

# Functions of Contemporary Eco-religious Communication in the Religious System

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## ABSTRACT:

The significance of eco-religious communication is not limited to the ecological and bioethical discourse. Within the context of the Science of Religion (Religious Studies), contributions by religious groups and individuals to the discussion of environmental issues as well as religious activities related to environmental concerns are treated as phenomena of contemporary religion that invite theoretical reflection and empirical research. This paper discusses the problem of determining the “religiousness” of eco-religious communication from the perspective of a Luhmannian systems theoretical approach to the study of religion. The paper explains the relevant concepts and premises of this approach, which will focus on the relation of eco-religious communication to the immanence/transcendence code of the religious system and the specific programs (teachings, regulations etc.) of particular religious traditions. According to the functionalist perspective of this approach, the religiousness of eco-religious communication is determined by its primary function within the self-referential network of communications.

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The paper first introduces the two dimensions of systems operation: basic operation and semantics. Next, the use of the concept “function” in the context of eco-religious communication will be explained. The fourth section briefly illustrates how the systems theoretical approach enables us to discern different functions and contributions of eco-religious communication in various contexts.

**Keywords:** Religious studies, theory of religion, ecology and religion, systems theory, Luhmann

# 從宗教學的角度探討 宗教系統生態學溝通的功能

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## 摘要：

生態學取向的宗教溝通的重要性不限於生態學論域本身。從宗教學的觀察角度來看，宗教系統的生態學溝通也是當代宗教現象，對相關現象的研究可以啟發有關宗教的理論性思維。本文應用盧曼系統理論的途徑來探討宗教系統生態學溝通「宗教性」的問題。就此途徑的功能論觀察角度而言，關鍵在於確定生態學溝通相關語意形式在宗教溝通系統封閉的運作網絡中所發揮的主要與次要功能。就各種宗教具體生態學溝通的例子而言，必須分析相關語意與宗教系統的「符碼」和個別宗教傳統「綱領」（教理、規範等）的關係。本文首先說明系統運作的兩種基本面向或層面：系統基本運作與語意。其次，闡明「功能」概念在宗教生

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本文係科技部整合型研究計畫《台灣環境倫理與動物倫理之佛教論述、影響與前瞻》之第二期報告。該項計畫編號為 NSC 101-2632-H-364-001-MY3。本計畫執行期間自民國 101 年 08 月 01 日起至 104 年 07 月 31 日止。

態學溝通方面的涵義。最後，針對宗教生態學溝通的具體例子，指出系統理論途徑有助於分別宗教系統的生態學相關溝通所發揮的不同功能與作用。

**關鍵詞：**宗教學、宗教理論、生態學與宗教、系統理論、盧曼

## **1. The problem of defining the “religiousness” of ecological communication in the religious system**

Religious communication increasingly reflects environmental concerns of contemporary society. The significance of this “eco-religious” communication is not limited to the ecological and bioethical discourse. Contemporary eco-religious phenomena also challenge our understanding of religion. Within the context of the Science of Religion (Religious Studies), contributions to the discussion of environmental issues by groups and individuals affiliated with religious traditions as well as religious exhortations and activities related to environmental concerns are treated as phenomena of contemporary religion that invite theoretical reflection. For example, how do we determine whether cases of explicit eco-religious communication occurring in various religious and socio-cultural contexts actually represent genuine religious statements?

Obviously, the answer will depend on the concept of religion applied by the relevant approach. This paper addresses the problem of determining the “religiousness” of ecological communication in the religious system by applying a Luhmannian systems theoretical approach to the scientific study of religion. Therefore, the following discussion of problems related to religion and ecology is not intended to be a contribution to the ecological or bioethical discourse. Perhaps some of the theoretical issues involved will be instructive for religious discussions of ecological problems, too.

Luhmann’s study on ecological communication that was published in 1988 is his most important direct contribution to a systems theoretical discussion of ecological issues.<sup>1</sup> It applies systems theory to explain how the various functional systems of modern society, including religion, may

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<sup>1</sup> Luhmann, N., *Ökologische Kommunikation – Kann die moderne Gesellschaft sich auf ökologische Gefährdungen einstellen?* (Opladen: Westdeutscher Verlag, 1988).

respond to environmental problems. Luhmann's interpretation of ecological communication in modern society emphasizes operational and structural constraints of the systems involved. His theory defines society as a self-referential system that comprises the totality of all processes of communication. A social system (society or its various subsystems) is neither able to discern itself as a whole in contrast to its environment nor capable of distinguishing and analyzing the environment in its entirety. Complex social systems are characterized by countless internal duplications of the system/environment distinction according to principles of function, hierarchy, center/periphery, interaction, etc. Each social system represents a different version of the system/environment relationship, it has its own unique environment, and it is part of the environment of other social systems, resulting in complex interdependencies and mutually incongruent patterns of observation. According to this communication-centered theory, society or any of its subsystems, including religion, is extremely unlikely to develop an effective ecological consciousness, because the social system has no complete picture of its environment, no comprehensive understanding of its relations to its environment and other systems, and is unable to process environment-related information and knowledge that is generally valid and is uniformly interpreted by other systems.<sup>2</sup>

In his studies of environmental history, Joachim Radkau has repeatedly pointed out that historical facts, especially the impact of the environmental movement on society, contradict Luhmann's pessimistic assessment.<sup>3</sup> However, Luhmann's study was an introductory work, not an

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<sup>2</sup> Günzel, M., "On Systems Theory as an Approach to the Study of 'Religion and Ecology' within the Context of the Science of Religion," *Hsuan Chuang Journal of Buddhist Studies* 《玄奘佛學研究》, No. 20 (September, 2013): 101-105.

<sup>3</sup> Radkau, J., *Die Ära der Ökologie – Eine Weltgeschichte* (München: C.H. Beck, 2011), pp. 8-11; Radkau, J., *Natur und Macht – Eine Weltgeschichte der Umwelt* (München: C.H. Beck, 2012), pp. 331-332.

in-depth analysis of empirical, historical material. Notably in the field of ecology and religion, systems theory still is a viable approach to the study of ecological issues in contemporary society. Within the context of the Science of Religion, the most important question is not whether eco-religious communication has an impact on the natural environment or on the development of ecological consciousness in contemporary society, but whether its function within the religious system is religious or not. This raises the question why the contemporary religious system adopts modern ecological and bioethical semantics and promotes environmentally conscious behaviour?

The paper first introduces the two dimensions of systems operation: basic operation and semantics. Next, the use of the concept “function” in this specific context of eco-religious communication will be explained. The fourth section briefly illustrates how these basic concepts of the systems theoretical approach enable us to discern different functions and contributions of eco-religious communication in various contexts.

## **2. Two dimensions of the religious system**

A systems theoretical interpretation of this problem will have to focus on two different dimensions or levels of the religious system: the basic operational level and semantics.<sup>4</sup>

The system/environment relationship as an observable difference that emerges as a result of a distinctive mode of operation within a larger context represents the first level. Simply put, this level of theory attempts to explain why religion exists. The system/environment difference exists as long as the self-referential network of operations reproduces itself in a complex environment that is characterized by countless system/environment relationships. According to Luhmann’s theory, the distinctive operation of

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<sup>4</sup> Günzel, M., op. cit., pp. 91-107.

society is communication, and the “medium” in which its forms are constituted and reproduced, is “meaning” (*Sinn*). Religion is a subsystem of society. Therefore, the religious phenomena to be explained are phenomena of communication.<sup>5</sup>

On this first level, the study will have to focus on the preconditions for the emergence and reproduction of the system/environment difference in its specific environment. Applying a functionalist pattern of observation, Luhmann’s theory of religion attempts to explain why religious forms of meaning that appear during the evolution of communication are selected and confirmed repeatedly, finally leading to the formation of the religious subsystem of society. The theory identifies a specific problem that is “solved” by religious forms of meaning: Self-referential systems that are based on the construction and reproduction of structures of meaning depend on using distinctions, but distinctions necessarily create a world that is divided into actualized meanings and potential meanings, and into observable and nonobservable causes and conditions. Consequently, the system has to find a way do deal with events and conditions that challenge the stability of its structures of meaning. Religion provides forms of meaning that seem to be able to transform the uncontrollable dimension of system operations into controllable forms, they convey meanings that cover the “whole” of the socially constructed but split universe of meaning by introducing a *transcendent* perspective that operates as a binary code (immanence/ transcendence).<sup>6</sup>

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<sup>5</sup> Individual psychic systems – a concept that replaces the terms “humans” and “subjects” used in traditional theory constructions – operate in the same medium and are the precondition for the emergence of any form of communication, but they are dealt with only as far as their structural coupling with social systems is concerned; see Luhmann, N., *Soziologische Aufklärung 6* (Opladen: Westdeutscher Verlag, 1995), pp. 37-53.

<sup>6</sup> On the function and code of religion, see Ch. 2 and 3 in Luhmann, N., *Die Religion*

Accordingly, on this level, the most important question concerns the relation of ecologically relevant meanings to the function of religion: Does explicit eco-religious communication actually contribute to the operation of the religious system *as religion*?

The specific forms of meaning that are selected and reproduced by the self-referential operations of the religious system as well as the relationship of these forms to semantics of other systems in its environment represent the second dimension. This level of theory attempts to explain the historical semantics of religion. The complex transformations of religious semantics challenge functional explanations of religion. The theory will have to identify the conditions and problems of internal and external relations of the religious system that cause the process of interpretation and appropriation of non-religious ecological meanings. This raises questions concerning the compatibility of these meanings with the code and programs of the religious system, i.e. its worldview, thought, ethics, etc. How does a religious tradition translate modern ecological thought into religious meaning?

### **3. Functions of contemporary eco-religious communication**

Within the context of Luhmann's theory of modern society, 'differentiation' and 'self-description' are key concepts to consider when trying to determine the function of eco-religious communication.

Contemporary religious communication occurs in a social environment that is characterized by functional differentiation. In traditional societies, religion generally provided meanings that were valid and accepted in all other systems and therefore could serve to integrate different realms of meaning into an encompassing worldview. In modern society, religion is only one among various functional systems of society. Other functional systems (economy, science, politics, education etc.) do not need religious

meanings to continue their operations or solve problems caused by the uncontrollable dimension of meaning structures. Instead of being a source of integrating meaning for society, religion itself depends on being integrated into society.<sup>7</sup>

Furthermore, in a situation characterized by numerous incongruent patterns of observation of the various subsystems in contemporary society, social systems face pressure to legitimate their operations vis-à-vis other systems. Therefore, organisations and functional systems generate self-descriptions that justify the “meaning” of their existence, function, contribution, etc.<sup>8</sup> This need to produce self-descriptions that respond to the expectations or conditions of other systems (including other subsystems within a system) but are in line with the system’s own mode of operation certainly is another important factor generating or influencing eco-religious communication, because the modern religious system operates in an environment that emphasizes ecological semantics.

In view of these complex relations of the religious system to other systems of modern society, a systems theoretical approach to the study of eco-religious communication should distinguish between primary and secondary functions, and between functions and direct or indirect effects on other systems that may be called “contributions” (*Leistungen*).<sup>9</sup>

According to the first dimension or level of system operation mentioned above, the primary function of ecologically enriched religious

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<sup>7</sup> *ibid.*, p. 125.

<sup>8</sup> Luhmann, N., *Einführung in die Systemtheorie* (Heidelberg: Carl-Auer-Systeme Verlag, 2002), pp. 245-246; Luhmann, N., *Die Gesellschaft der Gesellschaft* (Frankfurt: Suhrkamp, 1998), Ch. 5.

<sup>9</sup> The second distinction follows Luhmann’s terminology. For brief explanations of the distinction “function/contribution” (*Funktion/Leistung*) see Luhmann, N., *Die Religion der Gesellschaft* (Frankfurt: Suhrkamp, 2000), p. 49; *Die Wissenschaft der Gesellschaft* (Frankfurt: Suhrkamp, 1992), pp. 264, 355-357, 635-637.

semantics is to perpetuate religious communication, i.e. to reproduce the operations of the religious system by communicating meanings that are in line with the dominant semantic and symbolic currents in its specific socio-cultural context, thereby stabilizing its precarious interdependencies with other systems, while at the same time subordinating the ecological meanings to its religious code and programs. This strategy requires subsystems that are in charge of reflecting the system's states and structures, and that may be able to influence the structural drift of the system, because their operations are always operations within the main system. Consequently, we may expect that the impact of isolated religiously inspired persons (e.g. academics) on the ecological consciousness of the religious system will hardly be felt, whereas religious organisations may effectively implement eco-religious policies within their realm.

Since the primary function of eco-religious communication is not directly related to other social systems and their environmental concerns, but represents a response to problems and conditions in the religious subsystem of society, the sources for the legitimation of expressions of religio-ecological consciousness must be religious, not ecological or bioethical, to be effective. Ecological meanings must be interpreted as aspects of the relevant religious code (immanence/transcendence, e.g. "god" or "nirvāṇa") and programs (doctrine, ethics, etc.), and they must appeal to the predominant motivation of the relevant communication system, i.e. its "symbolically generalized communication medium" (*symbolisch generalisiertes Kommunikationsmedium*). "Faith" often functions as such a communication medium in organized religion, especially Christianity.<sup>10</sup> In the context of Taiwan's religions, "merit" perhaps is the predominant symbolically generalized communication medium, and if this assessment is correct, in Taiwanese society, eco-religious communication would have to

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<sup>10</sup> Luhmann, N., *Die Religion der Gesellschaft* (Frankfurt: Suhrkamp, 2000), p. 205.

invoke this medium to be religiously effective.

Especially in the case of organisations, eco-religious semantics may also serve a secondary function, for example as a means of procuring and securing resources (external and internal), or as a strategy in situations of dialogue or competition with other subsystems of religion or society. Finally, an ecologically significant effect on the natural environment or on the operations of other systems (including the “behaviour” of psychic systems) that is caused directly or indirectly by religious actions or utterances may be called a “contribution” of the religious system to other systems.

#### **4. Determining functions and contributions of eco-religious communication in various contexts**

These theoretical distinctions will have to prove their usefulness when analyzing contemporary eco-religious communication in various traditions and cultural contexts. The following examples only serve to briefly illustrate the systems theoretical approach outlined above and need further elaboration.

The focus on the “religiousness” of explicit ecological communication in the religious system reveals complex function/contribution relationships. For example, a growing number of Taiwanese followers of folk religious beliefs who used to burn “gold paper” and incense as an offering now gradually comply with policies aimed at reducing the negative environmental effects of this religious practice by reducing the amount or accepting substitutes. According to examples reported by newspapers, the adherents apparently do not change their habits for religious reasons, but because of indirect social pressure, i.e. the implementation of environmental policies by the persons in charge of the temples; however, the change still had to be religiously legitimated by consulting the relevant god.<sup>11</sup> In these

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<sup>11</sup> For two recent examples see “Yi liang dai jin zhu huanbao – Xingang liuxinggong shou hao ping” 「『以糧代金』助環保 新港六興宮受好評」, *The Liberty Times* (online)

cases, adopting ecological semantics serves to stabilize relations to other (non-religious) systems, but there is no direct relation to the primary function of religion.

By contrast, the rejection of incense and other material offerings to the gods as part of regular religious practice may also be the result of genuine religious considerations lacking any explicit reference to environmental concerns. For example, the popular temple Xingtangong (Taipei) abolished incense burners and prohibited other material offerings in 2014, referring to instructions given by the temple's founder decades ago, and declaring that time was ripe to realize these instructions, because the temple's adherents now accepted the change, and the gods had given their approval.<sup>12</sup> In this case, the environmentally positive impact was a contribution to the religious system's environment (i.e. other social systems), but its primary function was religious: it was intended to emphasize and strengthen the spiritual dimension of faith.

As mentioned above, complex religious organisations are more likely to adopt ecological measures as part of their religious operations. For example, members of Taiwan's Tzu Chi foundation – an explicitly environmentally conscious religious organisation – who take part in the organisation's recycling enterprise consider recycling to be religiously meaningful, not because non-religious institutions (e.g. scientific observers, government

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自由時報電子報, 2014/2/23 (<http://www.libertytimes.com.tw/2014/new/feb/23/today-center1.htm>; accessed 2014/03/15); “Xianliang facaijin – Weitiangong mei zhouri 30 ming” 「限量發財金－威天宮每周日 30 名」, Chinatimes (online) 中時電子報, 2014/02/24 (<http://www.chinatimes.com/newspapers/20140224000478-260107>; accessed 2014/03/15).

<sup>12</sup> “Xingtangong che xianglu gongzhuo – yuanlai shi ta de xinyuan” 「行天宮撤香爐供桌...原來是他的心願」, United Daily News 聯合報 (online), 2014/8/25 (<http://g.udn.com/NEWS/NATIONAL/NAT3/8892981.shtml>; accessed 2014/8/26).

agencies, environmental groups) confirm its ecological value, but because their *guru* has proclaimed that recycling and other ecological actions are part of a wider scheme, i.e. the Bodhisattva path; consequently, the volunteers are called “Bodhisattvas of environmental protection”.<sup>13</sup> In this case, the integration of ecological semantics and actions into the soteriological frame of Mahāyāna Buddhism is necessary to inspire the motivation needed, in other words: only by subordinating ecological meanings to the immanence/transcendence code of religion and by appealing to the relevant “generalized communication medium” (in this case probably: merit) will these meanings be operative as elements of the self-reproduction of the religious system.

In Germany, catholic and protestant churches cooperate with government agencies to promote environmental consciousness. Church organisations acknowledge their responsibility for the environment and even have their own “environmental officers” (*Umweltbeauftragte*) who are in charge of integrating environmental policies into all levels of church operations; for example, they have published detailed guidelines for the reduction of carbon dioxide emissions during church meetings,<sup>14</sup> general measures for climate protection,<sup>15</sup> and reports on biodiversity projects in

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<sup>13</sup> *Huanbao pusa* 環保菩薩; for this and other terms used to combine ecological and religious semantics, and for some programmatic statements by the organisation’s founder Cheng Yen see the introductory text on the organisation’s homepage: [http://www.tzuchi.org.tw/index.php?option=com\\_content&view=article&id=353%3A2009-01-09-06-51-02&catid=56%3Aenvironmental-protection-about&Itemid=292&lang=zh](http://www.tzuchi.org.tw/index.php?option=com_content&view=article&id=353%3A2009-01-09-06-51-02&catid=56%3Aenvironmental-protection-about&Itemid=292&lang=zh). (Accessed 2014/03/15)

<sup>14</sup> Diefenbacher, H., Rodenhäuser, D., *Zur Ermittlung und Kompensation der CO2-Emissionen bei (Synodal)-Tagungen* (Heidelberg: Forschungsstätte der Evangelischen Studiengemeinschaft, 2009).

<sup>15</sup> Foltin, Oliver., *Kirchen für ein gutes Klima – Klimaschutz in den evangelischen Landeskirchen* (München/ Heidelberg: Arbeitsgemeinschaft der Umweltbeauftragten

church buildings.<sup>16</sup> Interestingly, these and other publications address organisational and personal (individual church members) dimensions of church operations, but as far as the integration of ecological and bioethical semantics into the religious symbol system is concerned, the content of these publications is non-religious, except for occasional references to creation. These examples of eco-religious communication fulfill secondary functions that are related to other systems in the church organisation system's environment. However, there are church projects that are responsible for the merging of faith and environmental consciousness, resulting in eco-religious communication that fulfills a religious function. For example, the long-term project *Nachhaltig predigen* ("sustainable preaching") provides interpretations of the prescribed bible readings of the catholic and protestant liturgical year that promote the concept of sustainability; the texts are examples of the translation process that is necessary to integrate ecological and bioethical meanings into religious communication.<sup>17</sup>

## 5. Conclusion

Ecological religious communication occurs in various contexts and reflects different objectives. The scientific study of religion must be able to interpret instances of eco-religious communication without any bias, it must approach relevant phenomena as part of a much broader endeavour to understand religion. The systems theoretical approach enables us to discern different functions and contributions of ecological communication in the

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der Gliedkirchen der EKD/Projektbüro Klimaschutz der EKD, 2013).

<sup>16</sup> Van Saan-Klein, B., Schwiezer, R., *Vielfalt als Gewinn – Aktualisierte und erweiterte Projektberichte Biodiversität und Kirche*, Fulda: Forschungsstätte der Evangelischen Studiengemeinschaft, 2013.

<sup>17</sup> Main website: [www.nachhaltig-predigen.de](http://www.nachhaltig-predigen.de). All bible interpretations on sustainable preaching published since 2005 are available at [www.umdenken.de/?id=604](http://www.umdenken.de/?id=604).

religious system. The ongoing integration of ecological meanings into the symbol system of contemporary religion is an example of transformations in system/environment relations: externally, the relations to other functional systems of modern society are stabilized (secondary functions; contributions); internally, the system continues to operate and provide meanings that transform the uncontrollable dimensions of existence into forms of meaning that suggest controllability (primary function).

An important aspect of this transformation process that deserves more attention when applying systems theory is the role of psychic systems. Communication and consciousness systems are structurally interdependent. Therefore, the contributions of psychic systems are the precondition for the formation of the religious communication system. Moreover, psychic systems are the communication system's only (but indirect) source of contact with and information about the physical world. Environmental problems that are observed and communicated by psychic systems cause irritation and resonance in the religious system. The theory focuses on the function of eco-religious communication within the religious communication system, but the integration of ecological semantics into the religious system is a reaction to this kind of disturbance caused by psychic systems, too. It is a way of providing individual psychic systems with religious meanings that are in line with their experiences in a changing environment.

## **Bibliography**

### **1. Books**

Diefenbacher, H., Rodenhäuser, D., *Zur Ermittlung und Kompensation der CO<sub>2</sub>-Emissionen bei (Synodal)-Tagungen*, Heidelberg: Forschungsstätte

der Evangelischen Studiengemeinschaft, 2009.

Foltin, Oliver., *Kirchen für ein gutes Klima – Klimaschutz in den evangelischen Landeskirchen*, München/ Heidelberg: Arbeitsgemeinschaft der Umweltbeauftragten der Gliedkirchen der EKD/Projektbüro Klimaschutz der EKD, 2013.

Luhmann, N., *Die Gesellschaft der Gesellschaft*, Frankfurt: Suhrkamp, 1998.

Luhmann, N., *Die Religion der Gesellschaft*, Frankfurt: Suhrkamp, 2000.

Luhmann, N., *Die Wissenschaft der Gesellschaft*, Frankfurt: Suhrkamp, 1992.

Luhmann, N., *Einführung in die Systemtheorie*, Heidelberg: Carl-Auer-Systeme Verlag, 2002.

Luhmann, N., *Ökologische Kommunikation – Kann die moderne Gesellschaft sich auf ökologische Gefährdungen einstellen?*, Opladen: Westdeutscher Verlag, 1988.

Luhmann, N., *Soziologische Aufklärung 6*, Opladen: Westdeutscher Verlag, 1995.

Radkau, J., *Die Ära der Ökologie – Eine Weltgeschichte*, München: C.H. Beck, 2011.

Radkau, J., *Natur und Macht – Eine Weltgeschichte der Umwelt*, München: C.H. Beck, 2012.

Van Saan-Klein, B., Schwiezer, R., *Vielfalt als Gewinn – Aktualisierte und erweiterte Projektberichte Biodiversität und Kirche*, Fulda: Forschungsstätte der Evangelischen Studiengemeinschaft, 2013.

## **2. Journals**

Günzel, M., "On Systems Theory as an Approach to the Study of 'Religion and

Ecology’ within the Context of the Science of Religion,” *Hsuan Chuang Journal of Buddhist Studies* 《玄奘佛學研究》, No. 20, September, 2013.

### 3. Electronic documents

“Xianliang facaijin – Weitiangong mei zhouri 30 ming”「限量發財金－威天宮每周日 30 名」, Chinatimes (online) 中時電子報, 2014/02/24, <http://www.chinatimes.com/newspapers/20140224000478-260107>; accessed 2014/03/15.

“Xingtangong che xianglu gongzhuo – yuanlai shi ta de xinyuan”「行天宮撤香爐供桌...原來是他的心願」, United Daily News 聯合報 (online), 2014/8/25, <http://g.udn.com/NEWS/NATIONAL/NAT3/8892981.shtml>; accessed 2014/8/26.

“Yi liang dai jin zhu huanbao – Xingang liuxinggong shou hao ping”「『以糧代金』助環保 新港六興宮受好評」, The Liberty Times (online) 自由時報電子報, 2014/2/23, <http://www.libertytimes.com.tw/2014/new/feb/23/today-center1.htm>; accessed 2014/03/15.

[http://www.tzuchi.org.tw/index.php?option=com\\_content&view=article&id=353%3A2009-01-09-06-51-02&catid=56%3Aenvironmental-protection-about&Itemid=292&lang=zh](http://www.tzuchi.org.tw/index.php?option=com_content&view=article&id=353%3A2009-01-09-06-51-02&catid=56%3Aenvironmental-protection-about&Itemid=292&lang=zh); Accessed 2014/03/15.

[www.nachhaltig-predigen.de](http://www.nachhaltig-predigen.de)

[www.umdenken.de/?id=604](http://www.umdenken.de/?id=604)

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