Beyond Given Knowledge

European Avant-Garde and Modernism Studies

Etudes sur l'avant-garde
et le modernisme en Europe

Studien zur europäischen
Avantgarde und Moderne

Edited by Sascha Bru and David Ayers

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Beyond Given Knowledge

Investigation, Quest and Exploration
in Modernism and the Avant-Gardes

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The avant-garde and modernism take centre-stage within European academia today. The experimental literatures and arts in Europe between ca. 1850 and 1950, and their aftermath, figure prominently on curricula, while modernism and avant-garde studies have come to form distinct yet interlocking disciplines within the humanities in recent years. These disciplines take on various guises on the continent. Within French and German academia, "modernism" remains a term rather alien – "die Moderne" and "modernité" coming perhaps the closest to what is meant by "modernism" within the English context. Here, indeed, modernism has acquired a firm place in research, signaling above all a period in modern poetics and aesthetics, roughly between 1850 and 1950, during which a revolt against prevalent traditions in art, literature and culture took shape. Similarly, the term "avant-garde" comes with an array of often conflicting connotations. For some, the avant-garde marks the most radically experimental arts and literatures in modernism from the nineteenth century onward – the early twentieth-century vanguard movements of Futurism, Expressionism, Dada and Surrealism, among others, coinciding with the avant-garde's most "heroic" phase. For others, the avant-garde belongs to a cultural or conceptual order differing altogether from that of modernism – the vanguard exploits from the 1950s onward marking that avant-garde arts and literatures can also perfectly abide outside modernism.

European Avant-Garde and Modernism Studies, *far from aiming to reduce the complexity of various European research traditions, aspires to embrace the wide linguistic, terminological and methodological variety within both fields. Publishing an anthology of essays in English, French and German every two years, the series wishes to compare and relate French, German and British, but also Northern and Southern as well as Central and Eastern European findings in avant-garde and modernism studies.*

Collecting essays stemming mainly from the biennial conferences of the European Network for Avant-Garde and Modernism Studies (EAM), books in this series do not claim to exhaustiveness. Rather, they aim to raise questions, to provide partial answers, to fill lacunae in the research, and to stir debate about the European avant-garde and modernism throughout the nineteenth and twentieth centuries. The series attaches great value to interdisciplinary and intermedial research on experimental aesthetics and poetics, and intends to encourage an interest in the cultural dimensions and contexts of the avant-garde and modernism in Europe. A digital addendum to the book series can be found on the website of the EAM: www.eam-europe.be. There, readers can consult and add to an open-source bibliography

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of books in avant-garde and modernism studies, maintained by Gunther Martens (Ghent University). At present the bibliography already counts several thousands of titles in English, French and German, and it is our hope that it can become a vital point of reference in the exchange of expertise.

L'avant-garde et le modernisme occupent actuellement une place majeure dans les universités européennes. Les arts et les littératures expérimentaux en Europe de 1850 à 1950 et au-delà font partie intégrante des programmes universitaires, tandis que les recherches sur l'avant-garde et le modernisme sont devenues, à l'intérieur des sciences humaines, des disciplines à part entière mais solidaires les unes des autres. Ces disciplines varient néanmoins à travers le continent. Dans les universités françaises et allemandes, la notion de « modernisme » reste plutôt étrangère : les notions de « modernité » et de « die Moderne » s'utilisent sans doute davantage pour ce que désigne la notion de « modernism » dans le contexte anglophone. Dans la recherche anglophone, en effet, la notion de « modernism » a acquis une certaine stabilité : elle désigne avant tout une période de la modernité poétique et esthétique, approximativement entre 1850 et 1950, au cours de laquelle a pris forme une révolte contre les traditions artistiques, littéraires et culturelles prédominantes. De la même façon, la notion d' « avant-garde » prend des connotations divergentes, souvent conflictuelles. Pour certains, l'« avant-garde » désigne les arts et les littératures les plus radicalement expérimentaux qui se développent à l'intérieur du modernisme à partir du 19ème siècle. Dans ce cas, les mouvements avant-gardistes du début du 20ème siècle – dont le futurisme, l'expressionisme, le dadaïsme et le surréalisme – correspondent à la phase avant-gardiste la plus « héroïque ». Pour d'autres, l'avant-garde appartient à un ordre culturel et conceptuel entièrement différent du modernisme. Dans cette perspective, l'avant-garde survit au modernisme, comme en témoigne la permanence d'une sensibilité avant-gardiste après 1950.

Loin de vouloir réduire la complexité et la variété des traditions de recherche européennes, *Etudes sur l'avant-garde et le modernisme en Europe* vise à embrasser la grande diversité linguistique, terminologique et méthodologique à l'intérieur de ces deux domaines de recherche. Par la publication d'un volume d'essais en anglais, en français et en allemand tous les deux ans, la collection souhaite comparer et mettre en rapport les résultats issus des traditions de recherche française, anglaise et allemande, mais également d'Europe nordique et méridionale, centrale et orientale.

Le premier objectif de cette collection est de rassembler une sélection des textes présentés lors des rencontres bisannuelles du Réseau européen de recherche sur l'avant-garde et le modernisme (EAM). En ce sens, son ambition est moins d'épuiser un sujet que de soulever des questions, de suggérer quelques réponses

provisoires, de combler certaines lacunes dans la recherche et, plus généralement, de maintenir vivant le débat sur l'avant-garde et le modernisme européens au cours des 19ème et 20ème siècles. La collection attache beaucoup d'importance à la recherche interdisciplinaire et intermédiale sur les esthétiques et les poétiques expérimentales et se propose de stimuler l'intérêt pour les dimensions culturelles et contextuelles de l'avant-garde et du modernisme en Europe. Un complément numérique à la collection est offert par le site web de l'EAM : www.eam-europe.be. En ces pages, les lecteurs trouveront en libre accès, avec la possibilité d'y ajouter de nouvelles références, une bibliographie de livres sur l'avant-garde et le modernisme. La supervision et la mise à jour permanente de ce site sont assurées par Gunther Martens (Université de Gand). Actuellement, cette bibliographie comprend déjà plusieurs milliers d'entrées en anglais, en français et en allemand, et on peut espérer que cette banque de données se développera en un point de rencontre et d'échange de nos expertises.

Die Bedeutung von Forschungsinitiativen zum Thema Avantgarde und Modernismus nimmt in der europäischen Forschungslandschaft weiterhin zu. Die experimentellen Literaturen und die Künste in Europa zwischen ca. 1850 und 1950 und ihre Nachwirkungen sind als Lehr- und Forschungsbereiche an den europäischen Forschungsinstitutionen und in den Lehrplänen heutzutage nicht mehr wegzudenken. Avantgarde und Moderne haben sich in den letzten Jahrzehnten zu unterschiedlichen, aber mehrfach miteinander verzahnten Forschungsgebieten entwickelt. Innerhalb der französischen und deutschen akademischen Welt bleibt der Sammelbegriff „modernism" weniger geläufig – „die (klassische) Moderne" und „modernité" fungieren hier als nahe liegende Äquivalente zu demjenigen, was im internationalen Kontext als eine zeitliche und räumliche Ko-Okkurenz künstlerischer Ausdrucksformen und ästhetischer Theorien namhaft gemacht werden kann, die ungefähr zwischen 1850 und 1950 angesiedelt werden kann. Auf ähnliche Weise entfaltet die Bezeichnung „Avantgarde" eine Reihe häufig widersprüchlicher Konnotationen. Für manche kennzeichnet die Avantgarde den radikalsten experimentellen Bruch der Künste und Literaturen mit den Darstellungs- und Erzählkonventionen des 19. Jahrhunderts: im frühen 20. Jahrhundert zeugen davon Avantgardebewegungen wie Futurismus, Expressionismus, Dada und Surrealismus, Strömungen, die als die „heroische" Phase der Avantgarde bezeichnet werden können. Ab den fünfziger Jahren kommt diese Avantgarde weitgehend ohne modernistische Begleiterscheinung aus. Für andere gehört die Avantgarde zu einem kulturellen Umfeld, das sich, durchaus im Bunde mit der Klassischen Moderne, der Erneuerung ästhetischer Konventionen verschreibt.

Die Bücherreihe Studien zur europäischen Avantgarde und Moderne *möchte der Kompliziertheit der unterschiedlichen europäischen Forschungstraditionen*

gerecht werden und strebt danach, die breite linguistische, terminologische und methodologische Vielfalt abzudecken. Anhand einer zweijährlichen Sammlung von Beiträgen in englischer, französischer und deutscher Sprache möchte die Reihe nicht nur die französisch-, deutsch- und englischsprachigen, sondern auch die nord-, süd-, zentral- und osteuropäischen Ergebnisse der Avantgarde- und Moderne-Forschung einbeziehen.

Die Aufsatzsammlungen der Reihe, die größtenteils aus Beiträgen von den zweijährlichen Konferenzen des Europäischen Netzwerks für Studien zu Avant-Garde und Moderne (EAM) bestehen, erheben keinen Anspruch auf Vollständigkeit. Ihr Ziel ist es vielmehr, Fragen zu stellen, einige Antworten vorzuschlagen, Forschungslücken zu schließen und Debatten über die europäische Avantgarde und die Moderne im 19. und 20. Jahrhrundert auszulösen. Die Studien zur europäischen Avantgarde und Moderne *legen viel Wert auf die interdisziplinäre und intermediale Erforschung experimenteller Ästhetiken/Poetiken und setzen es sich zum Ziel, das Interesse an den kulturellen Zusammenhängen und Kontexten der Avantgarde und der Moderne in Europa anzuregen. Ein digitales Addendum zur Buchreihe befindet sich auf der Homepage des EAM: www.eam-europe.be. Dort können unsere Leser eine frei zugängliche Bibliographie zu Publikationen über Avantgarde und Moderne, die von Gunther Martens (Universität Gent) verwaltet wird, einsehen und ergänzen. Die Bibliographie enthält derzeit einige Tausend Titel auf Deutsch, Englisch und Französisch und wir hoffen, dass sie ein wichtiges Forum für den Austausch von Fachtkenntnissen werden wird.*

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Sascha Bru & David Ayers

Introduction

Harri Veivo

Au-delà des savoirs acquis

« Je ne suis pas une femme. Je suis neutre ». Ainsi commence le « Vierge moderne » d'Edith Södergran. Les douze vers qui suivent répètent la même affirmation de la volonté d'aller au-delà des catégories, des modèles et des oppositions du monde ancien qui n'est pas capable d'héberger le sujet moderne qu'est la poétesse. Elle a 24 ans, nous sommes en 1916, au moment où l'Europe bascule à cause de la guerre vers une époque qui sera radicalement différente du passé. Elle se veut autre. « Je suis l'enseigne à la porte de paradis inédits », écrit-elle, et le poème de se terminer par les vers « Je suis une flamme, exploratrice et gaillarde, / je suis une eau, profonde mais téméraire jusqu'aux genoux, / je suis feu et eau loyalement, librement unis… »[1]

Le chemin que choisit Södergran dans cette quête spirituelle est la poésie. « Je ne crée pas de poèmes », écrit-elle, « je me crée, mes poèmes sont pour moi un chemin vers moi ».[2] Ses compagnons de route dans ce cheminement sont la philosophie – Schopenhauer, Nietzsche –, la théosophie – Steiner – et la religion. L'exploration-création du « moi » qui serait « neutre » ne laisse pas la poésie intacte. Les lecteurs de son temps étaient habitués à reconnaître la poésie à quelques signes distinctifs, dont le mètre et la rime étaient les plus saillants. Pour Södergran, il est évident qu'elle ne détient « la puissance du mot et de l'image qu'en pleine liberté, c'est-à-dire aux dépens du rythme ».[3] La quête qu'elle entreprend, et la fidélité, l'intransigeance et le courage que cette tâche exige, ne laisse pas de choix : il faut que la langue se déploie dans de nouvelle formes, que de nouvelles unités de sens et de nouveaux signes évocateurs émergent. La rupture avec la tradition et la recherche de possibilités d'écriture inédites ne relevaient pas d'un jeu esthétique et social ; elles étaient une nécessité, d'un seul tenant le moyen et l'expression d'une quête spirituelle et philosophique.

La trajectoire géographique de Södergran – de la métropole russe de Saint-Pétersbourg de sa jeunesse au village finlandais de Raivola où elle est morte

1 Edith Södergan, « Vierge moderne », in : *Le pays qui n'existe pas et Poèmes*, trad. Carl Gustaf Bjurström et Lucie Albertini, Paris 1992, 43.

2 Edith Södergan, cité dans Ebba Witt-Brattström, « Edith Södergran », https://litteraturbanken.se/red/forfattare/SodergranE/presentation/SodergranE_presentation.pdf. (consulté de 5 octobre 2017). Ma traduction.

3 Edith Södergran, « Remarque liminaire », in : *Poèmes complets*, trad. Régis Boyer, Paris 1973, 87.

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prématurément en 1923, en passant par des sanatoriums en Suisse – est particulière sans être unique. Comme elle, de nombreux auteurs, artistes et intellectuels ont été propulsés vers des itinéraires incertains par l'effondrement du vieux monde. Parmi ces personnes on trouve de nombreuses figures qui ont cherché à repenser, dans et à travers leur travail artistique et littéraire, les fondements de l'identité, de la perception, du savoir, et de l'être même, que ce soit dans une démarche moderniste au sens greenbergien, focalisée sur une exploration auto-réflexive des possibilités qu'offre le médium d'expression, ou bien dans une démarche avant-gardiste au sens bürgerien d'auto-critique des conditions institutionnelles de l'art et de la littérature – ou bien en suivant une stratégie flexible qui se situe entre ces deux pôles et qu'on pourrait qualifier d'« ultramoderne » ou de « modernisme d'avant-garde ». Mentionnons ici par exemple Wassily Kandinsky, Emil Bønnelycke, Henry Parland et Toyen, tous originaires d'une Europe de zones, de « hubs » et de réseaux, et difficiles à situer dans des catégories rigides. La quête artistique, existentielle ou spirituelle était souvent un voyage dans un espace en mutation.

Dans cet espace, de nouveaux contacts et échanges étaient concevables, de nouvelles épistémès possibles. En 1947, Laszlo Moholy-Nagy, Euro-nomade lui aussi comme Södergan, comparait la technique narrative de Joyce à l'invention médicale qui permet de fabriquer un modèle de foie à l'aide de l'injection de caoutchouc dans l'organe. Dans la littérature comme dans la recherche médicale, grâce à ces nouvelles techniques, « on voit plus ».[4] La science et la littérature modernes partageraient ainsi, selon Moholy-Nagy, le même objectif de découverte, même si « voir » dans le cas de Joyce doit évidemment être compris dans un sens métaphorique, *Ulysses* contribuant à la connaissance de l'expérience du monde tel qu'il est construit et exprimé par la langue et la culture. Le modernisme et l'avant-garde européens ont fréquemment saisi cette possibilité pour explorer de nouvelles manières de voir et de sentir, pour créer ou dévoiler de nouveaux objets de connaissance ; l'objectif a été d'aller au-delà des savoirs acquis. Pensons ici aux surréalistes et au fondement théorique même de leurs multiples démarches, mais également à des écrivains comme Alfred Döblin et John Dos Passos qui ont cherché dans *Berlin Alexanderplatz* (1929) et *Manhattan Transfer* (1925) à rendre compréhensible la réalité hétérogène et insaisissable de la grand métropole moderne. Ce travail s'est fait dans un dialogue avec la science, à travers un processus d'appropriation, souvent aussi dans un esprit ludique, ironique ou critique. Une voie vers de nouvelles formes de savoirs a pu consister à

4 L. Moholo-Nagy, « Literature », in : Richard Kostelanetz (éd.), *The Avant-Garde Tradition in Literature*, Buffalo 1982, 78–141, ici 131. Ma traduction.

refuser la science canonique et rechercher d'autres formes de connaissance dans l'occultisme, l'ésotérisme et le mysticisme. Parfois la littérature et l'art ont par là même réussi à capter des interrogations et des possibilités que la science n'a saisies que plus tard.

La continuité et la pertinence de ces démarches de nos jours n'apparaît pas forcément à l'intérieur de genres et formes d'expression artistiques établis, mais plutôt dans des domaines qui reflètent les profonds changements épistémologiques de notre temps. Dans la critique écologique, la mise en question de l'anthropocentrisme et l'anthro-normativité mène à une interrogation des présupposés théoriques et méthodologiques concernant le mimétisme, la référence et les techniques de narration dans un mouvement réflexif qui trouve de nombreux parallèles dans l'histoire du modernisme et des avant-gardes.[5] Plus inattendue est probablement la référence à Marcel Duchamp et ses *ready-mades* dans le travail contemporain sur les paysages recyclés, ou bien la connexion entre l'avant-garde, l'écologie, l'économie, l'agriculture et la gastronomie dans le « green avant-garde » où les « food hackers » et « cyberagrariens » s'engagent dans des « shared praxis of enlisting aesthetics of collage, conceptual art, and the happening [...] to mobilize radical social change [and] to adapt (or 'hack') the tools of biotechnology, material science, and computer engineering toward socially subversive ends that not only reimagine but also reengineer existing systems ».[6] Dans les sociétés contemporaines, la gastronomie s'est démocratisée et popularisée à travers des programmes comme le « Masterchef » qui relaient l'image d'un art qui serait à la fois ancestral et partagé, mais soumis à l'exigence de l'innovation continue. En même temps, l'industrie agroalimentaire est au cœur même d'importants problèmes économiques, écologiques et politiques. L'opulence, l'efficacité et la sophistication coexistent avec la malnutrition. Si la nourriture et la gastronomie sont engagées dans un processus d'« artification »,[7] il est logique qu'elles deviennent l'objet de démarches avant-gardistes aussi, et que ces démarches puissent avoir une importante dimension critique.

5 Voir par exemple Lawrence Buell, « The Ecocritical Insurgency », *New Literary History*, 30, 1999, n° 3, 699–712; et Stéphanie Posthumus, « Vers une écocritique française : le contrat naturel de Michel Serres », *Mosaic*, 44, 2011, n° 2, 85–100.

6 Allison Carruth, « The Green Avant-Garde : Food Hackers and Cyberagrarians », *Resilience*, 2, 2014, n° 1, 48–65, pas de pagination. Voir aussi Cecilia Novero, *Antidiets of the Avant-Garde: From Futurist Cooking to Eat Art*, Minneapolis 2010. Sur les paysages recyclés, voir Elisa Poli, « Landscape Ready-mades », in : Michela De Poli et Guido Incerti, *An Atlas of Recycled Landscapes*, Milano 2014, 13–15.

7 Voir Nathalie Heinich et Roberta Shapiro (éds.), *De l'artification. Enquêtes sur le passage à l'art*, Paris 2012.

Le discours de la fin de l'avant-garde, si fréquemment évoqué depuis les années 70, peut ainsi apparaître comme un symptôme de la myopie envers un déplacement graduel mais fondamental des frontières de l'art et des pratiques esthétiques en direction de nouveaux champs, objets et réseaux. Par ailleurs, il reflète une série de changements profonds dans les relations entre les arts, la science et la politique et dans les fonctions sociales et politiques des institutions. « L'avant-garde » subit la concurrence d'autres notions comme « expérimental », « contemporain », « postmoderne » ou « cosmoderne » qui cherchent à mieux conceptualiser les enjeux politiques et éthiques dans un monde où les présupposés de l'avant-garde historique ne sont plus valables.[8] Les musées – ces épouvantails historiques de l'avant-garde – se positionnent comme des acteurs critiques dans la société, et « la modernité » devient l'objet d'un regard empreint de nostalgie qui en reconnaît les limites et le caractère mortel. Mais la quête et l'enquête continuent.

Intersections de la science, de la technologie et de l'art

Avant de « dicter » ses « premières volontés à tous les hommes vivants de la terre », le narrateur du « Manifeste du Futurisme » raconte comment il a passé la nuit à discuter « aux frontières extrêmes de la logique [...] sous les lampes de mosquées dont les coupoles de cuivre [...] avaient pourtant des cœurs électriques », seul avec ses amis et « les mécaniciens dans les infernales chaufferies des grands navires [et] les noirs fantômes qui fourragent dans le ventre rouge des locomotives ».[9] Marinetti situe ainsi l'aventure futuriste dès le début au point d'intersection de l'archaïque et du progrès technologique, aux confins de la raison, et dans la compagnie non pas uniquement des artistes et écrivains, mais aussi de nouvelles figures qui incarnent les dures conditions de travail dans le monde contemporain. Le Futurisme n'était pas étranger non plus à l'hybridation critique de l'art, de la technologie et la gastronomie évoquée plus haut.[10]

8 Sur ces discussions, voir par exemple Paul Stephens, « What Do You Mean by 'Literary Experimentalism ?' : Notes Toward a History of the Term », *Arizona Quarterly*, 68, 2012, n° 1, 143–173 ; Theo D'Haen, « European Postmodernism : The Cosmodern Turn », *Narrative*, 21, 2013, n° 3, 271–283 ; et Elizabeth E. Guffey, *Retro. The Culture of Revival*, London 2006.

9 F.-T. Marinetti, « Le Futurisme », *Le Figaro* 20 février 1909, https://monoskop.org/images/6/64/Marinetti_FT_1909_Manifeste_du_Futurisme.jpg (consulté le 5 octobre 2017).

10 Voir Filippo Tommaso Marinetti, *The Futurist Cookbook*, Lesley Chamberlain (éd.), transl. Suzanne Brill, London 2014.

Günter Berghaus analyse dans « F. T. Marinetti's Quest for an Art Inspired by Science » comment la science a inspiré le fondateur du futurisme dans sa recherche d'une union entre la vie et l'art. L'article propose d'une part une contextualisation historique de l'œuvre marinettien dans l'Egypte et la France du tournant du siècle, et retrace d'autre part la continuité de la recherche de l'extension des capacités de l'homme par la technologie – le thème de « l'homme multiplié » des futuristes – dans le *design* contemporain des prothèses. Paola Sica jette la lumière sur un autre volant du futurisme par une analyse de la production artistique de Ginna (Arnaldo Ginanni Corradini) qui cherchait à créer une nouvelle épistémologie et de nouvelles stratégies pour l'amélioration de la vie. La voie particulière de Ginna dans le futurisme reflète son intérêt pour la théosophie et la spéculation psycho-physiologique qui représentaient pour lui une nouvelle science.

Si l'œuvre de Duchamp continue à inspirer des projets créatifs et critiques dans de nouveaux domaines comme l'art du paysage, il décèle lui-même de nombreuses questions qui suscitent une réflexion continue sur les relations entre l'art et la science. Jessica M. Law prend le contrepied de plusieurs interprétations concernant le rôle du diagramme dans l'œuvre de l'artiste et propose qu'il soit vu non pas comme un signe de l'intégration de la science et de la technologie dans l'art, mais comme un moyen de questionnement et de problématisation dans une démarche vers une logique alternative qui serait propre à la peinture. L'analyse de la notion de *bioscopic book* que nous offre Aleksandar Bošković montre une autre approche historique à la question du médium artistique. Selon l'auteur, le « livre bioscopique » vise à transformer la relation entre le monde et le lecteur en faisant du corps le site même de l'intervention du *montage thinking* propre à la technologie moderne. La question de la puissance de la forme ou du médium est poursuivie par Esther Sánchez-Pardo, dont l'article analyse les opérations conceptuelles et poétiques que la page rend possible chez Vicente Huidobro et William Carlos Williams. Irina Denischenko montre comment, dans la photopoésie des poétistes tchèques, l'expérimentation intermédiale combinait la découverte accidentelle propre à l'art à une visée rigoureuse et rationnelle propre à la science.

L'analyse des interactions entre la science, la technologie et l'art ne saurait se faire sans une discussion sur le changement du statut même de la science. Indépendamment de savoir si nous vivons aujourd'hui dans une société postmoderne lyotardienne ou si nous n'avons jamais commencé d'être modernes comme le prétend Bruno Latour, il faut souligner que les cas analysés par Cyril Crignon, Sami Sjöberg et Marianne Ølholm nous offrent une perception tout autre de la science et la technologie que celles de Marinetti et des autres figures de la première moitié du 20e siècle. Allan Kaprow et Erwin Goffman, deux adeptes de la performance analysés par Crignon, les ont utilisées à des fins différentes, l'artiste

s'intéressant aux malaises dans l'interaction alors que le sociologue s'est focalisé sur le rôle intégrateur des conventions et des normes comportementales. Chez Panamarenko, l'objet de l'étude de Sjöberg, la théorisation nomade est un élément essentiel de l'œuvre d'artiste et permet une interrogation des limites mêmes de la science conçue comme une pratique ouverte. L'analyse proposée par Ølholm sur la séquence de Fibonacci dans la poésie d'Inger Christensen et de Ron Silliman montre comment une formule mathématique – paradoxalement ouverte à l'infini et pourtant définie et en ce sens fermée – peut créer non pas de l'auto-réflexivité qui priverait la littérature de référence, mais au contraire un ancrage de la poésie dans la réalité sociale et politique.

Autres savoirs

La relation entre la science, la littérature et l'art ne se limite cependant pas à une série d'intersections et d'emprunts ; depuis Platon (au moins), la poésie a été considérée aussi comme un autre domaine de connaissance, plus profond, mystique et puissant, et ainsi plus dangereux. Andreea Apostu montre comment le Néo-traditionnisme des Nabis associe la quête spirituelle et mystique à l'enquête technique concernant la surface, les formes et les couleurs, s'appuyant en même temps sur la recherche scientifique de son temps. Andreas Michel reconstitue la théorie de l'art moderne de Carl Einstein et le rôle de la catégorie du « primitif » dans sa vision de l'importance de l'art dans la création et la représentation du centre spirituel d'une collectivité politique, infaisable par les seuls moyens de la démocratie. Ces études sur les arts visuels donnent suite à l'article d'Alberto Godioli qui analyse l'œuvre de deux grands écrivains modernes, Robert Musil et Carlo Emilio Gadda. Dans leurs textes, la littérature apparaît comme équivalent de la science et des autres formes de savoir moderne dans son effort pour comprendre la réalité qui reste cependant dans un mouvement continu et par là même étranger aux structures discrètes de la pensée rationnelle.

Paris a toujours été un lieu de rencontres entre artistes, écrivains, intellectuels et scientifiques de toutes sortes – et des savoirs, théories et pratiques, qu'ils ont échangés. Ainsi constitue-t-elle, dans les années 50 et 60, le point de convergence de trois figures analysées par Victoria Ferentinou, les surréalistes Pierre Mabille, Mary Wilson et Nanos Valaoritis. Dans la théorie de Mabille, le « merveilleux » apparaît comme un moyen de transformation qui permet de conceptualiser les relations complexes entre les pans subjectifs et objectifs de la réalité, cette idée offrant une sorte méthode ou de cadre pour le travail de Wilson et Valaoritis. La ville de Paris est aussi mise en exergue par Ivanne Rialland qui analyse les

nombreux récits d'espionnage et de filature dans la littérature surréaliste. Le but de ces récits est de constituer l'espace urbain en énigme et de provoquer ainsi une interrogation envers le réel qui mènerait à une intensification du regard porté sur le monde. Kristoffer Noheden continue l'exploration du corpus surréaliste par une analyse de Leonora Carrington et montre comment l'œuvre singulière de cette femme dans la marge du canon de l'avant-garde préfigure de nombreux thèmes qui montent à présent en actualité, comme la conscience écologique et le vieillissement. Si l'approche de Carrington montre une dimension subversive, mystique et ludique et mène à un questionnement des normes et conventions, la pensée sur le « rien », élaborée par Georges Perec et finement analysé par Eddis N. Miller, est riche en paradoxes provocateurs qui mettent en suspens la finalité même attachée aux notions de quête et d'enquête.

Enquêtes sur l'histoire du modernisme et des avant-gardes

L'évolution de l'art et de la littérature depuis le XIX^{e} siècle – processus où le modernisme et les avant-gardes ont joué un rôle de premier plan – a peut-être abouti à une crise des notions mêmes que la critique et la recherche emploient pour parler de l'art. « L'originalité » s'est avérée un mythe ; à sa place, on devrait peut-être faire appel à des notions mineures ou à première vue étrangères à l'art sérieux comme le *cute*.[11] Michel Guérin participe à cette discussion fondamentale par une analyse du travail entamé par l'avant-garde pour épurer la peinture de tout élément accidentel dans l'objectif d'atteindre l'essence du médium. Les paradoxes inhérents à ce processus mènent finalement à l'inflation de la notion du « nouveau » au profit de l'« inédit » qui désigne une relation plus pertinente dans le monde contemporain entre l'œuvre d'art et ses modalités de diffusion et de médiatisation.

Une autre approche de l'évolution – on pourrait même dire de la fluctuation – des significations et des valeurs attachées à l'avant-garde est proposée par Atinati Mamatsashvili-Kobakhidze. Elle montre comment l'avant-garde géorgienne s'est façonnée dans une relation de réflexivité par rapport aux changements dans le contexte historique du pays et de la région caucasienne, les motifs et les récits

11 Voir Sianne Ngai, *Our Aesthetic Categories. Zany, Cute, Interesting*, Cambridge (Mass.) et London 2012, et bien entendu Rosalind E. Krauss, *The Originaliyt of the Avant-Garde and Other Modernist Myths*, Cambridge (Mass.) 1985.

servant à exprimer des prises de position variées aux niveaux esthétique, poétique et politique. Le sujet de Zuzana Říhová est la scène littéraire des années 30 en Tchécoslovaquie où la perception d'une crise civilisationnelle opposait les avant-gardistes et les modernistes. Elle analyse les thèmes du mythe et de la mélancolie dans l'œuvre de Milada Součková et sa relation à la production d'André Gide, dans l'objectif de montrer la pertinence, dans la littérature européenne des années 30, de cette auteure qui considérait le roman comme un projet de recherche. La question de l'histoire et du contexte géographique revient chez Joel Hawkes qui analyse les théories du lieu que Mary Butts et Christopher Wood ont développées à Paris et en Cornouailles. Selon Hawkes, ces théories montrent comment l'effort pour créer un sens du lieu et lui donner une cohérence peut paradoxalement aller à l'encontre d'une relation plus profonde avec le lieu vécu.

L'histoire de l'avant-garde et du modernisme est une histoire réflexive, non pas uniquement dans le sens où il s'agit de deux traditions qui ont valorisé la réflexivité dans la production artistique et littéraire, mais aussi dans le sens où les protagonistes historiques ont fortement contribué à l'historiographie de leurs œuvres et des mouvements auxquels ils ont participé. Agathe Mareuge analyse les enjeux et les contours du savoir sur le Dada qui s'est constitué essentiellement dans le contexte des années 50 et 60, par la contribution des dadaïstes vieillissants et dans un dialogue avec l'institution muséale et universitaire. Jordis Lau adopte une approche intermédiale et une conception étendue du texte pour analyser l'installation vidéo *Phantom Avantgarde* de l'artiste britannique Mark Aerial Weller. À travers cet exemple, qui semble suivre l'ordre de « Make it old » et non pas « Make it new » comme le préconisait Ezra Pound, Lau aborde aussi la question du statut de l'avant-garde dans la mémoire culturelle. L'article de Margaret Tali sur Diāna Dimza-Dimme poursuit le questionnement dans la même optique, mais élargit la perspective à la question du rôle de l'art dans le traitement du trauma causé par l'holocauste dans la mémoire personnelle, familiale et collective. L'œuvre de Dimza-Dimme emprunte des méthodes à la science – l'archéologie – et relie l'art aux questions essentielles de la transmission des expériences et de la responsabilité par rapport à la vérité historique, participant ainsi indirectement à la discussion sur les fonctions de l'art aujourd'hui. La présence de l'héritage du modernisme dans la création contemporaine et l'attrait que certaines de ses démarches extrêmes continuent à avoir sont au cœur de la réflexion de Charline Pluvinet. Dans l'article qui clôt le volume, elle analyse deux romans majeurs de la littérature contemporaine, *Les Détectives sauvages* de Robert Bolaño et *Le*

stade de Wimbledon de Daniele del Guidice, en poursuivant une interrogation sur les possibilités de la création qu'une esthétique poussée à la limite de la disparition de l'œuvre et de l'auteur continue à offrir.

Exploring the Intersections of Science, Technology and Art

Günter Berghaus

F.T. Marinetti's Quest for an Art Inspired by Science

Introduction

The topic of the conference in Rennes, to which this volume of selected papers is related, was "Quest and Investigation". The notion of quest relates to a goal that may be unreachable but which acts as a stimulating force. The investigations that can take us closer to this aim involve concrete actions: key objectives have to be established; a path needs to be mapped out; intermediate steps have to be defined. In this essay I should like to discuss how Filippo Tommaso Marinetti, and with him a host of Futurist artists, combined their utopian quest for a fusion of art and life with concrete investigations that made use of the scientific method of experimentation.

Much has been written about Futurist technophilia,[1] but much less about how science served Futurist artists as a source of inspiration. The often assumed bi-polarity of art and science was transformed by the Futurists into a two-pronged strategy which ultimately aimed at establishing an existence where art and life would be conjoined in a dynamic union. In the first part of this essay, I shall remind the reader of the civilization that Marinetti grew up in and the modern world he encountered when he moved from Africa to Europe. This section highlights the contrast between the Oriental environment of the 1870s and 80s and the

1 From amongst the many titles, see Enrico Crispolti, *Il mito della macchina e altri temi del futurismo*, 2nd ed. Trapani 1971; Roberto Tessari, *Il mito della macchina: Letteratura e industria nel primo Novecento italiano*. Milano 1973; Fanette Roche-Pézard, "La Peinture futuriste italienne devant le monde de l'industrie: Fascination, illustration, écarts (1909–1915)", in: Denis Woronoff (ed.), *Les Images de l'industrie de 1850 à nos jours*, Paris 2002, 134–139; Jeffrey Schnapp, "Propeller Talk", in: *Modernism / Modernity* 1, 1994, 3, 153–178. Ada Masoero, Renato Miracco, and Francesco Poli (eds), *L'estetica della macchina: Da Balla al futurismo torinese*, Milano 2004; Rita Fantasia, "La macchina e l'arte: Lineamenti della poetica futurista; Marinetti e l'Uomo Moltiplicato; Il futurismo e l'analogia", in: Rita Fantasia and Gennaro Tallini (eds.), *Poesia e rivoluzione: Simbolismo, crepuscolarismo, futurismo*, Milano 2004, 153–179; Chiara Gatti, Francesco Tedeschi, and Filadelfo Ferri (eds.), *1905–2005: L'estetica della velocità: "Poesia" e universo futuribile*, Varese 2005; Gabriele Borghini (ed.), *Macchine!: Spirito della macchina tra i fondi d'oro. Una esposizione in chiave futurista. Macchine figurative, Macchine a motore, Macchine anatomiche*, Siena 2009; Günter Berghaus (ed.), *Futurism and the Technological Imagination*, Amsterdam 2009.

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world transformed by the Industrial Revolution which he experienced in 1894/95, first in Paris, and then in Milan. I shall then outline how science and technology inspired Marinetti to formulate a vision of humanity unfolding its true potentials in the age of modernity. In this, I shall draw on selected manifestos in which this quest was formulated and in which important aspects of Marinetti's long-term strategy were presented.

As space is limited, I have chosen to focus on one particular facet of Marinetti's vision of a technologically advanced future: the *uomo moltiplicato*, a term used to designate a humanity enhanced or extended by technological means.[2] The Utopian concepts expressed in the manifesto *L'uomo moltiplicato e il regno della macchina* (Extended Man and the Kingdom of the Machine, 1910) were not entirely science fiction, but based on Lamarck's theories of evolution (which suggested the mutation of species through the formation and modification of organs according to need) and Alexis Carrel (who in 1912 won the Nobel Prize in recognition of his revolutionary methods of transplanting organs). My discussion will demonstrate how the Futurists adopted a form of technology that had emerged in the late nineteenth century – prosthetics – and established in their own artistic practice a bridge between the nineteenth and the twenty-first century. Thus I hope to show that the Futurist quest for a union of art and life and a merger of art and science, and the concrete investigations undertaken to advance this goal, had a utopian character that prefigured phenomena that only became reality some one-hundred years later.

From Egypt to Italy, via Paris, 1876–1894

The genesis of Futurism was substantially shaped by the fact that the founder of the movement, Filippo Tommaso Marinetti, was brought up in Alexandria in Egypt in a pre-industrial world characterized, as he later remembered, by "mud-caked buffalos [...] narrow streets of villages paved with sun-baked excrements, squawking hens [and] bristle-haired dogs".[3] He went to school in a Jesuit college,

2 The term *uomo moltiplicato* turns up in Marinetti's writings around the year 1910 and is often translated as "multiplied man". However, 'multiplication' presupposes an increase in number, i.e. one man being turned into many. What Marinetti meant was a growth in human potential through technical means. I therefore prefer the term 'extended man'.

3 F.T. Marinetti, *La grande Milano tradizionale e futurista. Una sensibilità italiana nata in Egitto*, ed. by Luciano de Maria, Milano 1969, 202. In another passage he remembers the sugar cane fields with the desert dogs, buffalo cows, the smelly villages with their cattle and brightly coloured roosters (Marinetti, *La grande Milano*, 206–207).

where he received an intellectual training that was in accordance with religious and philosophical principles belonging to a pre-modern era. The Marinetti family lived close to the Mahmou-díyah Canal, built in the early nineteenth century to supply Alexandria with fresh water from the Nile. Like many other public works of such a vast scale – the most important and best known being the Suez Canal – it signified that the Khedive government was attempting to pull Egypt into the modern age. Yet, despite such ambitious objectives, the living surroundings that Marinetti encountered as a young man were still those of a traditional Oriental society.

When, as an adolescent, he came to Europe, he discovered a new world. In 1894, he was sent to Paris to take his baccalauréat, and he was able to see some of the great changes that had been brought about by the Industrial Revolution. Countless visitors describe Paris as 'the city of light', due to the new means of illumination that could be found everywhere, on the streets, in public buildings, and increasingly also in private dwellings. Julien Lemer enthused about 'la capitale des lumières' in his description of Parisian nightlife, where "people stroll through the streets, where commerce keeps a radiant illumination going all night and makes it as bright as day".[4] This magnificent illumination turned the streets into a stage on which, night after night, the drama of modernity was enacted:

> No city in the world offers a spectacle like Paris with its boulevards, especially [...] in the evening, when the gaslights come on, when theatres, café-concerts, department stores, bars of the glittering or simple variety light up their sign-boards and switch on their lamps, when the windows of the great circle are ablaze.[5]

Marinetti marvelled at the wonders of technology, which had featured dominantly at the World Fair of 1889 and were increasingly determining everyday life in the city. As many contemporary documents show, Paris in the 1890s was seized by an 'electromania'. National and international shareholder companies raised millions of Francs to build electric power relays to supply the country with much needed energy. Electricity was also celebrated in books, such as *Le Règne de l'*électricité, a historical account by Gaston Bonnefont, printed in 1895, and *La Vie électrique*, a science fiction novel published by Albert Robida in 1890.

Marinetti encountered a Paris that had been partially razed to the ground in order to make way for the *grands boulevards*. The immense traffic he saw there was a reminder that Paris was the city of modern means of transportation

4 Julien Lemer, *Paris au gaz*, Paris 1861, 15 and 28.

5 Jules Vallès, "Le Tableau de Paris IV: Du Boulevard des Capucines à la Madeleine", *Gil Blas* 4, 2 March 1882, no. 835, 1. In: J. Vallès, Œuvres complètes, vol. 3, Paris 1969, 747.

which had already gone through half a century of evolution. Horse-drawn buses were introduced in Paris in 1828 and became very popular after 1850. In 1854, 30 million Parisians used the bus services; in 1889, there were 47 bus lines with 146 millions users. Beginning in 1852, the omnibus faced competition from horse-drawn tramways. The first electric tramway line was opened in 1892, and in 1900 there were 490 electric trams operating in the city. Although the railway developed slower in France than in other European countries, Paris was certainly well serviced by the end of the nineteenth century. St. Lazare became the main railway station for traffic between Paris and the suburbs. In 1869, 13,254,000 passengers passed through its gates, of which some 11 million, or 83 per cent, came from the suburbs. The rapid growth of railway links gave rise to a previously unknown mobility and shaped "an age of movement, – an age of hurry and precipitation".[6]

Paris was a city in which Marinetti encountered for the first time the modern means of communication. Charles Cros (1842–1888) is credited with having invented a practical mechanism to reproduce airborne sound waves in 1877. Following Thomas Alva Edison's construction of a first phonograph in 1878 and a graphophone patented by Alexander Graham Bell in 1886, Henri Lioret (1848–1938) presented at the Trocadéro in 1897 a gramophone, on which a recorded voice was amplified with the aid of two horns. The mechanism was developed further by the Pathé Brothers, who won a golden medal for their phonograph 'Le Gaulois' at the Exposition Universelle of 1900. Another important technology was long-distance communication. Electro-magnetic telegraphy, which had grown steadily in the nineteenth century, was successively replaced with wireless telegraphy. Also the telephone, introduced in France in 1880, took off in the late nineteenth century. Following the nationalization of the telephone grid (1889), some 10,000 subscribers were provided with connections not only within France but also to far-away cities such as Brussels and London. This new experience of time and space became a constituent feature of modernity with far-reaching consequences in the years to come.

When, in 1894, Marinetti settled in Milan, he discovered that in the Northern provinces, despite the general backwardness of Italy, a new civilization was beginning to take shape. The capital of Lombardy was in the process of becoming a conurbation that could stand comparison with other major cities – if not exactly with London, Paris or Berlin, then at least with other regional centres in Europe.

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6 Catherine Gore, *Paris in 1841*, London 1842, 267. For a general discussion of the revolution in the transportation system see Wolfgang Zorn, "Verdichtung und Beschleunigung des Verkehrs als Beitrag zur Entwicklung der 'modernen Welt'", in: Reinhard Koselleck (ed.), *Studien zum Beginn der modernen Welt*, Stuttgart 1977, 115–134.

A 'Haussmannization' was under way that demolished the old popular and medieval quarters and cut large new axes through the city. In the suburbs, huge industrial complexes were being erected, together with modern living quarters for the workforce and large administrative buildings. In the city centre, the population lived with sanitary services unknown in other Italian cities: drinking water was provided from central cisterns directly into apartment blocks, and modern drains connected every house to an underground sewage system. Within the span of some twenty years, Milan became a city of banks, theatres, cinemas, music-halls, department stores and shopping malls. Transport was speeded up with electric tramways, busses and automobiles; streets were illuminated with powerful arc lamps.[7]

Marinetti has left us a vivid description of how, as a young man, he marvelled at Italy's first 'electric city'. In the first chapter of his autobiography, *La grande Milano tradizionale e futurista* (The Great Traditional and Futurist Milan), he recalled how his father took him to the Lombard capital and made him experience the evolving metropolis as "a pleasing example of the commanding aesthetics of the machine".[8] He described how his "adolescent feet, habituated to the yielding sand of Africa" (11) grew accustomed to Milan's marble pavements, how his eyes were fixed on "the gas jets high up in the vaults of the Victor Emanuel Gallery" (11), and how on Piazza Duomo his ears were reverberating from the sounds of an "ultrafast and prolific traffic" (12). He was greatly taken by the popular theatre, the caffè concerto and Variety theatre. As somebody who in his youth had many conflicts with his Jesuit teachers, he lauded the fact that "illuminated advertisement boards insolently sweep away any artistic sense of modesty or clerical prudence" (5) and that the "clamour of real money derides the church bells moaning swinging shedding medieval tears" (10). Pre-industrial lifestyles were yielding to the onslaught of modernity and paved the way for a new civilization, emblematized by "the uncouth and uproarious poetry of the Great Steel Industry" (10) and the "overpowering poetry of the Breda Foundries producing tractors threshing machines trucks ploughs machine guns torpedos aeroplanes merchant ships rails rails" (10).

7 The great transformation of Milan in the late nineteenth / early twentieth century has been presented in the highly informative and very well-illustrated exhibition catalogue *Boccioni a Milano*, Milan 1982, as well as historical studies on the subject, such as Giuseppe de Finetti, *Milano, costruzione di una città*, Milan 1969; Lucio Gambi et al. (eds.), Milano, Bari 1982; Giorgio Rumi et al. (eds.), *Milano nell'unità nazionale 1860–1898*, Milan 1991 and *Milano nell'Italia liberale 1898–1922*, Milan 1993; Franco della Peruta (ed.), *Storia illustrata di Milano: Milano nello stato unitario*, Milano 1995.

8 Marinetti, *La grande Milano*, 11. All further quotations are taken from this edition.

Marinetti's literary programme, as outlined in his *Manifesto tecnico della letterature futurista* (Technical Manifesto of Futurist Literature, 1912) and *Distruzione della sintassi – Immaginazione senza fili – Parole in libertà* (Destruction of Syntax – Untrammelled Imagination – Words-in-Freedom, 1913), was solidly based on and inspired by the great technological advances of his age, and in particular by the modern means of transportation and communication. Marinetti realized early on that the increased pace and rhythm of life would lead to rapid changes on a global scale and would exert a decisive influence on the human psyche. Telegraphy profoundly changed the way humans conducted their daily interaction and created "an overwhelming sense of both simultaneity and omnipresence".[9] He saw that modern man talks "with the same economical rapidity that the telegraph imposes on reporters and war correspondents in their summary reports".[10] Cognitive and a physical links with other intelligent beings produce simultaneous and incessant communication with various parts of the world.[11] Such networks established new relationships between subjects however remote or distant from each other they were living. The fast, immediate and direct forms of mass communication break free from the linguistic and conceptual structures of the past. An accelerated speed of communication shapes the exchange of information and messages on every level. This, Marinetti recognized, would lead to inevitable "modifications to our sensibilities".[12]

Popular Science: A Source of Inspiration for Futurism

Marinetti's Futurism was, at least in part, based on a close observation of the great transformations brought about by science and technology. The scientific

9 "La cinematografia futurista", in: Marinetti, *Teoria e invenzione futurista.*, ed. by Luciano De Maria. Milano 1983, 138. English translation in Marinetti, *Critical Writings*, ed. by Günter Berghaus, New York 2006, 260.

10 "Distruzione della sintassi – Immaginazione senza fili – Parole in libertà", in: Marinetti, *Teoria e invenzione futurista*, 71–72. English translation in *Critical Writings*, 123. On the impact of journalistic discourses on Marinetti's literary aesthetics see Patrick Suter, "Mallarmé and His Futurist 'Heir' Marinetti", in: *International Yearbook of Futurism Studies* 4 (2014): 134–164.

11 Marinetti, *Teoria e invenzione futurista*, 65–66. English translation in Marinetti, *Critical Writings*, 120.

12 Marinetti, *Teoria e invenzione futurista*, 65–66. English translation in Marinetti, *Critical Writings*, 121.

culture of the late nineteenth / early twentieth centuries exercised a formative effect on him and configured much of his technophilia and modernolatry. It is important here to underline that, in the early twentieth century, the two cultures of science and humanities were not yet driven apart by the educational structures we nowadays take for granted. Writers like Marinetti were much better informed about the world of science than their twenty-first century readers. And when we examine the creative and theoretical works of Futurist artists, we notice how fruitful the contact between art and science still was in that period.

Domenico Pietropaolo has investigated the convergence of science and aesthetics in Italian Futurism and has come to the conclusion that Marinetti's routine references to electricity, light, electromagnetic waves, etc. demonstrate how intimately related Futurism was to popular science.[13] In my view, it was exactly because of this scientific approach that Futurist artists were able to extract themselves from the restraints imposed on art by the academic tradition and to pursue their quest for novel artistic expressions that were in tune with the modern age.

Marinetti believed that art had to be liberated from the old models of creativity in order to play a significant role in fashioning the culture of the future. As he explained to Félix del Marle, it had the twin function of offering an "enthusiastic glorification of scientific discoveries and of modern machines" and of providing "the widest possible formula for renewal".[14] Thus, art could function as an anthropological laboratory in which the artist could "mould everything around us and endlessly regenerate the face of the earth".[15] In countless manifestos, Marinetti outlined his vision of an art that charts future scenarios and generates prototypes of a forthcoming global revolution.

Dozens of references to eminent as well as little-known scientists show that the physical interpretation of reality – from the theory of matter to the models of cosmos – offered Marinetti assistance and encouragement in his aesthetic representation of a rapidly changing world. He absorbed from science books and magazines a large number of ideas and approaches and incorporated them into his artistic programme. An often detailed knowledge of scientific ideas fired his enthusiasm and generated aesthetic devices that were fundamental to Futurist

13 Domenico Pietropaolo, "Science and the Aesthetics of Geometric Splendour in Italian Futurism", in: Günter Berghaus (ed.), *Futurism and the Technological Imagination*, Amsterdam 2009, 41–61.

14 "Lettera aperta al futurista Mac Delmarle", in: Marinetti, *Teoria e invenzione futurista*, 93. English translation in Marinetti, *Critical Writings*, 105.

15 "Mafarka il futurista. Prefazione", in: Marinetti, *Teoria e invenzione futurista*, 262. English translation in Marinetti, *Critical Writings*, 38.

art: speed, dynamism, simultaneity, vibration, a distorted time-space nexus, and so on.

But science did not only provide mind-expanding knowledge; it also suggested to Marinetti new creative processes that were to become vital for twentieth-century art. Marinetti and many fellow Futurists gleaned from the sciences an experimental methodology and applied it to the field of art. Thus, they bequeathed to other avant-garde movements the fundamental principle of 'experimentalism'.

In the sciences, experiments have the purpose of investigating phenomena, correcting previous knowledge and acquiring new information. They involve the systematic observation and measurement of processes in a carefully controlled environment, and the formulation, testing and modification of hypotheses. The scientific method serves an ongoing process of investigation and a quest for illuminating the world of the unknown.

In the arts, experimentalism is the opposite of academism. Instead of following the rules and principles taught by the revered masters, avant-garde artists step into unfamiliar terrain. This enables them to come up with unprecedented, innovative works that genuinely break new ground. Similarly, Futurist experimentalism defied traditions, canons and doctrines. Futurist art stepped into a terra incognita, mapped out new terrain and produced surprising discoveries and breakthrough innovations.

In many of his theoretical and creative writings, Marinetti presented the machine as a vehicle for overcoming the restrictions of *given* Nature and for unleashing the emancipatory quality of *created* Nature. He poured all his positivistic, optimistic thinking into this ideological vessel. Science and technology were portrayed as tools for abolishing Nature's dominance over the human race. Through the machine, the human being would become a demiurge, who creates a Nature that is superior to the one made by God. The Futurist 'Machine Age' was to bring about nothing less than a complete 're-fashioning of the universe', both in material terms and in the social sphere. By overcoming the restrictions imposed by Nature and society, and by harnessing the enormous potential of a fully mechanized economy, men and women would be able to discover and unfold their creative potential.

Marinetti wrote that Futurism was "a new way of seeing the world" and an "enthusiastic glorification of scientific discoveries and of modern machines".[16] However, his focus was not only directed to the present. He was constantly seized by what he called "the delirium of Becoming"[17] and an "obsessive vision of the

16 "Lettera aperta al futurista Mac Delmarle", in: Marinetti, *Teoria e invenzione futurista*, 93. English translation in Marinetti, *Critical Writings*, 105.

17 "Lo splendore geometrico e meccanico e la sensibilità numerica", in: Marinetti, *Teoria e invenzione futurista*, 102. English translation in Marinetti, *Critical Writings*, 137.

future".[18] He presented in an imaginative and original manner the drift towards a technologically advanced future that stood in contrast to "the rancid past".[19] Therefore, in his creative as well as theoretical writings, he could envisage some of the forthcoming achievements in the fields of anthropology, sociology and science.

The Futurist 'Extended Man'

In the second part of this essay, I want to show how Marinetti's 'New Man' and his mechanical aesthetics were based on new technologies that were causing a profound anthropological mutation in the early twentieth century. From amongst the many Futurist concepts and artistic devices I have chosen the topic of the 'Extended Man' and I will show to what degree it was influenced by the theories of Jean-Baptiste Lamarck (1744–1829) and the practical development of artificial limbs.

This is not the place to offer a history of prosthetics, which began in antiquity and, in the late nineteenth century, became a quite sophisticated field of experimental science.[20] In our contemporary world, prosthetics have evolved to such a degree that they put 'disabled' persons into a position where they can surpass an 'able-bodied' person. For example, champion sportsmen are nowadays feeling the competition from disabled athletes such as the South African sprinter Oscar Pistorius, who in 2008 nearly qualified for the summer Olympics. The Court of Arbitration for Sport subsequently declared that his prosthetic legs gave him an advantage over other athletes and they disqualified him from participating in IOC events. In an amateur setting, it is still allowed that amputees can compete alongside able-bodied sportsmen in almost every discipline. This is why in 1964 they founded the International Sports Organization for the Disabled, out of which major international events evolved, including the Paralympic Games and most recently, the Cybathlon, an international competition for disabled athletes using bionic assistive technology, held for the first time in October 2016 at Swiss Arena, Kloten.

18 "La guerra elettrica: Visione-ipotesi futurista", in: Marinetti, *Teoria e invenzione futurista*, 319. English translation in Marinetti, *Critical Writing*, 221.

19 "Nascita di un'estetica futurista", in: Marinetti, *Teoria e invenzione futurista*, 316. English translation in Marinetti, *Critical Writing*, 251.

20 An overview from an English perspective is given in John R. Kirkup, *A History of Limb Amputation*, London 2010.

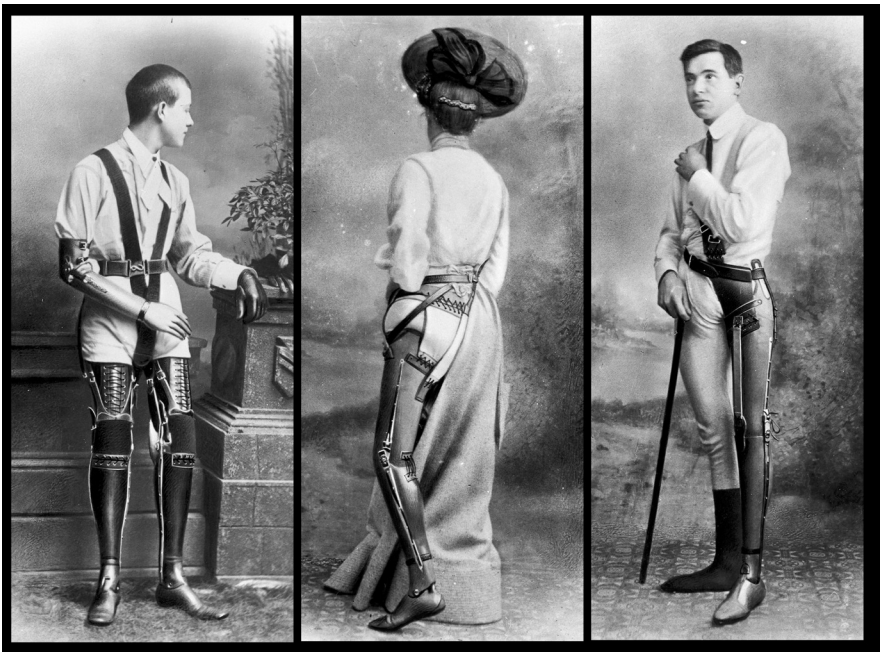

Fig. 1: Prosthetic legs developed by James Gillingham (1838–1924). Original photographic prints made by Gillingham, preserved by the Chard Museum, Somerset, England.

But let us return to Futurism. Marinetti envisaged with his *uomo moltiplicato* a fusion of the organic and mechanical systems and, ultimately, an "inevitable identification of man with the machine".[21] In the 1920s, this expanded into a *vita moltiplicata*, to use a term coined by Fedele Azari (1895–1930),[22] who outlined a Futurist concept of a *tipo standardizzato di uomo-macchina* (standardized Man-Machine).[23] Azari's art of the future was to be all-embracing, but had a particular focus on plants and what he called *macchina essere vivente* (mechanical living being).[24] Azari described in his manifestos a mechanized world that is peopled by robots equipped with computer brains, and by artificial life forms that are fed on artificial nutrition. He saw the human being as a *macchina ragionante*

21 "L'uomo moltiplicato e il regno della macchina", in: Marinetti, *Teoria e invenzione futurista*, 299. English translation in Marinetti, *Critical Writing*, 86.

22 Fedele Azari, "Vita simultanea futurista", in: Lucia Collarile (ed.), *Fedele Azari: Vita simultanea futurista*, Trento 1992, 101.

23 Azari, "Vita simultanea futurista", 101.

24 Azari, "Per una società di protezione delle machine", in: Collarile, *Fedele Azari*, 96.

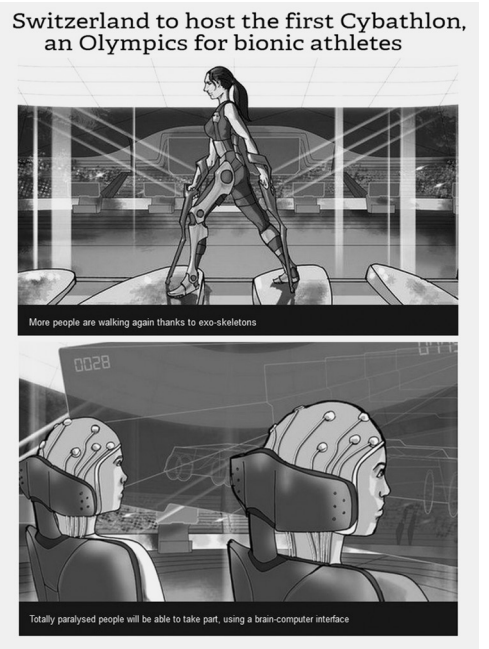

Fig. 2: The Cybathlon, held for the first time in October 2016 at Swiss Arena, Kloten.

(a reasoning machine) that could be perfected for survival in a world in which the natural fauna, flora and habitats have been replaced by artificial life forms that overcome what he called "the imperfection, weakness and inconstancy of the organic world".[25]

Another artist, for whom the mechanical living being became a life-long preoccupation, was Fortunato Depero (1892–1960). His *essere vivente artificiale* (artificial living being) was presented in several ballets performed by "automated contraptions that dance new and entertaining mimes".[26] Depero's *macchinismo* oscillated between magical playfulness, a proto-surrealist concept of the 'marvellous' and grotesque humour. Quite different in nature were the creations of Vinicio Paladini (1902–1971) and Ivo Pannaggi (1901–1981), who looked at a technologically based civilization from a Proletkult angle. In 1921, the Communist youth organization was fostering a controversial discussion on the rôle of art in the revolution. *Avanguardia*, the organ of the Federation of Young Socialists, who had recently joined the Communist Party, served as an important forum for this

25 Azari, "Per una società di protezione delle machine", in: Collarile, *Fedele Azari*, 96.
26 "Complesso plastico-mobile", in: Bruno Passamani (ed.), *Fortunato Depero 1892–1960*. Bassano del Grappa 1970, 158.

debate. Given the recent establishment of a Turin section of the Proletkult with a strong Futurist membership, Futurism featured prominently in the dispute conducted in the periodical. Paladini intervened with three contributions, in which he outlined a Futurist concept of a left-wing art that was inspired by a new god, *il Dio Proletario*, and would operate under the sign of the machine. Together with this friend Ivo Pannaggi he illustrated his ideas of a progressive proletarian culture in a *Ballo meccanico futurista* (Futurist Mechanical Ballet), presented on 2 June 1922 at the Casa d'Arte Bragaglia in Rome. It featured a proletarian Man-Machine, a cross between a human and an artificial being, who was torn between the human and the mechanical world.[27] This hybrid defined the ideological message of the ballet, which was also outlined in the *Manifesto dell'arte meccanica futurista* (Manifesto of Futurist Mechanical Art), written for the occasion of the performance.[28] The two authors emphasized the "new necessities", "new activities", and "new forms imposed by modern engineering", because a "mechanical consciousness determines the atmosphere of our sensibility" and will consequently purify our senses from the residues of the past. The human species has become integrated into the world of machines and breathes the air of a mechanical atmosphere to such an extent that our whole sensibility has become changed by this new environment: we think mechanically, we act like machines, our bodies resemble constructions of steel. The machine has given rise to a new form of civilization based on change, innovation, progress. The laws of the mechanical world will now also become "the first principle of a new aesthetics".

The Futurist Mechanical Theatre of the 1920s produced a number of performances, which operated with the idea of a mechanical environment in which the performer was little more than a machine-like construction. For example, in Depero's *Anihccam del 3000* (Enihcam of the Year 3000), the dancers portray two locomotives who fall in love with their station master. Enrico Prampolini pursued a different route in *Psicologia di macchine* (Psychology of the Machines, 1924). He employed masks to create a symbolic representation of the machine and otherwise made use of the human body to imitate the movements of thrusting pistons and swivelling cogs. In *Mercante di cuori* (Merchant of Hearts, 1927) and *L'ora del fantoccio* (Hour of the Marionette, 1927), Prampolini employed marionettes as doubles of the actors and explored the differences between mechanical and organic beings. In *La danza dell'elica* (The Dance of the Propeller), produced in

27 All of these performances have been subjected to a detailed analysis in Günter Berghaus, *Italian Futurist Theatre, 1909-1944*, Oxford 1998.

28 It was published with a few weeks delay in *La nuova Lacerba* of 20 June 1922 and has been reprinted in Enrico Crispolti (ed.), *Pannaggi e l'arte meccanica futurista*, Milano 1995, 178.

different choreographies in 1923, 1924 and 1928, the dancer imitated the flight of an aeroplane and moved around on stage in a costume furnished with concentric rings, a gigantic, silver-coloured propeller on the chest, paddle-like wings attached to the arms and a silver helmet to protect the head.[29]

Futurist theatre had an important role to play in the Futurist quest for a mechanized life of the future as it functioned as an anthropological laboratory, in which scenarios and prototypes of a forthcoming global revolution could be investigated. This Futurist fusion of the two domains of art and life and the re-fashioning of the universe according to artistic principles predates in many ways some of the contemporary developments that combine science and aesthetics and to which the last section of this essay will be dedicated.

Contemporary Realizations of the 'Extended Man'

By the twenty-first century, some ten percent of the Western population qualify to be called 'cyborgs'. They are being kept alive by electronic pacemakers, made mobile by prosthetic limbs and synthetic joints, or interact with the world by means of hearing aids, ophthalmic accessories and artificial larynxes. Ever-more powerful human-machine interfaces, together with biotechnology and genetic engineering, have given rise to visions of conquering the physical and mental limitations of the human species.

One of the first artists to explore the consequences of a body being accessed and acted upon by cybernetic means was Stelarc (artist name of Stelios Arcadiou; born 1946). He was particularly interested in the interaction between humans and machines and the hybridization of the body with new technologies. In his performances he extended the physical capacities of the human being by making the machine a component of the body and the body a component of the machine. Stelarc's aesthetics of prosthetics was inspired, like Marinetti's Futurist dream, by Lamarck. He wanted to create a re-designed human body, or – as he once said – "A synthesis of organic and synthetic [systems] to create a new hybrid human, one that can evolve with Larmarckian speed".[30]

29 For more information on this performance see Berghaus, *Italian Futurist Theatre*, 422–426.

30 James D. Paffrath and Stelarc (eds), *Obsolete Body / Suspensions / Stelarc*, Davis 1984, 52. For a more detailed discussion of Sterarc's œuvre see Günter Berghaus: "From Futurism to Neo-Futurism: Continuities and New Departures in Twentieth-Century Avant-Garde Performance", in: Dietrich Scheunemann (ed.), *Avant-Garde / Neo-Avant-Garde*, Amsterdam 2005, 195–224.

A similar type of human being has emerged in recent years in the world of popular culture, where young women with physical impairments have achieved 'star cult' status. One of them is Viktoria Modesta, a singer, songwriter, performance artist and fashion model. In 2007, she had a leg amputation and subsequently became the first Bionic Pop Artist, known for challenging the modern perception of feminine beauty. Another star who needs to be mentioned here is the athlete and double-amputee Aimee Mullins. Alexander McQueen sent her in 1999 onto the catwalk with intricately carved legs resembling Victorian boots, which she subsequently kept in her collection of artificial limbs. When Mullins featured on the covers of style magazines such as *Elle*, *Vogue*, *i-D* and *Dazed*, her career diversified. She acted in Matthew Barney's film *Cremaster 3*, Nick Knight shot her for the Pirelli Calendar, she was elected President of the Women's Sports Foundation, she served on the boards of numerous non-profit organizations.

A number of other designers followed suit and gave disabled women an opportunity to pursue a modelling career or to achieve a breakthrough into pop stardom. Some of them used their success for branching out into photographic modelling. The increased presence of women with physical impairments in popular media has meant that the *donna moltiplicata* has attracted the interest of style gurus who took to artificial limbs as a medium that fulfil both artistic and practical purposes.

Marinetti explained in *Extended Man and the Kingdom of the Machine* that he was promoting the love of the machine not just in a metaphorical sense. He asked his readers: "Have you ever watched an engine driver lovingly washing the great powerful body of his engine? He uses the same little acts of tenderness and close familiarity as the lover when caressing his beloved".[31] Marinetti's notion of eroticism was anything but typical of his age. He once declared in an interview with *Comœdia* that he wanted to "combat the tyranny of love" by replacing sentimental affection with other forms of passion.[32] One of them he demonstrated in *The Electric Puppets*, in which a man – who in the second edition is given the

31 "L'uomo moltiplicato e il regno della macchina", in: Marinetti, *Teoria e invenzione futurista,* 298. English translation in: Marinetti, *Critical Writings*, 85.

32 "Interview sur le futurisme", *Comœdia*, 26 March 1909. Reprinted in Marinetti, *Poupées électriques: Drame en trois actes, avec une préface sur le Futurisme,* Paris 1909, 29–34. English translation in: Marinetti, *Critical Writings*, 20.

Fig. 3: Sophie de Oliveira Barata: *The Alternative Limb Project* (2011 to present).

name Riccardo Marinetti[33] – feels erotically charged in the presence of artificial and mechanical beings. These puppets stimulate his predilection for an amorous "electricity that makes our nerves vibrate like conducting wires of lust".[34] Such a "prodigious stimulant of the heart"[35] was for him 'Futurist' because "it deceives and kills the slow, the old, the fearful, the stationary".[36]

Another form of Futurist passion he presented in chapter 10 of *Come si seducono le donne* (How to Seduce Women), in which women are encouraged to seek the sexual company of mutilated soldiers because "surgery has already started a great transformation (and a) physiological revolution. Steel and flesh have been conjoined. Steel has been humanized and the flesh of the extended man has been metallized. The body is now a motor with different parts that are interchangeable and replaceable."[37] In view of such literary representations of a Futurist type of sexuality it is likely that Marinetti would have applauded when mutilated women

33 The play has a rather convoluted history and exists in various French and Italian versions. Their key themes have been elucidated by Daniela Quarta, "Il teatro prefuturista de Marinetti: Dramma senza titolo, Roi Bombance, Poupées électriques", in: *Revue romane* 16, 1981, 1–2, 120–146. André Rombout, "Des 'Poupées électriques' aux 'Fantocci elettrici', ou comment se fabriquer une sintesi futurista", in: Sandro Briosi, and Henk Hillenaar (eds), *Vitalité et contradictions de l'avant-garde*. Mayenne 1988, 195–204. Selena Daly, "From Symbolism to Futurism: 'Poupées Électriques' and 'Elettricità'", in: *Rivista di studi italiani* 17, 2009, 1, 46–59.

34 F.T. Marinetti, *Poupées électriques*, 132.

35 F.T. Marinetti, *Poupées électriques*, 132.

36 F.T. Marinetti, *Elettricità sessuale*, in: Marinetti, *Teatro*, ed. by Giovanni Calendoli, Vol. 2, Roma 1960, 447.

37 F.T. Marinetti, *Come si seducono le donne*, Firenze 2003, 102–103.

present themselves openly as sexually attractive beings, as Aimee Mullins did in a much publicised image shot by Ali Smith.[38]

Conclusion

There was always a tendency in Marinetti to see in the machine a metaphysical force and not just a symbol of technological progress. His creative writings and manifestos document a quest for a utopian existence where art and life have been fused by means of science and technology. Here, the machine is a cosmic and divine force that enables the human race to fulfil its creative potential and grow beyond a commonplace humdrum existence.

The 'Extended Man' described in Marinetti's manifestos became a key facet of Futurist anthropology and was explored in novels, plays, theatre productions and works of fine art. It was inspired by Larmarck's theory of transformism and organic evolution and treated prosthetics as an intermediate step towards an "incalculable number of human transformations" and, ultimately, "the creation of a nonhuman species".[39] When Marinetti declared "that in human flesh wings lie dormant",[40] he was formulating a utopian dream. However, it was an ideal based on actual prototypes and a vision that led to some remarkable works of art.

Whereas in the nineteenth century, prosthetics emulated the members it was supposed to replace, in modern prosthetics, like those produced by Sophie de Oliveira Barata, the medical engineer, who has understood the functional principles of the body, is able to *surpass* the biological model. This means that the prosthesis – once considered a sign of defect or a handicap – has become an asset the wearer would not hide but exhibit with pride.

Futurist art did not only seek to fuse art and science but also art and life. Science and technology are usually considered functional, but in the hands of the Futurists they became a source of aesthetic inspiration. Similarly, the prostheses created by Sophie de Oliveira Barata are not only technical but also aesthetic marvels. A Futurist would say: they are works of art, inspired by science, but contributing towards an optimized human existence. They therefore demonstrate that Marinetti's quest for an art inspired by science has finally found some astounding realizations in our twenty-first-century society.

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38 Although the image is widely circulating on the internet, Aimee Mullins and her lawyers have requested that the photo is not to be used any longer in print publications. It can therefore not be reproduced in this volume.

39 "L'uomo moltiplicato e il regno della macchina", in: Marinetti, *Teoria e invenzione futurista*, 299. English translation in: Marinetti, *Critical Writings*, 86.

40 Marinetti, "L'uomo moltiplicato", 299. English translation in: Marinetti, *Critical Writings*, 86.

Paola Sica

Iconoclastic Ginna

Futurism, Science and Total Art

This reassessment of Arnaldo Ginanni Corradini's (1890–1982) early works in their cultural context reveals how he created his space in Futurism while seeking new correspondences in the arts and the sciences. Corradini, known as Ginna, recognized the new possibilities offered by modern technology like other Futurists; but, unlike the more orthodox members, he did not frequently and bombastically extoll its many merits. Being informed by what he considered new scientific texts, especially those regarding theosophical and psycho-physiological speculations, he searched for new ways of defining reality and new ways for representing it through different forms of art. His goal was to coin a new epistemology and to find new strategies for an improvement of the quality of life. Ginna was a very versatile artist. In addition to being interested in music, he devoted himself to literature, the visual arts and film. He was one of the first Futurists to make abstract art in Italy. He was also one of the first to work with film, having detected in this new medium a manifold expressive potential for achieving his idea of total art: an art that would innovatively associate word, image and sound, and would capture tangible and intangible elements of the cosmos.[1]

In the past various scholars have conceived of Ginna as a *sui generis* Futurist because of his open-mindedness to methods that were more frequently adopted in other avant-garde movements. Already in the sixties, for example, Massimo Scaligero, Giuseppe Sprovieri and Mario Verdone mentioned this artist's abstract tendency in his early painting: a tendency that, according to them, was not as evident in other Futurist works.[2] Later on, other critics have discerned Pre-Surrealist and Pre-Dada elements in Ginna's verbal and visual works, which, in their opinion, derived from his use of psychic automatist techniques and resulted in

1 I wish to thank all those whom I contacted for permission to reproduce the images in this article; among them, Ms Federica Ginanni Corradini, Dr Stefano Ginanni Corradini, Dr Riccardo Ginanni Corradini, Dr Luca Verdone, Dr Lucia Collarile, Dr Micol Forti and Dr Lucia Boschetti at the Musei Vaticani. I am also grateful to Dr Collarile for her helpful advice on how to proceed with the use of these images, and to Dr Gloria De Vincenti who introduced me to her.

2 Massimo Scaligero and Giuseppe Sprovieri, *Arnaldo Ginna: un pioniere dell'astrattismo*, Rome 1961; and Mario Verdone, "Il misterioso Ginna", in *Il Caffè: satirico di letteratura e attualità*, 15:1, February 1968, 56–58, here 56.

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