1930), 169.

95 Karin Bijsterveld, 'Listening to Machines: Industrial Noise, Hearing Loss, and the Cultural Meaning of Sound', *Interdisciplinary Science Reviews* 31/4 (2006), 331–3.

96 The *Giesserei-Zeitung*'s objections were gleefully cited in the conservative *Zeitschrift für Musik* as evidence of the folly of the modernist fascination with machines; [Unsigned], "'Maschinenmusik – Eisengießerei'" oder: Wer lacht da

There is a cautionary tale here: upper-middle-class music critics probably cannot tell us what industrialism really sounded like. There is a telling contrast between their proclamations of precise literalism and the confusing proliferation of names by which Mosolov's work was known (these included 'Factory', 'Soviet Iron Foundry', 'The Symphony of Machines', and 'The Iron Rolling Mill'). Yet should we assume, as the writer for the *Giesserei-Zeitung* did, that what listeners found so compellingly realistic was necessarily a literal *reproduction* of a particular sonic environment? The British critic Edwin Evans argued after the Liège performance that noise was a red herring, insisting instead that what mattered was: 'the essential dynamism of the music. It is loud, of course, as the subject demands, but loudness is a relative factor and I believe the ruthless pulsation would make it scarcely less impressive without the loudness.'⁹⁷ Other critics agreed that the *Iron Foundry* was an 'essay in rhythm', in which 'Mosolov contrived to give an impression of musical pattern allied with the mechanised certainty of foundry work'.⁹⁸ Taking our cue from these comments, we might conclude that what the *Iron Foundry* offered its listeners was not the phonograph-like recreation of a sound source. Rather, the synchronized, repetitive movements of the musicians replicated, in sight and sound, the novel and much-discussed somatic experience of working on an assembly line.⁹⁹

This scripting of the body was accentuated in *The Spirit of the Factory*, Bolm's ballet for the Hollywood Bowl. In setting the *Iron Foundry* to dance, Bolm restored its original function as ballet music. The resulting choreography suggests that he was drawn to the score not only because he was following the general vogue for machine aesthetics, but also because he wanted to exploit a more specific fascination – one shared by the early Soviet theatrical avant-garde – with the embodied mimesis of mechanicity.¹⁰⁰ Bolm divided his large *corps de ballet* into groups that imitated various kinds of mechanisms moving in synchrony: parallel lines of 'Gears', 'Switches', and 'Pendulars' in the centre, four 'Principal Pistons' to one side, five 'Spring Valves' to the other (Figures 3 and 4). The result was a vast array of quasi-mechanical movement. As the most concrete elaboration of the *Iron Foundry* as mimetic display, this choreography brought to the fore qualities also present in concert performances and even in radio broadcasts and gramophone recordings. Playing off the long-standing tradition of imagining the orchestra as a giant machine – and in this sense, it really was an 'orchestra-joke' – the work

nicht?', *Zeitschrift für Musik* 97/5 (May 1930), as cited in Helmut Kirchmeyer, *Igor Strawinsky: Zeitgeschichte im Persönlichkeitsbild: Grundlagen und Voraussetzungen zur modernen Konstruktionstechnik* (Regensburg: Gustav Bosse, 1958), 234–5.

97 Edwin Evans, 'The Liège Festival: A Change of Atmosphere', *The Musical Mirror and Fanfare* 10/10 (October 1930), 277.

98 [Unsigned], 'Wireless Notes and Programmes: To-Day's Features: The "Brighter" Poetry Recital; "Music of the Machines"', *Manchester Guardian*, 22 September 1931, 10; [Unsigned], 'Music Abroad: Modern Works Produced', *The Argus* [Melbourne], 25 October 1930, 7.

99 Gumbrecht, 'Assembly Lines', in *In 1926*, 22–5.

100 One example from Moscow is Nikolay Foregger's *Machine Dances* (1923), in which, as in Bolm's ballet, the sounding of a factory whistle induced groups of dancers to embody the repetitive movements of different machine parts. See Edward Braun, 'Futurism in the Russian Theatre, 1913–1923', in *International Futurism in Arts and Literature*, ed. Günter Berghaus (Berlin and New York: Walter de Gruyter, 2000), 87–90.

ADOLPH BOLM

Presents for the third time by popular request

THE BALLET

"IRON FOUNDRY"

Music by A. Mossolov
Choreography by Adolph Bolm
Costume of Elise Reiman designed by Nicholas Remisoff
All other costumes designed by Adolph Bolm, executed by Corinne

Synopsis

Adolph Bolm conceived his ballet in the truly modern manner, using the human body to express the mechanical age of today. He dehumanises his dancers. They become parts of a tremendous mechanical apparatus moving in unison, but with a variety of designs and motion. To quote Richard Hammond, musical inventor, "A ballet with pistons for dancers—the Battlements of Levers—the pirouettes of flywheels—the glissandos of gears—fouettes of pendulas—jettees, cabrioles and entrechats of spring valves—fused in one stupendous dance composition. This SPIRIT OF THE FACTORY has become a classic among the contemporary ballets."

Personnel

<p>Elise Reiman }Principal Dynamos Robert Bell</p> <p>Ralph FaulknerGovernor</p> <p>First Line:</p> <p>Edith Jane } Marjorie Kendall } Virginia Lee Patterson } Dorothy Ward } Pauline Wallis } Betty Moore } Virginia Castle } Eugenia Abriel } Evelyn Wenger }</p> <p>Second Line:</p> <p>Kurt Baer } Allan Cook } Harold Jeffries } Richard Neal } Nico Charisse } Ernest Snodgrass } Chas. Ewing } Guy Alden } Dimitri Romanoff }</p> <p>Line of Four to Left:</p> <p>William Collins } Edward Kube } Austin Abel } Carlos Burroughs }</p>	<p>Back Line:</p> <p>Elizabeth Von Barneveld } Gretchen Igel } Jessie Sherman } Dorothy Brown } Irma Beck } Jeanette Richmond } Rooney Ousley } Lorraine Lynde } Dorothy Dongieux }</p> <p>Circle to Right:</p> <p>Genevieve Rupurtus } Virginia Wallis } Iris Kuhnle } Marchael Neal } Irene Prior } Helen McDonald }</p> <p>Line With Poles:</p> <p>Meriam Heidrick } Kay Green } Thelma Babitz } Sylvia Cheri } Maxine Moore }</p> <p>Line to Extreme Right:</p> <p>Helen Pananen } Leona La Verne } Nadya Petchnikoff } Anna Gerdova } Lila Pike }</p>
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Figure 3 Synopsis and personnel for the 1932 run of Adolph Bolm's *Iron Foundry* ballet. Hollywood Bowl Association, *Symphonies under the Stars: 1932: Aug. 9, 11, 12, 13: Program Magazine: Sixth Week* (1932), 39. Courtesy of the Los Angeles Philharmonic Archives.

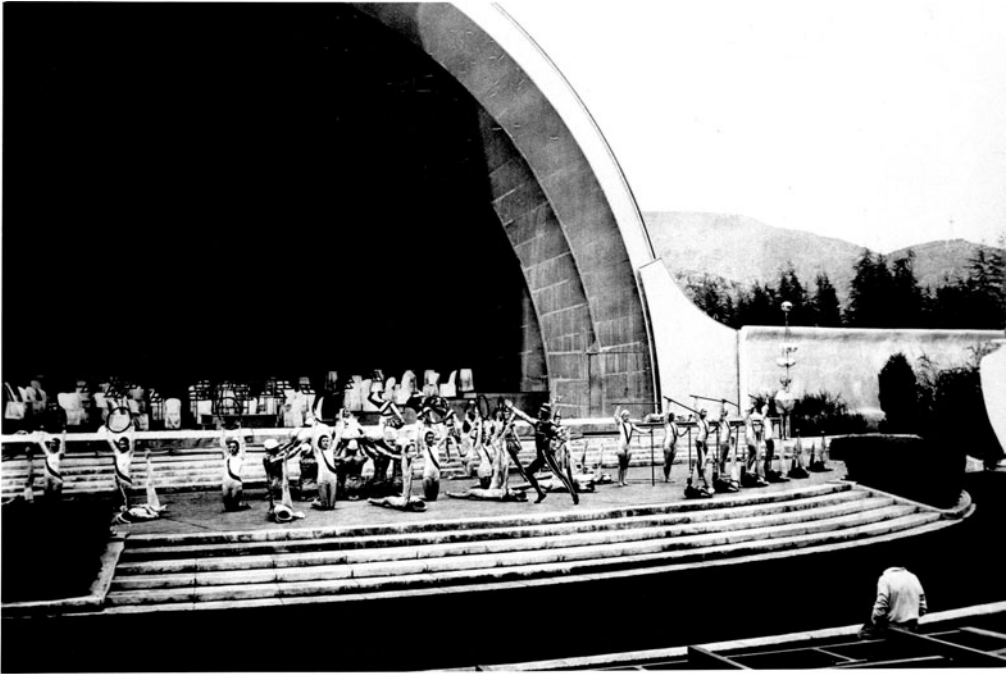


Figure 4 Rehearsal of *The Spirit of the Factory* at the Hollywood Bowl, believed to date from shortly before the first performance in 1931 (photographer uncredited). Courtesy of the Los Angeles Philharmonic Archives.

induced musicians to personify the dynamism of mechanical parts.¹⁰¹ Its mimetic gestures drew out the parallels between the specialized labour of orchestral musicians, tessellating into a complex output that no individual could produce alone, and the repetitive, rationalized movements that defined the worker–machine interface in the age of Ford.

Modernism and mass entertainment

Mosolov's severe dissonances did not literally transcribe the sounds of a foundry. But they were integral to his international reputation as a modernist innovator who could be named alongside the likes of Krenek and Walton as one of the most promising young composers of his generation.¹⁰² Even in the ISCM context, Mosolov's discordant raucousness seemed extreme to some – hence the hissing in Liège, which recalled what was by 1930 an established tradition of protest against modernist music (one that had occasionally reared its head at previous ISCM festivals).¹⁰³ At the same time, though, not everyone took the *Iron Foundry*

101 The orchestra-as-machine metaphor dates back to the late eighteenth century. See John Spitzer and Neal Zaslaw, *The Birth of the Orchestra: History of an Institution, 1650–1815* (Oxford: Oxford University Press, 2004), 519–21.

102 Adolfo Salazar, 'El arte musical en la Europa contemporánea', in *La música actual en Europa y sus problemas* (Madrid: J. M. Yagües, 1935), 34–5.

103 Haefeli, *Die Internationale Gesellschaft für Neue Musik*, 48–50, 156–7; Davide Ceriani, 'Mussolini, la critica musicale italiana e i festival della Società Internazionale di Musica Contemporanea in Italia negli anni Venti', *Journal of Music*

seriously. As was evident in their questioning of whether Mosolov's 'photograph' was really art, some critics were sceptical of music that listeners could grasp intuitively without any special effort or expertise.

Even sympathetic commentators tended to present the *Iron Foundry* as a gimmick, an aesthetic category which Sianne Ngai has recently theorized as emerging from the conditions of mass production, and which she distinguishes, in part, by its simultaneously appealing and irritating capacity to seem 'both to work too hard and work too little': too hard, in this case, because of the lengths to which Mosolov had gone to achieve his supposed realism (especially by calling for the steel sheet) and the extremes to which he pushed the orchestra in consequence; and too little, because of his reliance on external stimuli, his apparent disregard for more abstract concerns, and the cheap thrills he served up to unsophisticated audiences.¹⁰⁴ Though disdained by more earnest critics, the *Iron Foundry*'s gimmickry was pushed by some performers to the point of full-blown slapstick. In their rendition at a Christmas concert in 1937, the Toronto Symphony Orchestra donned workers' overalls, while their conductor Ernest MacMillan wielded a monkey wrench as a baton. When the piece finished, MacMillan himself recalled, 'a factory whistle blew and the players knocked off work and opened lunch boxes, the contents of which were consumed on stage'.¹⁰⁵

This kind of tomfoolery made it easy to sneer at the work's success. Yet as Ngai argues, judging something a gimmick, however damning the rhetoric deployed, is always somewhat equivocal, since part of what defines the form, as both 'a wonder *and* a trick', is the deeply ambivalent responses it provokes. One sign of this ambivalence, she suggests, resides in how we uneasily acknowledge the gimmick's charms as ones 'to which others, if not ourselves, are susceptible'.¹⁰⁶ This dynamic of observing, at a safe distance, the unthinking enjoyment of other people was evident in the *Iron Foundry*'s critical reception: even the most hostile reviewers had to admit that Mosolov's mimetic gambit appealed to a broad public, if only as grounds on which to indict that public. Noting that *Pacific 231* and the *Iron Foundry* 'never fail to bring the house down whenever they are performed', one British writer concluded disparagingly in 1931 that 'the public will tolerate almost any degree of cacophony provided it has an illustrative intention'.¹⁰⁷ That tolerance was not universal, though: in France and the United States, some conductors adopted the practice of making the *Iron Foundry* the last item on a concert programme and providing time for patrons offended by its abrasiveness to leave early, while the rest stayed to enjoy the amusing finale.¹⁰⁸

Criticism 1/1 (2017). An earlier and paradigmatic case of this kind of audience behaviour is analysed in Calico, 'Noise and Arnold Schoenberg's 1913 Scandal Concert'.

104 Sianne Ngai, 'Theory of the Gimmick', *Critical Inquiry* 43/2 (2017), 472.

105 Ernest MacMillan, 'Memoirs' (n.d.), quoted in Ezra Schabas, *Sir Ernest MacMillan: The Importance of Being Canadian* (Toronto: University of Toronto Press, 1994), 116.

106 Ngai, 'Theory of the Gimmick', 469, 471.

107 C. G., 'B.B.C. Symphony Concert', *The Observer* [London], 19 November 1931, 8.

108 See, for example, H. B., 'Bordeaux', *Le Ménestrel* 94/11 (11 March 1932); [Unsigned], 'National Symphony in Sunday Concert Starring Grainger'.

For the *Iron Foundry*, the rift between modernism and mass culture, the so-called ‘great divide’ of the early twentieth century, did not prove impassable.¹⁰⁹ The work regularly appeared in the kinds of middlebrow settings, such as children’s concerts or the Proms, that have recently attracted much musicological scrutiny.¹¹⁰ However, no one seems to have imagined this gimmicky music serving as a vehicle for the aspirations of aesthetic education and moral uplift usually associated with middlebrow culture, especially earlier in the twentieth century.¹¹¹ (In its register and reception, the work was clearly very different to the symphonies from the later 1930s by Shostakovich and others that Pauline Fairclough has suggested might be productively described as emerging from a distinctively Soviet middlebrow.¹¹²) At once too challenging and too accessible to slot comfortably into any established category, the *Iron Foundry* reminds us that the middlebrow project was always partial and incomplete. Much the same audiences we most strongly associate with middlebrow culture in this period, in much the same contexts, did not only participate in anxious efforts to mediate between the extremes of high and low culture. They were also drawn to more frivolous – and perhaps more subversive – moments in which the heady pleasures of popular culture, only lightly transformed, surfaced unexpectedly in the sanctum of the concert hall.

An unstable blend of the ‘high’ and the ‘low’ was characteristic of machine aesthetics, due to its strong associations with both modernism and mass entertainment. The duality was evident in the case of the *Iron Foundry*: Mosolov’s music belonged not only in the highbrow orbit of Stravinsky and Futurism, but also, as *The Spirit of the Factory* demonstrates most vividly, in a lineage of late nineteenth- and early twentieth-century popular entertainments that generated spectacle and humour from mechanical movement. In the latter respect, one notable precursor was the ballet *Excelsior*, first staged in Milan in 1881, and then performed in numerous tours and revivals through to the mid-twentieth century. As Gavin Williams has described, the ‘proto-robotic dance’ of this long-running extravaganza embraced the pleasures of ‘mass choreography’ and ‘geometry in motion’.¹¹³ *Excelsior*, argues Williams, can

109 Andreas Huyssen, *After the Great Divide: Modernism, Mass Culture and Postmodernism* (Basingstoke: Macmillan, 1988).

110 On the middlebrow in recent musicology, see Laura Tunbridge, ‘Thoroughly Modern Middles’, *Cambridge Opera Journal* 31/1 (2019); and Christopher Chowrimootoo and Kate Guthrie, convenors, ‘Colloquy: Musicology and the Middlebrow’, *Journal of the American Musicological Society* 73/2 (2020). See also Kate Guthrie, *The Art of Appreciation: Music and Middlebrow Culture in Modern Britain* (Oakland, CA: University of California Press, 2021). On the *Iron Foundry* at the Proms, see note 127 this article.

111 Precisely for this reason, performances of Mosolov for children infuriated some commentators: [Unsigned], ‘Concerts for Young: Music Good and Bad’, *The Argus* [Melbourne], 27 August 1936.

112 Pauline Fairclough, ‘Was Soviet Music Middlebrow? Shostakovich’s Fifth Symphony, Socialist Realism, and the Mass Listener in the 1930s’, *Journal of Musicology* 35/3 (2018).

113 Gavin Williams, ‘*Excelsior* as Mass Ornament: The Reproduction of Gesture’, in *Nineteenth-Century Opera and the Scientific Imagination*, ed. David Trippett and Benjamin Walton (Cambridge: Cambridge University Press, 2019), 251, 256. In 1934, Constant Lambert highlighted the same connection, albeit more scathingly: ‘Our latter-day mechanical romantics [i.e. composers such as Mosolov or Honegger] are indeed only filling in a corner which – save for a few ludicrous exploits like Marenco’s *Excelsior* – was left unexploited by the nineteenth-century aesthetic romanticists’; Constant Lambert, *Music Ho! A Study of Music in Decline* (London: Faber & Faber, 1934), 245.

be thought of as what Siegfried Kracauer called a ‘mass ornament’: a kaleidoscopic spectacle of patterned movement devoid of substantive content – devoid, that is, of ‘depth’ – whose dehumanizing effects reduced human beings to ‘clusters whose movements are demonstrations of mathematics’, and exemplified how the latest capitalist production methods accommodated the individual only as ‘a tiny piece of the mass’.¹¹⁴ Deriving from mimesis a particular kind of ornamental abstraction – what the Russian-American conductor Nikolai Sokoloff explained to an audience in Cleveland as its ‘design of circles, parallel and vertical lines’ – the *Iron Foundry* transformed the orchestra into just such a burlesque of rationalized production.¹¹⁵ It actualized the analogy between embodied movement and economic system. Bolm’s Hollywood Bowl spectacular brought this patterning of movement into stark relief, in ways that exemplify the dynamic reciprocities between American ballet and commercial show dance in the 1930s, particularly as regards how both genres of performance staged and disciplined working bodies.¹¹⁶ Recuperated in California as music to accompany dance, the *Iron Foundry* realized Kracauer’s most famous pronouncement in startlingly literal terms: ‘The hands in the factory correspond to the legs of the Tiller Girls.’¹¹⁷

As the objections of the *Giesserei-Zeitung* suggest, it was not those who really worked in iron foundries who were amused. Mosolov’s international audience was primarily a middle-class one. For these listeners, the cognitive dissonance of encountering, simultaneously, orchestral music and industrial noise involved an enjoyable dip in the dressing-up box: the inspired and highly trained artists of a bourgeois institution slumming it as a faceless mass of unskilled labourers appended to an assembly line (a joke realized in a crudely literal-minded way by the Toronto Symphony Orchestra, with their overalls and lunchboxes). As one critic reported from a Melbourne performance of the *Iron Foundry* in 1936:

In common with most examples of ‘proletarian music’ constructed by earnest young men with more intelligence than sense of beauty, ‘The Iron Foundry’ . . . provides an interesting study in inverted class consciousness. Ostensibly it glorifies the ‘worker’. Actually it depends for a hearing upon the tolerance of leisured and wealthy patrons. No man or woman obliged to toil for daily bread in such a house of torment as is depicted by Mosolov would be likely to welcome its gruntings, raspings, whistles, and shrieks as a form of entertainment. Judged by æsthetic standards, ‘The Iron Foundry’ is an abomination. As a novelty with which to amuse a sophisticated audience it has merit, and the spectacle of trained musicians manipulating steel plates and emulating the roar and rattle of machinery excited on Saturday night a hilarious response.¹¹⁸

114 Siegfried Kracauer, ‘The Mass Ornament’ (1927), in *The Mass Ornament: Weimar Essays*, trans. Thomas Y. Levin (Cambridge, MA, and London: Harvard University Press, 1995), 76, 78.

115 Margaret Alderson, ‘Sokoloff Presents a Soviet Novelty: “Factory” by Mosolov Proves Strident Composition’, *Musical America* 50/18 (25 November 1930), 30. Sokoloff was born in Kyiv (like Mosolov), but pursued his career almost entirely in the United States.

116 Mark Franko, *The Work of Dance: Labor, Movement, and Identity in the 1930s* (Middletown, CT: Wesleyan University Press, 2002), esp. 107–23.

117 Kracauer, ‘The Mass Ornament’, 79.

118 [Unsigned], ‘Noisy Novelty: Orchestral Surprises’, *The Argus* [Melbourne], 13 July 1936, 3.

Mimesis thus underscored, rather than closed, the gap between those present in the concert hall and a seemingly dehumanized industrial proletariat, and in ways that subverted the work's presumed intent as propaganda. Construed as a representative cultural artefact of Russia's misguided social experiment, this 'noisy novelty', as the same critic labelled it, was sound 'out of place' in more ways than one. Here, despite its origins in the world's first communist state, Mosolov's work made explicit the latent class politics and xenophobia of Henri Bergson's much-cited definition of humour as a collective purging of '[s]omething mechanical encrusted on the living'.¹¹⁹

Certain of the *Iron Foundry*'s comic effects stemmed, then, from the disjunction between the organic and the mechanical, between music and noise. Yet part of what made the work so distinctive was how it subverted these familiar oppositions by collapsing their polarities in rhythmic entrainment. In a riposte to Bergson and other theorists who espouse ahistorical models in which humour is always caused by conflict or surprise, the literary critic Michael North has proposed that 'the machine age seems to have brought, along with all its other dislocations, a new motive for laughter and perhaps a new form of comedy'.¹²⁰ Significantly implicated in the gimmick's emergence as an aesthetic category, this 'machine-age comedy' extracted humour from the very predictability of repetitive mechanical movement, since 'the most thorough mechanization can produce, out of its very regularity, a new form of nonsense'.¹²¹ Just as Charlie Chaplin fascinated so many intellectuals of the day, this comic style cut across the divides between high and low culture.¹²² If we open out the category to include sound and live performance, 'machine-age comedy' elucidates the *Iron Foundry*'s appeal as popular entertainment, especially when, with Edwin Evans, we listen for rhythm as the work's primary parameter.¹²³ This mass-ornamental music derived humour not only from a conflict between organic life and mechanical repetition, but also from the latter's own distinctive pleasures.

North's perspective places the trope of Mosolov as 'photographer' in a new light: what if that metaphor actually reveals an impulse to associate the *Iron Foundry* with the *moving pictures*? This proposition lends new significance to how quickly the work made it to Hollywood, if not, in the end, into the movies. (In fact, Bolm's work on *The Mad Genius* would not be the *Iron Foundry*'s only close encounter with American film: its cinematic potential was also recognized by Walt Disney and Stokowski, who in September 1938 listened to and discussed the

119 Henri Bergson, *Laughter: An Essay on the Meaning of the Comic*, trans. Cloudesley Brereton and Fred Rothwell (London: Macmillan, 1911), 37.

120 Michael North, *Machine-Age Comedy* (New York: Oxford University Press, 2009), 5.

121 North, *Machine-Age Comedy*, 18; this passage is a gloss on Walter Benjamin's descriptions of Charlie Chaplin. Ngai relates the gimmick to what early twentieth-century American commentators called the 'New Humor', a mode of popular comedy (most conspicuous in vaudeville, cartoons, and cinema) that privileged the immediate rewards of gags and slapstick over the deferred satisfactions of narrative development, and refers approvingly to North's account of such entertainment's machine-like qualities; Ngai, 'Theory of the Gimmick', 474n19, citing North, *Machine-Age Comedy*, 8.

122 North, *Machine-Age Comedy*, 19–23.

123 Evans, 'The Liege Festival', 277.

work when they were shortlisting music for *Fantasia* [1940].¹²⁴) Cinema was, after all, the art-form par excellence of machine-age comedy. It was also the one in which Soviet modernists of the 1920s achieved their greatest esteem abroad. Indeed, it may be no coincidence that critics from Berlin – where Soviet films had enjoyed their greatest international success, particularly with the release of *Battleship Potemkin* in 1926 – were the readiest to suggest connections between the *Iron Foundry* and cinema, with one comparing Mosolov to Edmund Meisel, the composer of landmark film scores including *Potemkin*, and another labelling the work ‘a skilful sound-film recording of reality’.¹²⁵ Such responses might prompt us to wonder whether the *Iron Foundry*’s allegedly startling realism might be best credited to a correspondence between its distinctive rhythmic patterns and the reproduction of mechanical movement so widely disseminated in the 1920s and 1930s via the mechanically reproduced medium of film. As Hansen argued, cinema in this period became ‘something like the first global vernacular’: ‘an international modernist idiom on a mass basis’, which ‘articulated, multiplied, and globalized a particular historical experience’. The resulting ‘mass production of the senses’ may have done much to enable the *Iron Foundry*’s success, rendering its mimetic gestures both legible and instantly appealing across a vast geographical span.¹²⁶ The work’s widespread popularity might therefore be taken as evidence that new technologies really had forged a more genuinely ‘international’ culture. But if so, it was media machines, not industrial ones, that were chiefly responsible.

Novelty and obsolescence

The Mosolov craze was a transient affair. Already in the middle of the decade, there were signs that the composer’s star was beginning to fade; by the end of the Second World War, he had all but been forgotten. After his death in 1973, a steady trickle of performances and recordings re-emerged, partly as a result of the efforts of scholars in the West to rescue, in retrospect, the early Soviet modernists they viewed as victims of Stalin’s regime.¹²⁷ But the necessity of a

124 ‘We could do something good with machinery’, Disney remarked; quoted in Neal Gabler, *Walt Disney: The Biography* (London: Aurum, 2011), 307. Two sound film versions were made of *Pacific 231*, one by the experimental Soviet filmmaker Mikhail Tsekhanovsky in 1931 and the other by his French counterpart Jean Mitry in 1949, both of which combined Honegger’s music with montages of shots of trains and train travel.

125 Einstein, ‘Sinfonie-Konzerte’, 525; ‘eine geschickte Tonfilmaufnahme der Realität’; Hans Kuznitsky, ‘Das internationale Musikfest in Lüttich’, *Deutsche allgemeine Zeitung*, 12 September 1930, n.p. On *Potemkin* in Berlin, see Kristin Thompson, ‘Eisenstein’s Early Films Abroad’, in *Eisenstein Rediscovered*, ed. Ian Christie and Richard Taylor (London and New York: Routledge, 1993), 54–8.

126 Hansen, ‘The Mass Production of the Senses’, 68.

127 Especially following the centenary of the Russian Revolution in 2017, the work has now secured a steadier niche in the orchestral repertoire as a historical curiosity. The BBC Proms are broadly representative of this performance history: the *Iron Foundry* was played there seven times between 1931 and 1940, including at the Last Night in 1932, but was not then heard again until 2010 and 2013. See BBC, ‘All Performances of Alexander Mosolov: Iron Foundry at BBC Proms’, BBC Proms Performance Archive, www.bbc.co.uk/proms/events/works/f3ed917c-e8b1-4b3e-85f1-134c9e29dd3f. One pioneering figure in the rediscovery of 1920s Soviet modernism was the West German musicologist Detlef Gojowy; see his *Neue sowjetische Musik der 20er Jahre* (Regensburg: Laaber-Verlag, 1980). See also William Quillen, ‘The Idea of the 1920s in Russian Music Today’, in *Russian Music since 1917: Reappraisal and*

revival movement demonstrates that the *Iron Foundry*'s early renown had not translated into canonicity. The work was to some extent a victim of its own success. By the end of the 1930s, its novelty had been blunted by ubiquity; even humour based on repetition can only bear being repeated so many times. Meanwhile, Shostakovich's international breakthroughs were broadening ideas about the possibilities of Soviet music.¹²⁸

Perhaps more crucially, the heyday of machine-age comedy was drawing to a close. As film studios reorganized themselves around the possibilities of synchronized sound, the reflexive concern with mechanized movement so prominent in silent cinema was overtaken by other priorities.¹²⁹ And as everyday experiences of technology such as filmgoing changed, so, too, did the symbol of 'the machine'. In his description of the 1920s machine aesthetic, the architectural historian Richard Guy Wilson provides, in effect, a recipe for the Mosolovian mass ornament: begin from a 'perception of the machine as a combination of parts – gears, cams, axles', and then arrange these 'simple geometrical elements' into 'complex patterns'.¹³⁰ Especially after 1930, this 'machine-as-parts syndrome' gave way, by Wilson's account, to various kinds of black-boxing: neoclassical purity, streamlined forms, biomorphic design.¹³¹

With this shift, Mosolov started to suffer the same fate as Marcel Poot in 1930: he sounded embarrassingly outdated. In 1934, Constant Lambert derided works such as the *Iron Foundry* and *Pacific 231*, predicting:

The present vogue for mechanical romanticism, being based primarily on the picturesque aspects of machinery, is bound to disappear as the mechanic more and more comes to resemble the bank clerk, and as the Turner-esque steam engine gives way to the unphotogenic electric train. It is only comparatively primitive machinery that affords a stimulus, and there is already a faint period touch about *Pacific 231* and *Le Pas d'Acier*.¹³²

For Lambert, new kinds of machines were superseding the propinquity of high technology and the 'primitive' that the *Iron Foundry*'s musical language denoted. By the end of the 1930s, other critics also came to consider Mosolov's 'painful realism . . . as old-fashioned

Rediscovery, ed. Patrick Zuk and Marina Frolova-Walker (Oxford: Oxford University Press for the British Academy, 2017).

128 Christopher H. Gibbs, "'The Phenomenon of the Seventh": A Documentary Essay on Shostakovich's "War" Symphony', in *Shostakovich and His World*, ed. Laurel E. Fay (Princeton, NJ, and Oxford: Princeton University Press, 2004); Pauline Fairclough, 'The "Old Shostakovich": Reception in the British Press', *Music & Letters* 88/2 (2007).

129 One prominent example is Disney cartoons, which shifted in the later 1930s from short humorous cartoons to more narrative-based feature films (and declined in the estimation of modernist intellectuals as a result); see North, *Machine-Age Comedy*, 53–83. Disney's self-conscious turn away from 'gags' in this period may be one reason why he ultimately decided against including the *Iron Foundry* in *Fantasia*.

130 Richard Guy Wilson, 'Machine Aesthetics', in Richard Guy Wilson, Dianne H. Pilgrim, and Dickran Tashjian, *The Machine Age in America, 1918–1941* (New York: Brooklyn Museum in association with Harry N. Abrams, 1986), 47.

131 Wilson, 'Machine Aesthetics', 45, 51–63.

132 Lambert, *Music Ho!*, 245.

as a 1922 fox-trot'.¹³³ The *Iron Foundry* had become obsolete.¹³⁴ Despite the work's immediate popularity, this outcome was hardly unexpected. Indeed, it was arguably because Mosolov's success had always seemed so likely to be short-lived that mainstream concert institutions could accommodate, and then discard, the *Iron Foundry* without compromising on their dominant museum function. Safely marginalized as a gimmick with a temporary shelf life, the work served above all as an entertaining novelty item: a refreshing diversion from the established canon, but not a fundamental augmentation or challenge to it.

The decline of mimetic mechanicity coincided with major shifts in both international relations and public attitudes towards internationalism. The economic and political crises of the 1930s severely undermined the claim that technological progress would unite the world in peace and prosperity. The intuition that the citizens of 'modern' states shared much the same historical trajectory and sensory experiences – an intuition essential to and reinforced by the extensive dissemination of machine aesthetics – was confronted with the hard reality of ideological and military conflict. The internationalist strain in popular culture survived these and further dislocations, but not without a change in emphasis. During the Second World War and the early Cold War, Hollywood sought to educate its audiences in their imagined new attachments and responsibilities as global citizens by projecting a sentimental ideal of shared humanity transcending cultural and racial difference: an internationalism centring more on sympathy for suffering children than wonder at industrial machines.¹³⁵ In this new world, the configuration of aesthetic practices, media techniques, and narratives of modernity that had sustained interwar machine aesthetics as a mode of vernacular internationalism definitively unravelled. By mid-century, there was little appetite or opportunity anywhere to preserve the memory of the *Iron Foundry*'s astonishing, if ultimately ephemeral, success.

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133 Katharine Scherman, 'Music: Refugee Music Enriches America; Records – Modern Composers', *North American Review* 247/1 (Spring 1939), 163.

134 As Heather Wiebe observes, 'obsolescence' connotes 'overtones of the technological, suggesting those objects that most quickly fall from the height of modernity and usefulness to becoming embarrassing encumbrances'; Heather Wiebe, 'A Note from the Guest Editor', *The Opera Quarterly* 25/1–2 (2009), 3.

135 Christina Klein, *Cold War Orientalism: Asia in the Middlebrow Imagination, 1945–1961* (Berkeley, CA: University of California Press, 2003); M. Todd Bennett, *One World, Big Screen: Hollywood, The Allies, and World War II* (Chapel Hill, NC: University of North Carolina Press, 2012); Julie Wilson, 'Stardom, Sentimental Education, and the Shaping of Global Citizens', *Cinema Journal* 53/2 (2014). This strand of liberal internationalism was no less rooted in early twentieth-century imperialism. See Emily Baughan, *Saving the Children: Humanitarianism, Internationalism, and Empire* (Oakland, CA: University of California Press, 2022).

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