

- Lipsey M W, Wilson D B 1998 Effective intervention for serious juvenile offenders. In: Loeber R, Farrington D P (eds.) *Serious and Violent Juvenile Offenders*. Sage, Thousand Oaks, CA
- Lipton D, Martinson R, Wilks J 1975 *The Effectiveness of Correctional Treatment*. Praeger, New York
- Lösel F 1995 The efficacy of correctional treatment: A review and synthesis of meta-evaluations. In: McGuire J (ed.) *What Works: Reducing Reoffending*. Wiley, Chichester, UK
- Lösel F 1998 Treatment and management of psychopaths. In: Cooke D J, Forth A E, Hare R D (eds.) *Psychopathy: Theory, Research and Implications for Society*. Kluwer, Dordrecht, NL
- Marshall W L, Fernandez Y M, Hudson S M, Ward T (eds.) 1998 *Sourcebook of Treatment Programs for Sexual Offenders*. Plenum Press, New York
- McGuire J (ed.) 1995 *What Works: Reducing Reoffending. Guidelines From Research and Practice*. Wiley, Chichester, UK
- Palmer T 1992 *The Re-emergence of Correctional Intervention*. Sage, Newbury Park, CA
- Quinsey V L, Harris G T, Rice M E, Cormier C A 1998 *Violent Offenders: Appraising and Managing Risk*. American Psychological Association, Washington, DC
- Redondo S, Sánchez-Meca J, Garrido V 1999 The influence of treatment programmes on the recidivism of juvenile and adult offenders: An European meta-analytic review. *Psychology, Crime and Law* 5: 251–278
- Ross R R, Ross B (eds.) 1995 *Thinking Straight*. Cognitive Centre, Ottawa, Canada
- Sherman L, Gottfredson D, MacKenzie D, Eck J, Reuter P, Bushway S 1997 *Preventing Crime: What Works, What Doesn't, What's Promising*. Report to the United States Congress: University of Maryland, US Department of Justice, Washington, DC
- Spencer A P 1999 *Working With Sex Offenders in Prisons and Through Release to the Community*. Jessica Kingsley, London
- Tonry M (ed.) 1998 *The Handbook of Crime and Punishment*. Oxford University Press, New York

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Reification: History of the Concept

Notwithstanding its esoteric overtones and philosophical intricacies, reification (*Verdinglichung*) is a central concept of social theory in general and of critical theory in particular. Although reification has received the greatest attention in Western Marxism, and above all in Lukács' *History and Class Consciousness* (1923), it is important not to restrict the use of the concept to that tradition but to see that it can also and already be found in the work of Kant, Hegel, Nietzsche, Dilthey, Husserl, Heidegger, Simmel, and Max Weber to criticize the dehumanizing, rationalizing, and alienating tendencies of modernity.

As a technical term, the term reification emerged in the English language in the 1860s out of the contraction of the verb *facere* (to make) and the substantive *res* (thing), which can refer both to concrete and empirically observable things (*ens*) and to ab-

stract, indeterminate things (*aliquid*). As a synonym of 'thingification,' the inverse of personification, reification metaphorically refers to the transformation of human properties, relations, processes, actions, concepts, etc. into *res*, into things that act as pseudopersons, endowed with a life of their own. This material transmutation of persons, relations, processes, concepts, etc. into thing-like entities that act like pseudopersons can operate both on a methodological and a social level. In both cases, however, the concept is usually used as a *Kampfwort* to denounce the 'violence of abstractions,' either of conceptual abstractions (Sohn-Rethel's *Denkabstraktionen*) that suppress the reflexive embeddedness of concepts into their social context, treat social facts as things, and transform metasubjects into megasubjects, or of real abstractions (Marx's *Realabstraktionen*) that strip individuals of their autonomy and reduce them to cogs of an abstract social machinery. This reference to the Kantian notion of autonomy is important. Outside of the normative context of an 'enlightened critique of the Enlightenment,' the notion of reification hardly makes sense, as can be gathered from the fact that conservative, skeptical, and ultraliberal theorists such as Gehlen, Luhmann, and Hayek have a theory of the autonomization of social structures but no theory of reification to connect it to the alienation of individuals in modern capitalist industrial societies.

1. Methodological Reification—or the Critique of Conceptual Abstractions

In the philosophy of the social sciences, the concept of reification is used (a) to denounce the hypostasis or substantialization of concepts (nominalist critique of reism), (b) the naturalization of the subject and the life-world (humanist critique of naturalism), and (c) the ideological justification of the status quo (dialectical critique of fetishism).

1.1 Nominalist Critique of Reism

In the case of the critique of reism (or naive conceptual realism), the notion of reification of concepts is used to denounce, from a nominalist, vitalist, or criticist perspective, the categorical error of transforming abstractions (notions, representations, concepts) into a material reality, in a concrete object 'out there.' Reification is here understood as a synonym of the 'fallacy of misplaced concreteness' (Whitehead). What is criticized is the hypostasis of concepts, analytical constructs, and ideal types, the sliding from the substantive to the substance, which involves a subreption of the categorical thing with the 'thing in itself.' This is, for instance, the case with macrosociologists who transform their own conceptual constructs or those of

the actors ('the State,' the *Bourgeoisie*, the 'Proletariat') into historical subjects capable of agency and of determining their own ends ('the State decides,' 'the Anglican Church resists,' 'the glorious Proletariat triumphs,' etc.). It should, however, be noted that due to the absence of a consensus on the ultimate referents of reality and the fact that one can always submit the concepts of the scientist to a neo-Kantian critique of ontology, the charge of reification is almost inevitable. Given that one's typification is another's reification, the critique of 'false conceptual realism' (Weber) is endemic in sociology.

1.2 Humanist Critique of Naturalism

The critique of positivist naturalism in terms of reification of the subject and the life-world is linked to the series of methodological disputes (*Methodenstreit*) which, since the double foundation of sociology by Comte and Dilthey in the nineteenth century, have opposed the partisans of the method of causal explanation (*Erklären*) to the partisans of the interpretative methods (*Verstehen*). Drawing on Vico's principle of the *verum factum* (*verum et factum convertuntur*), according to which we can understand the sociohistorical reality because it is a human product, but not nature which is a divine product, humanists claim that the appropriate method of sociology is interpretative in that it aims to understand, by means of a phenomenological and hermeneutic reconstitution of the meaning of action, the social-historical world (Hegel's objective spirit) as an objectivation of subjective actions. Social facts thus have a meaning and cannot be treated 'as if they were things' (Durkheim). The naturalistic elimination of the meaningfulness of action through statistical observation is reifying in that it transforms psychic acts into pseudophysical facts and reduces culture to (second) nature. Against Durkheim and his fellow 'factists' who 'change the subject' of the human sciences by substituting factors for actors, humanists thus argue that social facts are not things but that things are social facts whose meaning can be understood and which can be interpreted as an 'ongoing accomplishment of the concerted activities of daily life' (Garfinkel).

1.3 Dialectical Critique of Fetishism

The dialectical critique of fetishism offers a meta-theoretical critique of the ideological implications of *bourgeois* theories and methodologies of the social that, due to a lack of reflexivity on their context of genesis and application, legitimize the status quo. Dialecticians accept the limits of 'hermeneutic idealism.' When social relations have crystallized into a

'second nature' and social subsystems follow their own pseudonatural laws, 'dehumanizing' theories (e.g., functionalism, structuralism, systems theory) and methods (e.g., linear modeling, statistical regression) can and have to be applied. But if one does not want to fall prey to a 'reification of the second order' and give a 'reified perception of the reifying' (Adorno) that willy-nilly endorses the reality it registers, the observed facts have to be 'mediated by the totality' (Lukács 1923) and defetishized in such a way that the tension between the real and the possible, between what is and what could or should be, becomes perceptible within the facts themselves.

2. Social Reification—or the Critique of Real Abstractions

In the tradition of Western Marxism, Marx's theories of alienation and the fetishism of commodities are combined with Hegel's dialectical phenomenology of spirit, Simmel's theory of the tragedy of culture, and Max Weber's theory of formal rationalization to form a critical theory of society. The concept of reification is used to refer to the relatively autonomous, alienating and alienated functioning of the social and cultural (sub-) systems of modern capitalist societies that impose their constraints from without on individuals, limit their freedom and tend to reduce them to powerless 'carriers' or passive 'executioners' of the system. As products of praxis, institutions and organizations are human objectivations, but in the course of their development, the cultural and social (sub)systems have been complexified, formalized, rationalized, and depersonalized to such an extent that eventually they have been transmuted into self-referentially closed systems that function independently of the will and the consciousness of individuals, thwart their plans, threaten their autonomy, and perhaps even their existence. The critique of reification is dialectical and thus somewhat paradoxical: the insistence on the alienating autonomy of the system, which is an objectivation of action, aims to reactivate the autonomy of the individuals and to overcome their alienation.

Although the concept of reification (*Verdinglichung*) can already be found in Hegel's *Philosophy of Right*, the real history of the concept begins with Marx and with Lukács's Hegelian interpretation of Marx. The origins of the theory of reification are usually found just where the word itself is absent, namely in the famous section on the fetishism of commodities (Marx 1869, Chap. 1, Sect. 4). Analyzing capitalism as a system of generalized exchange, Marx notes that the commodity has become the universal form of the product of labor, with the result that the exchange value of the commodity supplants the use value. Consequently, the exchange value appears to those

who exchange goods as a property of the commodity itself, whereas in reality it is the result of the labor that is incorporated in the commodity and that expresses itself as a quantitative relationship between the exchanged goods. 'It is nothing but the definite social relation between men themselves which assumes here, for them, the phantasmagoric form of a relation between things' (Marx 1869, pp. 23, 86). This inversion of humans and things is not simply an illusion, however, but an expression of the real nature of social relations in a competitive market environment. In the absence of a central organism that regulates both the production and the distribution of the products of labor, the social integration of humans is imposed from without by the systemic interconnection of things.

In 'Reification and the Consciousness of the Proletariat,' the central chapter of *History and Class Consciousness*, Lukács, a Hegelian Marxist who was once a student of Simmel and Max Weber, presents the classic formulation of the theory of reification. Synthesizing Weber's theory of formal rationalization with Marx's theory of commodity fetishism, Lukács generalizes the theory of commodity fetishism beyond the sphere of circulation. In the problem of fetishism, which he immediately identifies with the phenomenon of reification, he discovers the 'central, structural problem of capitalist societies in all its aspects' (Lukács 1923/1968, p. 257). The universality of the commodity form, conceived as the prototype of all the forms of objectivity that follow their own laws and dissimulate the traces of human relations that subtend them, affects the life of everybody, both in its objective and subjective manifestations. Objectively, individuals are confronted with a second nature of pseudo-things against which they are powerless; subjectively, they are estranged from their own activity, apprehending the products of their own activity in an alienated mode—'as if they were something else than human products' (Berger and Luckmann). Moving from the sphere of circulation to the sphere of production, Lukács rediscovers the theory of the alienation of labor which the young Marx had developed but not published in the *Parisian Manuscripts of 1844* (see *Alienation, Sociology of*). In the sphere of material production, reification expresses itself most clearly in the reduction of labor power to a commodity and of the laborer to an appendix of the machine. In capitalism, reification is generalized and the fate of the worker becomes paradigmatic of the fate of everyone. Expressing the Messianism of the oppressed, Lukács eventually reintroduces the Proletariat as the 'identical subject-object' of history whose revolutionary actions overcome alienation and reification and thus realize the Hegelian dream of the restoration of the 'beautiful totality.'

The development of the so-called Critical Theory of the Frankfurt School can best be understood as the result of a progressive disillusion with revolutionary

expectations. Eliminating the Hegelian-Marxist dialectic of consciousness, which they replace by a Freudian account of sublimation and repression, Horkheimer, Marcuse, and especially Adorno, who also gave a Nietzschean twist to the concept of reification, radicalize the Weberian-Marxist strand in Lukács' theory. Universalizing and totalizing reification to the point that it appears as an ontological feature of human civilisation, they almost end up indicting Reason as such. Indeed, to explain totalitarianism, Horkheimer and Adorno develop a negative philosophy of history which uncovers in the first protohistorical attempts to dominate nature the origin of the fatal unfolding of a diabolic logic of increasing reification that will find its culmination (but not its endpoint) in the death camps. In his *Theory of Communicative Action*, Jürgen Habermas (1981), the main representative of the second generation of critical theory, reformulates the theory of reification in terms of the paradigm of language. In this perspective, reification is no longer associated with rationalization as such, as was the case with Max Weber and the Frankfurt School, but reconceptualized in terms of the 'colonization of the life-world' by the subsystems of the economy and the administration. When the mechanisms of systemic integration (money and power) force back the forms of social integration from those domains that can only be integrated through language, a reification ensues that leads to a pathological deformation of the life-world.

Bibliography

- Arato A 1974 The neo-idealist defense of subjectivity. *Telos* 21: 108–61
- Arato A, Breines P 1979 *The Young Lukács and the Origins of Western Marxism*. Seabury Press, New York
- Berger P, Pullberg S 1965 Reification and the sociological critique of consciousness. *History and Theory* 4(2): 196–211
- Gabel J 1962 *La fausse conscience. Essai sur la réification*. Editions de Minuit, Paris
- Habermas J 1981 *Theorie des kommunikativen Handelns*, Vols. 1 and 2. Suhrkamp, Frankfurt, Germany (1984 *Theory of Communicative Action*, Vol. 1. Heinemann, London, 1987, Vol. 2. Polity Press, Cambridge, UK)
- Lukács G 1923/1968 Geschichte und klassenbewusstsein. In: (eds.) *Werke*, Band 2. Neuwied, Luchterhand (1971 *History and Class Consciousness*. Merlin, London)
- Marx K 1869/1972 Das Kapital, Vol. I. In: (eds.) *Marx Engels Werke*, Vol. 23. Dietz Verlag, Berlin (1974 *Capital*, Vol. 1, Lawrence & Wishart, London)
- Pitkin H 1987 Rethinking reification. *Theory and Society* 16(2): 263–93
- Rose G 1978 *The Melancholy Science: An Introduction to the Thought of Theodor W. Adorno*. Macmillan, London
- Thomason B C 1982 *Making Sense of Reification: Alfred Schutz and Constructionist Theory*. Humanities Press, Atlantic Highlands, NJ

Vandenbergh F 1997–1998 *Une histoire critique de la sociologie allemande. Aliénation et réification*. 2 vols. Editions la Découverte, Paris (2001 *Critique of Reification*. University of Minnesota Press, Minneapolis, MN)

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Reinforcement: Neurochemical Substrates

1. The Operant–Respondent Distinction

The neurochemical mechanisms that mediate reinforced or operant behavior may differ in a fundamental way from those underlying reflexes or respondent behavior. This is because environmental stimuli appear to control the two classes of behavior in fundamentally different ways. In reflexes, whether conditioned or unconditioned, the controlling stimulus precedes the response and elicits it. In operant conditioning, the controlling stimulus follows the response and elevates its subsequent probability. When the controlling stimulus precedes the response, information flow in the brain is afferent to efferent, as in the conventional reflex arc. On the other hand, when the controlling stimulus follows the response, as in reinforced behavior, the underlying brain organization seems to require an unconventional circuitry in which efferents are activated before afferents. However, the mechanisms for reinforced behavior do not require circuits that directly link efferent to afferent elements. This is because operant behaviors do not directly activate the goal-detecting afferent systems. Rather, the correct response operates on the environment to produce the goal object and it is this environmental change that activates the goal-detecting systems. Thus, although the reinforcement mechanism does not require efferent-to-afferent circuitry, it must recognize efferent–afferent contingencies and must be operated selectively by them, i.e., it must cause behavioral reinforcement only when the neuronal substrates of the correct response and goal object, in that order, are activated sequentially.

2. Characterizing the Brain Reinforcement Mechanism

The problem of characterizing the brain reinforcement mechanism has two main parts: the first is to identify the neuronal substrate that performs the reinforcing function (reinforcing substrate) and the second is to identify the neuronal substrate that is modified by the reinforcement process (target substrate). Since any goal object can reinforce any behavior in an animal's repertoire, it seems likely that there is (a) convergence of goal-object input to the reinforcing substrate, and (b) divergence of reinforcing output from this sub-

strate to the target substrate. Here we briefly summarize the substantial published literature that has been devoted to the identification of the reinforcing substrate. Until very recently, little consideration has been given to the question of the target substrate, but it may be useful to review some initial findings and to consider the directions that research on this problem may take.

2.1 Neurochemical Specialization

The idea that reinforcing functions are specialized neurochemically has guided research in this field for more than 30 years. The hypothesis that certain dopamine and opioid peptide brain cells may serve as reinforcing neurons is supported most directly by evidence from brain self-stimulation and drug self-administration experiments.

2.2 Electrical Self-stimulation of the Brain

In self-stimulation experiments, animals work to deliver electrical stimulation to their own brains through permanently indwelling electrodes. In the absence of other sources of reward, the reinforcement for self-stimulation behavior must arise from the neuronal activity that is excited by the electrical stimulus. If so, it would be logical to assume that some of the neurons under the electrode tip actually are the reinforcing neurons that mediate the effects of natural reinforcers or at least are neurons that directly excite them.

High self-stimulation rates are observed when electrodes are implanted in regions containing dopamine (or opioid peptide) cell bodies or pathways. In particular, self-stimulation tightly overlaps the distribution of dopamine cells in the ventral tegmentum and substantia nigra. Self-stimulation closely follows the anteriorly projecting dopamine fibers through the hypothalamus, but it correlates somewhat less closely with the dopamine terminal fields in the forebrain. The involvement of norepinephrine neurons in self-stimulation is more controversial. Although many laboratories report self-stimulation from sites in the vicinity of the locus coeruleus, it has not been possible to establish convincingly that the noradrenergic neurons that make up this nucleus are responsible for the reinforcing effect. Mapping of opioid peptide sites for self-stimulation is consistent with the idea that certain beta-endorphin and dynorphin neurons are involved in self-stimulation, but these studies are still in an early stage. The dopamine-opioid peptide reinforcement hypothesis also is supported by pharmacologic experiments. Antagonists of dopamine and opioid peptides, such as haloperidol and naloxone respectively, should block chemical transmission of reinforcement messages. In support of the model, there are many

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